

COMMONWEALTH HONORS COLLEGE



16th annual
04

Re

conference

massachusetts
23

Se

university of

statewide
20

Ar

massachusetts

undergraduate
10

Ch

amherst

UMassAmherst

16th Annual Massachusetts Statewide
Undergraduate Research Conference
Friday, April 23, 2010 • 8:00 am - 5:00 pm
Lincoln Campus Center
University of Massachusetts Amherst

The Sixteenth Annual Massachusetts Statewide Undergraduate Research Conference is presented in conjunction with the Daffodil Lectures on sustainability and the environment, celebrating the long history of honors education at UMass Amherst and the tenth anniversary of Commonwealth Honors College.



Table of Contents

Conference Schedule	3	International Studies	192	Education	388
Acknowledgements	4	Japanese	195	Electrical Engineering	397
Keynote Speaker	5	Journalism	202	English	400
Venue Maps	6-8	Kinesiology	203	English Literature	401
		Latin American Studies	204	Environmental Studies	403
Oral Presentation Schedules		Legal Studies	206	Finance	412
	9	Literature	208	History	413
Poster Presentation Schedules		Management	212	Interdisciplinary Studies/BDIC	
	17	Marketing	219		420
Presenters / Oral		Mathematics and Statistics	220	Internship	423
Accounting	25	Music	225	Kinesiology	424
Advertising	27	Nursing	227	Legal Studies	435
African American Studies	28	Nutrition and Food Science	230	Literature	438
American Indian Studies	29	Philosophy	232	Management	439
Animal Sciences	46	Physics	236	Mathematics and Statistics	442
Anthropology	47	Political Science	238	Mechanical Engineering	443
Art	57	Psychology	249	Microbiology	450
Art History	58	Public Health	259	Molecular Biology	457
Astronomy	61	Radio - Television - Film	267	Nursing	459
Biology	62	Social Thought and		Nutrition and Food Science	476
Chemical Engineering	67	Political Economy	271	Philosophy	486
Chemistry	69	Sociology	274	Physical Therapy	489
Civil Engineering	70	Spanish	281	Physics	490
Communication	71	Women's Studies	282	Plant, Soil and Insect Sciences	
Communication Disorders	86				495
Community or Public Service		Presenters / Posters		Political Science	497
	87	Accounting	283	Psychology	501
Computer Science	111	Animal Science	285	Public Health	556
Criminology	112	Art	288	Social Thought and	
Decision Science	113	Art History	291	Political Economy	564
Economics	114	Biochemistry	292	Social Work	566
Education	119	Bioengineering	303	Sociology	568
Electrical Engineering	123	Biology	305	Studio Art	574
English	126	Chemical Engineering	339		
English Literature	144	Chemistry	341	Index of Presenters by Name	
Environmental Studies	153	Civil Engineering	370		575
Finance	156	Communication	371	Index of Presenters by Campus	
Forestry	159	Communication Disorders	374		582
Geography	161	Community or Public Service			
History	162		376		
Industrial Engineering	171	Computer Science	380		
Interdisciplinary Studies/BDIC		Criminology	383		
	172	Dance	385		
		Economics	386		

General Schedule

8:30 AM - 9:30 AM • Registration • First Floor Concourse

9:30 AM - 10:00 AM • Welcome Address, Auditorium

10:00 AM - 10:30 AM • Keynote Speaker - David McLaughlin • Auditorium

10:40 AM - 12:20 PM • Morning Poster and Oral Sessions • Floors 1, 2, 8 & 9

12:20 PM - 1:20 PM • Lunch (lunch not included)

1:20 PM - 4:50 PM • Afternoon Poster and Oral Sessions • Floors 1, 2, 8 & 9

Oral Presentations

10:40 AM - 11:25 AM • Oral Session I

11:35 AM - 12:20 PM • Oral Session II

1:20 PM - 2:05 PM • Oral Session III

2:15 PM - 3:00 PM • Oral Session IV

3:10 PM - 3:55 PM • Oral Session V

4:05 PM - 4:50 PM • Oral Session VI

Poster Presentations

10:45 AM - 11:45 AM • Poster Session I

1:20 PM - 2:20 PM • Poster Session II

2:35 PM - 3:35 PM • Poster Session III

3:50 PM - 4:50 PM • Poster Session IV

Acknowledgements

We would like to acknowledge the many faculty members who volunteered their time and expertise to review abstracts and give invaluable guidance to student presenters. We would like to express great appreciation to the following campus contacts for their time and support of the conference.

Stacy Evans • Berkshire Community College
Lee Torda • Bridgewater State College
Tom Grady • Bristol Community College
Joan Brenner • Bunker Hill Community College
Delores Bird • Cape Cod Community College

Sara Pollak Levine • Fitchburg State College
Deborah Dalton • Framingham State College
Lindy Gougeon • Greenfield Community College
Kim Hicks • Holyoke Community College
Matt Silliman & Susan Edgerton • Massachusetts College of Liberal Arts

Derrick Manns • Massachusetts Bay Community College
Johanna Branson • Massachusetts College of Art and Design
Mark Patrick • Massachusetts Maritime Academy
Susan Martelli • Massasoit Community College
David Kalivas • Middlesex Community College
Sheila Murphy • Mount Wachusett Community College
Marcey Marold • North Shore Community College
Ginger Hurajt • Northern Essex Community College
Susan McPherson • Quinsigamond Community College

Eric Entemann • Roxbury Community College
Joanna Gonsalves • Salem State College
David Winsper • Springfield Technical College
Dave Neely • UMass Amherst
Joyce Morrissey • UMass Boston

Jennifer Wilson Mulnix • UMass Dartmouth
Doreen Arcus • UMass Lowell
Ricki Kantrowitz & Glen Brewster • Westfield State College
Josna Rege • Worcester State College

We would also like to give special recognition to Conference Coordinator Dave Neely, Conference Assistant, Becca Smith, Meredith Lind, Melissa Woglom, Celso Avelar, Vance Chatel, Dhruv Kumar, Andy Gauvin, Shelley Gibbons, the Lincoln Campus Center staff, and the faculty, staff, and students at Commonwealth Honors College.

Keynote Speaker



Dr. David McLaughlin • 10:00 am. • Campus Center Auditorium

Chasing Interdisciplinarity while Chasing Tornadoes

The scenario is this: An F4 tornado suddenly touches down outside Norman, Oklahoma, in a region of the country known as Tornado Alley. Almost simultaneously, a close-knit array of tiny cellular-tower-mounted radars zeroes in on the lethal twister. The radar beams precisely triangulate on the location of the vortex and chase it with pinpoint accuracy down Berry Street. Personnel at the National Weather Service in Norman use a specially-designed console to trace the exact route as the tornado rumbles down this major shopping thoroughfare, chewing up buildings and hurling vehicles out of its path. Armed with precise positioning, the Weather Service and local emergency management officials issue a set of emergency alerts that save lives and reroute ground and air traffic away from the progress of the storm. Meanwhile, another tornado touches down across town and appears to be heading for a hospital. Should the network continue tracking the first storm? Should it switch to pinpoint tracking of the second storm? Or will we somehow afford to deploy a system that is capable of tracking both storms simultaneously? These questions reflect the mix of scientific, technological, and socio-policy challenges being undertaken within NSF's Engineering Research Center for Collaborative Adaptive Sensing of the Atmosphere (CASA). CASA is a consortium of 20 academic, industrial, and government organizations creating the new technology capable of unprecedented views of the atmosphere. The driving vision of the center is that dramatic improvements in sensing, detecting, predicting, warning, and responding to hazardous weather events can be achieved by building a system that targets its resources onto key regions where and when the end-user need is greatest. Achieving this vision requires the sustained collaboration of engineers, decision scientists, computer scientists, meteorologists, and sociologists, working in conjunction with the ultimate end-users, to create a new approach to weather hazard response. Part technical, part human interest, this talk addresses the challenges, the pleasures, and the opportunities inherent in a cross-disciplinary systems-level research environment that address an important national need and provides an exciting and fertile learning environment for tomorrow's science and engineering students.

Biography:

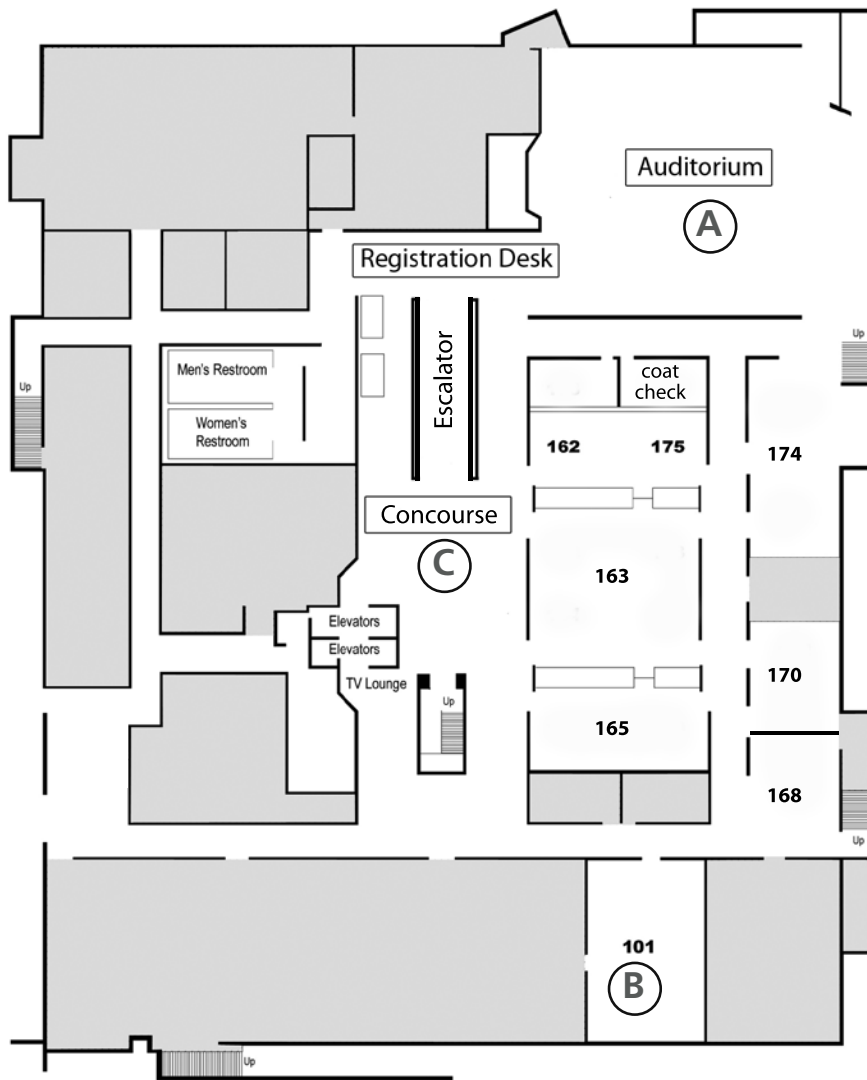
David J. McLaughlin is Professor of Electrical and Computer Engineering (ECE) at the University of Massachusetts Amherst where he serves as Associate Dean of Engineering and director of the NSF Engineering Research Center for Collaborative Adaptive Sensing of the Atmosphere (CASA). Dr. McLaughlin has been on the UMass Amherst ECE faculty since 2000. He received his B.S. and Ph.D. degrees from the University of Massachusetts Amherst in 1984 and 1989, respectively, and he spent the period from 1989 through 1999 on the engineering faculty at Northeastern University. He has held research fellowships at the US Naval Research Laboratory and the USAF Rome Laboratory, and he spent the 2007-08 academic year on sabbatical as an Engineering Fellow at Raytheon Integrated Defense Systems. His research and teaching interests include radar design, systems engineering, and policy-mediated sensor networks.

Floor Plan Of Conference Facilities

Lincoln Campus Center, First Floor

Floor Plan of Conference Facilities

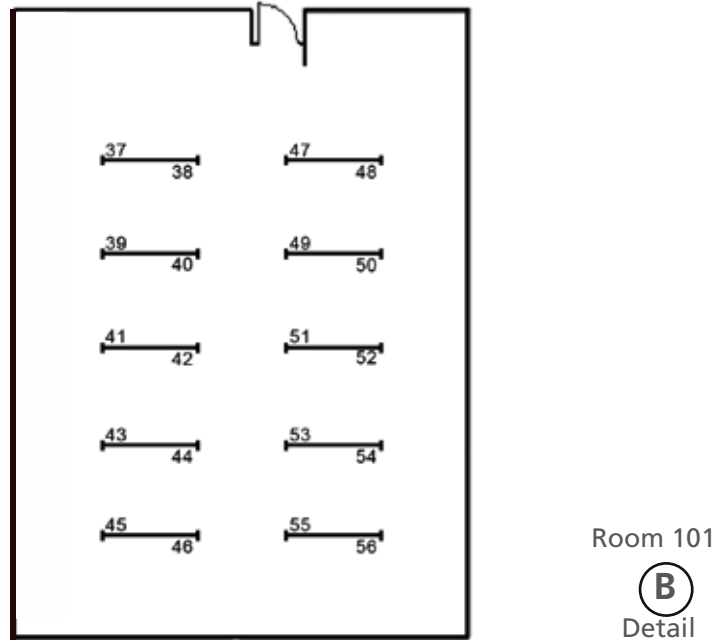
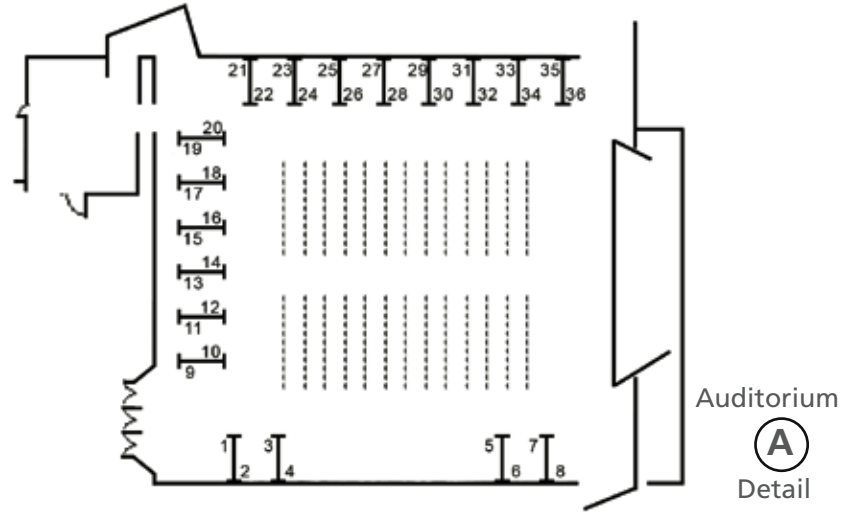
Lincoln Campus Center, First Floor



- Auditorium (A)
- Room 101 (B)
- Concourse (C)

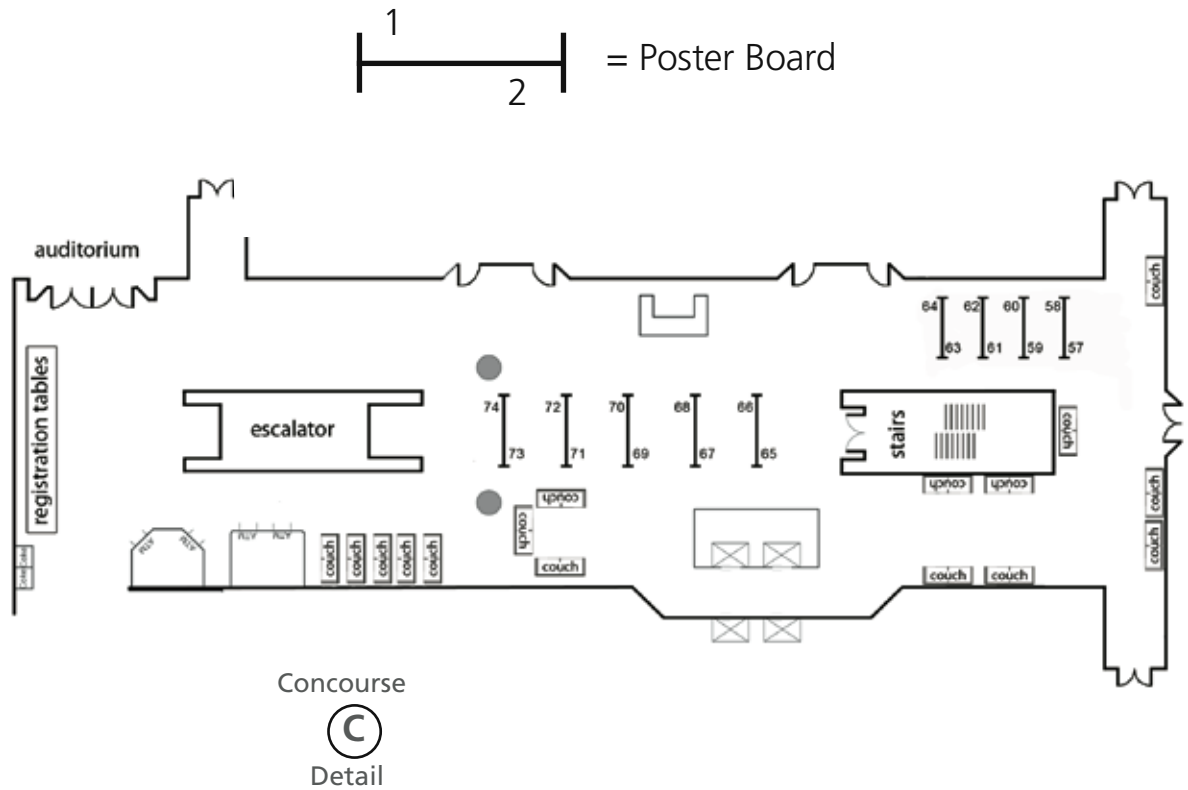
Floor Plan Of Conference Facilities

Lincoln Campus Center, First Floor



Floor Plan Of Conference Facilities

Lincoln Campus Center, First Floor



READING ROOM, 2nd floor

PANEL	PRESENTER	FIELD OF PRESENTATION	CAMPUS	TIME	ABSTRACT #
1	Alexandra Bonazoli	Political Science	UMass Amherst	10:40-11:25	215
1	Emma Welford	History	UMass Amherst	10:40-11:25	144
1	Kiersten Rooke	Political Science	UMass Amherst	10:40-11:25	224
2	Monet Crudup	English	Westfield State College	11:35-12:20	108
2	Michael Pinheiro	Music	Holyoke C.C.	11:35-12:20	202
2	Ryoko Kokuba	Music	Bristol C.C.	11:35-12:20	201
3	Alyson Richards	English	UMass Amherst	1:20-2:05	118
4	Andrew DeFeo	Japanese	UMass Amherst	2:15-3:00	171
4	Daniel Hall	Japanese	UMass Amherst	2:15-3:00	173
4	Rachel Goggin	Japanese	UMass Amherst	2:15-3:00	172
5	Shao-Kang Shan	Japanese	UMass Amherst	3:10-3:55	175
5	Michaela Myers	Japanese	UMass Amherst	3:10-3:55	174
5	Eric Simmons	Japanese	UMass Amherst	3:10-3:55	176
5	Jing Xu	Japanese	UMass Amherst	3:10-3:55	177

ROOM 162

PANEL	PRESENTER	FIELD OF PRESENTATION	CAMPUS	TIME	ABSTRACT #
1	Jennifer Dulong	Literature	Salem State College	10:40-11:25	185
1	Matthew Litchfield	English Literature	UMass Dartmouth	10:40-11:25	126
1	Brandon Wieber	English	Salem State College	10:40-11:25	119
2	Shielding Cournoyer	Literature	Westfield State College	11:35-12:20	184
2	Shannon Cocci	English Literature	UMass Dartmouth	11:35-12:20	122
2	Ana-Maria Bell	English Literature	UMass Dartmouth	11:35-12:20	120
3	Madison Dennis	English	Framingham State College	1:20-2:05	110
3	Molly Coyle	English Literature	Westfield State College	1:20-2:05	123
3	Megan Crotty	English	UMass Boston	1:20-2:05	107
4	Michael Bober	Radio-Television-Film	Fitchburg State College	2:15-3:00	243
4	Stephanie McPherson	Journalism	UMass Amherst	2:15-3:00	178
4	Thomas Paiva	Art	Bristol C.C.	2:15-3:00	33
5	Hannah Gunnell	English Literature	Worcester State College	3:10-3:55	125
5	Katelyn Christopher	English Literature	Framingham State College	3:10-3:55	121
5	Kelly Broderick	English	UMass Amherst	3:10-3:55	105
6	Elizabeth Garlo	Public Health	UMass Lowell	4:05-4:50	235
6	Cory Zelas	Nursing	UMass Amherst	4:05-4:50	205
6	Shannon Barry	Nursing	UMass Amherst	4:05-4:50	203

ROOM 163

PANEL	PRESENTER	FIELD OF PRESENTATION	CAMPUS	TIME	ABSTRACT #
1	Joshua Botvin	Radio-Television-Film	Bristol C.C.	10:40-11:25	244
1	Kaitlin Calderara	Communication	Westfield State College	10:40-11:25	50
1	Kristen Mientka	Radio-Television-Film	Westfield State College	10:40-11:25	246
2	Jillian Aberdale	Political Science	UMass Amherst	11:35-12:20	214
2	Caroline Koch	Political Science	UMass Amherst	11:35-12:20	221
2	Russell Hall	Political Science	UMass Lowell	11:35-12:20	219
3	Caleb Stone	Sociology	Berkshire C.C.	1:20-2:05	254
3	Erin Judge	History	Westfield State College	1:20-2:05	139
3	Jorge Morales-Lopez	Political Science	UMass Lowell	1:20-2:05	223
4	Agnes Stasiewicz	Psychology	Framingham State College	2:15-3:00	234
4	Bronwyn McNulty	History	UMass Boston	2:15-3:00	140
4	Alden Dalia	Radio-Television-Film	Fitchburg State College	2:15-3:00	245
5	J. Alexandria McLaren	Interdisciplinary Studies/BDIC	Quinsigamond C.C.	3:10-3:55	162
5	Ana Dechtiar	Interdisciplinary Studies/BDIC	UMass Amherst	3:10-3:55	152
5	Benjamin Owusu-Ansah	Education	Quinsigamond C.C.	3:10-3:55	98
6	Alison Eccleston	Psychology	UMass Amherst	4:05-4:50	227
6	Ana Carolina Gomez-Marchena	Political Science	UMass Boston	4:05-4:50	218
6	Levi Adelman	Psychology	UMass Amherst	4:05-4:50	225

ROOM 165

PANEL	PRESENTER	FIELD OF PRESENTATION	CAMPUS	TIME	ABSTRACT #
1	Michael Demo	Philosophy	UMass Amherst	10:40-11:25	208
1	Marissa McCabe	Interdisciplinary Studies/BDIC	Bunker Hill C.C.	10:40-11:25	161
1	Michael Murphy	Philosophy	Worcester State College	10:40-11:25	211
2	Nicholas Morrison	Psychology	UMass Amherst	11:35-12:20	231
2	Liane Ledger	Psychology	Westfield State College	11:35-12:20	230
2	Catherine Lehtinen	Interdisciplinary Studies/BDIC	UMass Amherst	11:35-12:20	160
3	Corinne Glennie	Education	Westfield State College	1:20-2:05	97
3	Marta Escriu-Sune	Education	UMass Boston	1:20-2:05	95
3	Thomas Tedone	Economics	Westfield State College	1:20-2:05	94
4	Violeta Haralampieva	Anthropology	UMass Boston	2:15-3:00	26
4	Alexandra Sprague	Anthropology	UMass Amherst	2:15-3:00	32
4	Kerstin Egenhofer	Anthropology	UMass Amherst	2:15-3:00	25
5	Azeen Khanmalek	Political Science	UMass Amherst	3:10-3:55	220
5	Chris Russell	History	UMass Amherst	3:10-3:55	142
5	Natasha Ludwig	Political Science	Westfield State College	3:10-3:55	222
6	Ryan Shanley	History	Westfield State College	4:05-4:50	143
6	Jeromie Whalen	History	UMass Amherst	4:05-4:50	145
6	Joseph Willis	History	Westfield State College	4:05-4:50	146

ROOM 168

PANEL	PRESENTER	FIELD OF PRESENTATION	CAMPUS	TIME	ABSTRACT #
1	Elizabeth Brenton	English	Salem State College	10:40-11:25	104
1	Brian Wilcox	English Literature	Westfield State College	10:40-11:25	128
1	Trina Johnson	English	UMass Boston	10:40-11:25	114
2	Ann Kimball	Mathematics & Statistics	UMass Dartmouth	11:35-12:20	199
2	Zachary Grant	Mathematics & Statistics	UMass Dartmouth	11:35-12:20	197
2	Charles Poole	Mathematics & Statistics	UMass Dartmouth	11:35-12:20	200
3	Sandra Kwawu	English	Westfield State College	1:20-2:05	115
3	Vanessa Gentleman	Psychology	Salem State College	1:20-2:05	228
3	Lisa Hermann	Psychology	Westfield State College	1:20-2:05	229
4	Matthew Neville	Psychology	UMass Boston	2:15-3:00	232
4	Christina Sanon	Psychology	Bunker Hill C.C.	2:15-3:00	233
4	Dan Meegan	Social Thought & Political Economy	Cape Cod C.C.	2:15-3:00	248
5	Brennan Burns	Electrical Engineering	UMass Amherst	3:10-3:55	100
5	Armand Chery, Jr.	Electrical Engineering	UMass Lowell	3:10-3:55	101
5	Stephan Adams	Electrical Engineering	UMass Amherst	3:10-3:55	99
6	Tawny Virgilio	Environmental Studies	Westfield State College	4:05-4:50	131
6	Maureen Carroll	Geography	Worcester State College	4:05-4:50	137
6	Alyson Pitts	Environmental Studies	UMass Boston	4:05-4:50	129

Room 170

PANEL	PRESENTER	FIELD OF PRESENTATION	CAMPUS	TIME	ABSTRACT #
1	Bronwen Evans	English	UMass Boston	10:40-11:25	111
1	Caitlin Farmer	English	Westfield State College	10:40-11:25	112
1	Tracy Finn	English Literature	UMass Lowell	10:40-11:25	124
2	Matthew Costa	Political Science	UMass Dartmouth	11:35-12:20	216
2	Lauren Burch	American Indian Studies	Westfield State College	11:35-12:20	5
2	Rachel Lareau	American Indian Studies	Westfield State College	11:35-12:20	10
3	Kristina Secinaro	Nutrition & Food Science	UMass Amherst	1:20-2:05	207
3	Jennifer Rivero	Kinesiology	UMass Amherst	1:20-2:05	179
3	Charlotte Jones	Nutrition & Food Science	Cape Cod C.C.	1:20-2:05	206
4	Donald Steele	Criminology	UMass Lowell	2:15-3:00	88
4	Kendra Nielsen	History	UMass Amherst	2:15-3:00	141
4	Sam Kirsch	Philosophy	Worcester State College	2:15-3:00	210
5	Caitlin Webb	Public Health	Westfield State College	3:10-3:55	242
5	Adanma Osakwe	Public Health	UMass Boston	3:10-3:55	239
5	Allison Geissert	Nursing	UMass Lowell	3:10-3:55	204
6	Jared Tobias	Forestry	Westfield State College	4:05-4:50	136
6	Jacquelyn Vincent	Environmental Studies	Westfield State College	4:05-4:50	130
6	Mac Cloyes	Forestry	UMass Amherst	4:05-4:50	135

ROOM 174

PANEL	PRESENTER	FIELD OF PRESENTATION	CAMPUS	TIME	ABSTRACT #
1	Nathan Anecone	Economics	Middlesex C.C.	10:40-11:25	90
1	William Bett	Economics	UMass Boston	10:40-11:25	91
1	Derek Truong	Finance	UMass Boston	10:40-11:25	134
2	Paola Ramirez	Advertising	UMass Boston	11:35-12:20	3
2	Meagan Mulroy	Management	Westfield State College	11:35-12:20	190
2	Sarah Ritchie	Marketing	Salem State College	11:35-12:20	195
3	Olivia Hayes	Accounting	UMass Boston	1:20-2:05	1
3	Patrick Mayhew	Accounting	UMass Dartmouth	1:20-2:05	2
3	Joshua McDougall	Decision Science	Northern Essex C.C.	1:20-2:05	89
4	Brendan Lynch	Economics	North Shore C.C.	2:15-3:00	93
4	Laura Fay	Management	UMass Boston	2:15-3:00	188
4	Santi Dewa Ayu	Economics	UMass Boston	2:15-3:00	92
5	Michael Powell	Management	UMass Boston	3:10-3:55	191
5	David Shay	Finance	UMass Boston	3:10-3:55	133
5	David Klisiewicz	Finance	UMass Lowell	3:10-3:55	132
6	Daniel Triano	Management	UMass Boston	4:05-4:50	194
6	Adam Thomas	Management	UMass Boston	4:05-4:50	193
6	Samuel Swartz	Management	UMass Boston	4:05-4:50	192

ROOM 175

PANEL	PRESENTER	FIELD OF PRESENTATION	CAMPUS	TIME	ABSTRACT #
1	Marvin Quinones	Sociology	UMass Dartmouth	10:40-11:25	252
1	Glenn Holmes	Management	Salem State College	10:40-11:25	189
1	John Stewart	Sociology	Cape Cod C.C.	10:40-11:25	253
2	Greici Mercedes	Chemistry	UMass Dartmouth	11:35-12:20	45
2	Ellinor Schmidt	Chemical Engineering	UMass Amherst	11:35-12:20	44
2	Joshua Grolman	Chemical Engineering	UMass Amherst	11:35-12:20	43
3	Emily Dennstedt	Biology	Worcester State College	1:20-2:05	39
3	Michel Moravia	Biology	Framingham State College	1:20-2:05	42
3	Victoria Carroll	Biology	UMass Amherst	1:20-2:05	38
4	Matt Huberman	Mathematics & Statistics	UMass Dartmouth	2:15-3:00	198
4	Pagna Eam	Mathematics & Statistics	Bristol C.C.	2:15-3:00	196
4	Omayra Del Valle	Computer Science	Framingham State College	2:15-3:00	87
5	Jessica O'Connor	Astronomy	UMass Amherst	3:10-3:55	37
5	Justin McKennon	Physics	UMass Dartmouth	3:10-3:55	213
5	Michael Boehm	Physics	UMass Boston	3:10-3:55	212
6	Kathryn Breen	Art History	UMass Amherst	4:05-4:50	34
6	Rachel Young	Art History	UMass Amherst	4:05-4:50	36
6	Daniel Healey	Art History	UMass Amherst	4:05-4:50	35

ROOM 801

PANEL	PRESENTER	FIELD OF PRESENTATION	CAMPUS	TIME	Abstract #
1	Amanda Zac	Latin American Studies	UMass Dartmouth	10:40-11:25	181
1	Samantha Balaban	Latin American Studies	UMass Amherst	10:40-11:25	180
1	Matthew Isaacs	Philosophy	UMass Amherst	10:40-11:25	209
2	Melodie Reynolds	Spanish	UMass Boston	11:35-12:20	257
2	Kayleigh O'Connor	Communication Disorders	UMass Amherst	11:35-12:20	62
3	Eric Frary	Education	Westfield State College	1:20-2:05	96
3	Nathena Sfeir	Social Thought & Political Economy	Cape Cod C.C.	1:20-2:05	249
4	Alan-Michael Chest	English	Westfield State College	2:15-3:00	106
4	David Bartsche	English	Westfield State College	2:15-3:00	102
5	Dana Evernden	Industrial Engineering	UMass Amherst	3:10-3:55	147
5	Meghan Krupka	Civil Engineering	UMass Amherst	3:10-3:55	46
6	Heather Fogarty	Animal Sciences	UMass Amherst	4:05-4:50	22
6	Kevin Lamontagne	Biology	UMass Amherst	4:05-4:50	41

ROOM 803

PANEL	PRESENTER	FIELD OF PRESENTATION	CAMPUS	TIME	Abstract #
1	Jennifer Egan	Political Science	UMass Boston	10:40-11:25	217
1	Brian Zucco	Legal Studies	UMass Amherst	10:40-11:25	183
1	Matthew Vayda	Legal Studies	UMass Amherst	10:40-11:25	182
2	Meaghan Brennan	English	Westfield State College	11:35-12:20	103
2	Tam Nguyen	Communication	Bunker Hill C.C.	11:35-12:20	55
2	Bethany Doane	Sociology	North Shore C.C.	11:35-12:20	250
3	Caitlin Quinn	Interdisciplinary Studies/BDIC	UMass Amherst	1:20-2:05	164
3	Sarah Wells	Interdisciplinary Studies/BDIC	UMass Amherst	1:20-2:05	167
3	Uriel Rodriguez	Interdisciplinary Studies/BDIC	UMass Amherst	1:20-2:05	166
3	Natalie Goodwin	Interdisciplinary Studies/BDIC	UMass Amherst	1:20-2:05	157
3	Monica Gill	Interdisciplinary Studies/BDIC	UMass Amherst	1:20-2:05	154
4	Nicole Dezan	Interdisciplinary Studies/BDIC	UMass Amherst	2:15-3:00	153
4	Matthew Babbitt	Interdisciplinary Studies/BDIC	UMass Amherst	2:15-3:00	148
4	Alon Rivel	Interdisciplinary Studies/BDIC	UMass Amherst	2:15-3:00	165
4	Jessica Potts	Interdisciplinary Studies/BDIC	UMass Amherst	2:15-3:00	163
5	Jennifer Iaconetti	Interdisciplinary Studies/BDIC	UMass Amherst	3:10-3:55	158
5	Haley Chapman	Interdisciplinary Studies/BDIC	UMass Amherst	3:10-3:55	150
5	Amanda Goncalves	Interdisciplinary Studies/BDIC	UMass Amherst	3:10-3:55	156
5	Lindsay Glaser	Interdisciplinary Studies/BDIC	UMass Amherst	3:10-3:55	155
5	Patricia Johnson	Interdisciplinary Studies/BDIC	UMass Amherst	3:10-3:55	159

ROOM 808

PANEL	PRESENTER	FIELD OF PRESENTATION	CAMPUS	TIME	Abstract #
1	Amy Wanamaker	Communication	UMass Amherst	10:40-11:25	60
1	Donica O'Malley	Communication	UMass Amherst	10:40-11:25	56
1	Gina D'Alessandro	English	UMass Amherst	10:40-11:25	109
2	Antonina Griecci-Woodsum	American Indian Studies	UMass Amherst	11:35-12:20	8
2	Arielle Matlin	American Indian Studies	UMass Amherst	11:35-12:20	13
2	Sophia Pastore	American Indian Studies	UMass Amherst	11:35-12:20	14
3	Sarah Pease	English	UMass Amherst	1:20-2:05	117
3	Megan Strathearn	American Indian Studies	UMass Amherst	1:20-2:05	18
3	Cory Telman	American Indian Studies	UMass Amherst	1:20-2:05	19
3	Jillian Furman	American Indian Studies	UMass Amherst	1:20-2:05	7
4	Harry Hudesman	American Indian Studies	UMass Amherst	2:15-3:00	9
4	James Wright	American Indian Studies	UMass Amherst	2:15-3:00	21
4	Lina Phou	American Indian Studies	UMass Amherst	2:15-3:00	15
5	Kathryn Liddell	American Indian Studies	UMass Amherst	3:10-3:55	12
5	Josalyn Williams	American Indian Studies	UMass Amherst	3:10-3:55	20
5	Brendan Lehan	American Indian Studies	UMass Amherst	3:10-3:55	11
6	Jennifer Reed	American Indian Studies	UMass Amherst	4:05-4:50	16
6	Emiliano Salazar	American Indian Studies	UMass Amherst	4:05-4:50	17
6	Nicole Fortier	American Indian Studies	UMass Amherst	4:05-4:50	6

ROOM 809

PANEL	PRESENTER	FIELD OF PRESENTATION	CAMPUS	TIME	Abstract #
1	Lindsey Cushing	Women's Studies	UMass Amherst	10:40-11:25	258
1	Rima Patel	Public Health	UMass Amherst	10:40-11:25	240
1	Anna Iokheles	Biology	UMass Amherst	10:40-11:25	40
2	Andrea Broverman	Psychology	UMass Amherst	11:35-12:20	226
2	Caitlin Saia	Public Health	UMass Amherst	11:35-12:20	241
2	Kelly McGovern	Public Health	UMass Amherst	11:35-12:20	237
3	Erin Carden	Social Thought & Political Economy	UMass Amherst	1:20-2:05	247
3	Sarah Bello	History	UMass Amherst	1:20-2:05	138
3	Meghan Lemay	African American Studies	UMass Amherst	1:20-2:05	4
4	Ruth Muellejans	Sociology	UMass Amherst	2:15-3:00	251
4	Danielle Centi	Interdisciplinary Studies/BDIC	UMass Amherst	2:15-3:00	149
4	Elizabeth Lepore	Public Health	UMass Amherst	2:15-3:00	236
5	Josh Swiecicki	Sociology	UMass Amherst	3:10-3:55	256
5	Sherezad Contractor	Communication	UMass Amherst	3:10-3:55	51
5	Nicholas Milano	Public Health	UMass Amherst	3:10-3:55	238

ROOM 811

PANEL	PRESENTER	FIELD OF PRESENTATION	CAMPUS	TIME	Abstract #
1	Stephanie Isaacs	Literature	UMass Amherst	10:40-11:25	187
1	Kathryn Hakala	English	UMass Amherst	10:40-11:25	113
1	Kirsten Swenson	Sociology	UMass Amherst	10:40-11:25	255
2	Devin Grass	Literature	UMass Amherst	11:35-12:20	186
2	Samantha Clarke	Interdisciplinary Studies/BDIC	UMass Amherst	11:35-12:20	151
2	Matthew McNulty	English	UMass Amherst	11:35-12:20	116
3	Max Slygh	Communication	UMass Amherst	1:20-2:05	59
3	Stacey Perlman	English Literature	UMass Amherst	1:20-2:05	127
4	Edward Bitter	Communication	UMass Amherst	2:15-3:00	48
4	Adam Zeller	Communication	UMass Amherst	2:15-3:00	61
4	Garrett Hanlon	Communication	UMass Amherst	2:15-3:00	53
5	Hallie Acton	Communication	UMass Amherst	3:10-3:55	47
5	Mackenzie Reif	Communication	UMass Amherst	3:10-3:55	58
5	Mindi Harris	Communication	UMass Amherst	3:10-3:55	54
6	Laura Bunzick	Communication	UMass Amherst	4:05-4:50	49
6	Kelly Quinn	Communication	UMass Amherst	4:05-4:50	57
6	Anna Frye	Communication	UMass Amherst	4:05-4:50	52

ROOM 911

PANEL	PRESENTER	FIELD OF PRESENTATION	CAMPUS	TIME	Abstract #
1	Jacqueline Berman	Anthropology	UMass Amherst	10:40-11:25	23
1	J. Michael Munger	Anthropology	UMass Amherst	10:40-11:25	30
1	Elise Lehotsky	Anthropology	UMass Amherst	10:40-11:25	27
2	Lubna Mostafa	Anthropology	UMass Amherst	11:35-12:20	29
2	Kevin Bolduc	Anthropology	UMass Amherst	11:35-12:20	24
2	Kevin Lombardi	Anthropology	UMass Amherst	11:35-12:20	28
2	Stephanie Pallone	Anthropology	UMass Amherst	11:35-12:20	31
3	Marisa Pacifico	Community or Public Service	UMass Amherst	1:20-2:05	77
3	Christina Lagerstedt	Community or Public Service	UMass Amherst	1:20-2:05	74
3	Danielle Arsenault	Community or Public Service	UMass Amherst	1:20-2:05	65
4	Emily Conant	Community or Public Service	UMass Amherst	2:15-3:00	69
4	Ryan Roy	Community or Public Service	UMass Amherst	2:15-3:00	82
5	Michael Brill	International Studies	Westfield State College	3:10-3:55	168
5	Matthew Fricker	International Studies	UMass Dartmouth	3:10-3:55	170
5	Mimi Chan	International Studies	UMass Boston	3:10-3:55	169

ROOM 917

PANEL	PRESENTER	FIELD OF PRESENTATION	CAMPUS	TIME	Abstract #
1	Melissa Clark	Community or Public Service	UMass Amherst	10:40-11:25	68
1	Christina Pezzello	Community or Public Service	UMass Amherst	10:40-11:25	79
1	Christina DePiano	Community or Public Service	UMass Amherst	10:40-11:25	71
1	Kelsey Robare	Community or Public Service	UMass Amherst	10:40-11:25	81
2	Katherine Person	Community or Public Service	UMass Amherst	11:35-12:20	78
2	Jaimie Reed	Community or Public Service	UMass Amherst	11:35-12:20	80
2	Roxanne Archibald	Community or Public Service	UMass Amherst	11:35-12:20	64
3	Nicole Tishler	Community or Public Service	UMass Amherst	1:20-2:05	84
3	Melissa Urban	Community or Public Service	UMass Amherst	1:20-2:05	85
3	Emily Bloch	Community or Public Service	UMass Amherst	1:20-2:05	66
4	Amanda Brunelle	Community or Public Service	UMass Amherst	2:15-3:00	67
4	Kelleyanne Curley	Community or Public Service	UMass Amherst	2:15-3:00	70
5	Kelsey Nagel	Community or Public Service	UMass Amherst	3:10-3:55	76
5	Heather McCormack	Community or Public Service	UMass Amherst	3:10-3:55	75
5	Olivier Van Houtte	Community or Public Service	UMass Amherst	3:10-3:55	86
6	Megan Sutor-Segoshi	Community or Public Service	UMass Amherst	4:05-4:50	83
6	Gina Kwong	Community or Public Service	UMass Amherst	4:05-4:50	73
6	Alexandra Adler	Community or Public Service	UMass Amherst	4:05-4:50	63
6	Daniel Goldberg	Community or Public Service	UMass Amherst	4:05-4:50	72

POSTER SESSION I, 10:45 AM - 11:45 AM - Auditorium (Boards 1 to 36), Room 101 (Boards 37 to 56) and Concourse (Boards 57 to 74)

PANEL	PRESENTER	FIELD OF PRESENTATION	CAMPUS	TIME	Abstract #
1	Shannon Egna	Psychology	UMass Amherst	1:20-2:20	492
3	Jessica Tavernini	Psychology	UMass Amherst	1:20-2:20	525
4	Sophie Higgins	Psychology	UMass Boston	1:20-2:20	496
5	Danielle Dean	Psychology	UMass Amherst	1:20-2:20	488
6	Megan Linehan	Psychology	Framingham State College	1:20-2:20	504
7	Kristie Fierro	Psychology	UMass Amherst	1:20-2:20	493
8	Kristen Janko	Psychology	UMass Amherst	1:20-2:20	499
9	Christy Rogerson	Social Work	Bristol C.C.	1:20-2:20	543
10	Noah Luszcz	Social Work	Cape Cod C.C.	1:20-2:20	542
11	Zanele Denaro	Nursing	UMass Lowell	1:20-2:20	439
12	Valerie Couto	Nursing	UMass Dartmouth	1:20-2:20	438
13	Sarah Shepard	Nursing	UMass Amherst	1:20-2:20	448
14	Sarah Chipps	Nursing	UMass Amherst	1:20-2:20	436
15	Ryan Gianatassio	Chemistry	UMass Boston	1:20-2:20	325
16	Erin Walsh	Public Health	Westfield State College	1:20-2:20	539
17	Kaitlyn Teser	Public Health	Westfield State College	1:20-2:20	537
18	Stephanie Travers	Public Health	Framingham State College	1:20-2:20	538
20	Magdalene Horton	Public Health	UMass Boston	1:20-2:20	534
21	Abby Genovese	Public Health	Westfield State College	1:20-2:20	533
22	Lisa Casey	Public Health	Westfield State College	1:20-2:20	532
23	Tim Austin	Community or Public Service	Bunker Hill C.C.	1:20-2:20	352
24	Jessica Previlon	Community or Public Service	Bunker Hill C.C.	1:20-2:20	355
25	Dawn Rigby	Public Health	Framingham State College	1:20-2:20	536
26	Dani Steilen	Kinesiology	UMass Amherst	1:20-2:20	408
27	Sarah Casey	Kinesiology	UMass Amherst	1:20-2:20	401
28	Oleg Kamenetsky	Kinesiology	UMass Amherst	1:20-2:20	404
29	Vanessa Laine	Public Health	UMass Amherst	1:20-2:20	535
30	Megan Donovan	Kinesiology	UMass Amherst	1:20-2:20	402
31	Amanda Libertine	Kinesiology	UMass Amherst	1:20-2:20	405
32	Laura Thistle	Kinesiology	UMass Amherst	1:20-2:20	409
33	Jenifer Prince-Moughan	Education	Northern Essex C.C.	1:20-2:20	369
34	Emily Seery	Kinesiology	UMass Amherst	1:20-2:20	407
35	Jennifer Harkey	Kinesiology	UMass Amherst	1:20-2:20	403
36	Jocelyn Lilly	Community or Public Service	UMass Lowell	1:20-2:20	354
37	Ervin Pejo	Biochemistry	UMass Amherst	1:20-2:20	277
38	Michael Buckner	Biochemistry	UMass Amherst	1:20-2:20	269
39	Caroline Duffy	Biochemistry	UMass Amherst	1:20-2:20	270

POSTER SESSION I, 10:45 AM - 11:45 AM - Auditorium (Boards 1 to 36), Room 101 (Boards 37 to 56) and Concourse (Boards 57 to 74)

PANEL	PRESENTER	FIELD OF PRESENTATION	CAMPUS	TIME	Abstract #
40	Lara Kabbani	Bioengineering	Bunker Hill C.C.	1:20-2:20	280
41	Justin Dondero	Bioengineering	Bunker Hill C.C.	1:20-2:20	279
42	Kwadwo Ansong	Biology	UMass Boston	1:20-2:20	281
43	Olivier Van Houtte	Biology	UMass Amherst	1:20-2:20	312
44	Ardalan Sayan	Biology	UMass Amherst	1:20-2:20	305
45	Baovy Tran	Biology	UMass Boston	1:20-2:20	310
46	Gimena Suarez	Biology	Fitchburg State College	1:20-2:20	308
47	Kaitlyn Miklinevich	Biochemistry	UMass Amherst	1:20-2:20	276
48	Lynn Liu	Biochemistry	UMass Amherst	1:20-2:20	274
49	Tatiana Achildiev	Biochemistry	UMass Boston	1:20-2:20	268
50	Katharine Masterjohn	Biology	Worcester State College	1:20-2:20	297
51	Allison McNulty	Biology	Framingham State College	1:20-2:20	299
52	Paulina Kocjan	Biology	UMass Boston	1:20-2:20	294
53	Denise Butler	Biology	UMass Boston	1:20-2:20	285
54	Gina Kwong	Plant, Soil, and Insect Sciences	UMass Amherst	1:20-2:20	472
55	Victoria Hall	Biology	UMass Amherst	1:20-2:20	291
56	Erik Holzwanger	Biology	UMass Boston	1:20-2:20	292
57	Henry Rogalin	Chemistry	UMass Boston	1:20-2:20	338
58	Traci Brun	Chemistry	Framingham State College	1:20-2:20	319
59	Thao Do	Chemistry	UMass Boston	1:20-2:20	321
60	Ryan Knihtila	Chemistry	Worcester State College	1:20-2:20	331
61	Patricia McNamara	Chemistry	Worcester State College	1:20-2:20	334
62	Matthew Incontri	Studio Art	Northern Essex C.C.	1:20-2:20	550
63	Margaret Nguyen	Chemistry	Worcester State College	1:20-2:20	337
64	Alicia Boucher	Dance	Westfield State College	1:20-2:20	361
65	Jason Welsh	Chemistry	Worcester State College	1:20-2:20	344
66	Alexa Meehan	Chemistry	UMass Boston	1:20-2:20	335
67	Alena Carlson	Chemistry	UMass Boston	1:20-2:20	320
68	Bradford Spencer	Chemistry	Worcester State College	1:20-2:20	340
69	Ainsley McCall	Chemistry	Bunker Hill C.C.	1:20-2:20	333
70	Daniel Walsh	Physics	UMass Dartmouth	1:20-2:20	470
71	Colleen Allen	Physics	UMass Dartmouth	1:20-2:20	467
72	Jason Lemrise	Physics	UMass Dartmouth	1:20-2:20	469
73	Christopher Agostini	Physics	Bunker Hill C.C.	1:20-2:20	466
74	Daniel Kelleher	Physics	UMass Dartmouth	1:20-2:20	468

**POSTER SESSION II, 1:20 PM - 2:20 PM - Auditorium (Boards 1 to 36),
Room 101 (Boards 37 to 56) and Concourse (Boards 57 to 74)**

PANEL	PRESENTER	FIELD OF PRESENTATION	CAMPUS	TIME	Abstract #
1	Shannon Egna	Psychology	UMass Amherst	1:20-2:20	492
3	Jessica Tavernini	Psychology	UMass Amherst	1:20-2:20	525
4	Sophie Higgins	Psychology	UMass Boston	1:20-2:20	496
5	Danielle Dean	Psychology	UMass Amherst	1:20-2:20	488
6	Megan Linehan	Psychology	Framingham State College	1:20-2:20	504
7	Kristie Fierro	Psychology	UMass Amherst	1:20-2:20	493
8	Kristen Janko	Psychology	UMass Amherst	1:20-2:20	499
9	Christy Rogerson	Social Work	Bristol C.C.	1:20-2:20	543
10	Noah Luszcz	Social Work	Cape Cod C.C.	1:20-2:20	542
11	Zanele Denaro	Nursing	UMass Lowell	1:20-2:20	439
12	Valerie Couto	Nursing	UMass Dartmouth	1:20-2:20	438
13	Sarah Shepard	Nursing	UMass Amherst	1:20-2:20	448
14	Sarah Chipps	Nursing	UMass Amherst	1:20-2:20	436
15	Ryan Gianatassio	Chemistry	UMass Boston	1:20-2:20	325
16	Erin Walsh	Public Health	Westfield State College	1:20-2:20	539
17	Kaitlyn Teser	Public Health	Westfield State College	1:20-2:20	537
18	Stephanie Travers	Public Health	Framingham State College	1:20-2:20	538
20	Magdalene Horton	Public Health	UMass Boston	1:20-2:20	534
21	Abby Genovese	Public Health	Westfield State College	1:20-2:20	533
22	Lisa Casey	Public Health	Westfield State College	1:20-2:20	532
23	Tim Austin	Community or Public Service	Bunker Hill C.C.	1:20-2:20	352
24	Jessica Previlon	Community or Public Service	Bunker Hill C.C.	1:20-2:20	355
25	Dawn Rigby	Public Health	Framingham State College	1:20-2:20	536
26	Dani Steilen	Kinesiology	UMass Amherst	1:20-2:20	408
27	Sarah Casey	Kinesiology	UMass Amherst	1:20-2:20	401
28	Oleg Kamenetsky	Kinesiology	UMass Amherst	1:20-2:20	404
29	Vanessa Laine	Public Health	UMass Amherst	1:20-2:20	535
30	Megan Donovan	Kinesiology	UMass Amherst	1:20-2:20	402
31	Amanda Libertine	Kinesiology	UMass Amherst	1:20-2:20	405
32	Laura Thistle	Kinesiology	UMass Amherst	1:20-2:20	409
33	Jenifer Prince-Moughan	Education	Northern Essex C.C.	1:20-2:20	369
34	Emily Seery	Kinesiology	UMass Amherst	1:20-2:20	407
35	Jennifer Harkey	Kinesiology	UMass Amherst	1:20-2:20	403
36	Jocelyn Lilly	Community or Public Service	UMass Lowell	1:20-2:20	354
37	Ervin Pejo	Biochemistry	UMass Amherst	1:20-2:20	277
38	Michael Buckner	Biochemistry	UMass Amherst	1:20-2:20	269
39	Caroline Duffy	Biochemistry	UMass Amherst	1:20-2:20	270

**POSTER SESSION II, 1:20 PM - 2:20 PM - Auditorium (Boards 1 to 36),
Room 101 (Boards 37 to 56) and Concourse (Boards 57 to 74)**

PANEL	PRESENTER	FIELD OF PRESENTATION	CAMPUS	TIME	Abstract #
40	Lara Kabbani	Bioengineering	Bunker Hill C.C.	1:20-2:20	280
41	Justin Dondero	Bioengineering	Bunker Hill C.C.	1:20-2:20	279
42	Kwadwo Ansong	Biology	UMass Boston	1:20-2:20	281
43	Olivier Van Houtte	Biology	UMass Amherst	1:20-2:20	312
44	Ardalan Sayan	Biology	UMass Amherst	1:20-2:20	305
45	Baovy Tran	Biology	UMass Boston	1:20-2:20	310
46	Gimena Suarez	Biology	Fitchburg State College	1:20-2:20	308
47	Kaitlyn Miklinevich	Biochemistry	UMass Amherst	1:20-2:20	276
48	Lynn Liu	Biochemistry	UMass Amherst	1:20-2:20	274
49	Tatiana Achildiev	Biochemistry	UMass Boston	1:20-2:20	268
50	Katharine Masterjohn	Biology	Worcester State College	1:20-2:20	297
51	Allison McNulty	Biology	Framingham State College	1:20-2:20	299
52	Paulina Kocjan	Biology	UMass Boston	1:20-2:20	294
53	Denise Butler	Biology	UMass Boston	1:20-2:20	285
54	Gina Kwong	Plant, Soil, and Insect Sciences	UMass Amherst	1:20-2:20	472
55	Victoria Hall	Biology	UMass Amherst	1:20-2:20	291
56	Erik Holzwanger	Biology	UMass Boston	1:20-2:20	292
57	Henry Rogalin	Chemistry	UMass Boston	1:20-2:20	338
58	Traci Brun	Chemistry	Framingham State College	1:20-2:20	319
59	Thao Do	Chemistry	UMass Boston	1:20-2:20	321
60	Ryan Knihtila	Chemistry	Worcester State College	1:20-2:20	331
61	Patricia McNamara	Chemistry	Worcester State College	1:20-2:20	334
62	Matthew Incontri	Studio Art	Northern Essex C.C.	1:20-2:20	550
63	Margaret Nguyen	Chemistry	Worcester State College	1:20-2:20	337
64	Alicia Boucher	Dance	Westfield State College	1:20-2:20	361
65	Jason Welsh	Chemistry	Worcester State College	1:20-2:20	344
66	Alexa Meehan	Chemistry	UMass Boston	1:20-2:20	335
67	Alena Carlson	Chemistry	UMass Boston	1:20-2:20	320
68	Bradford Spencer	Chemistry	Worcester State College	1:20-2:20	340
69	Ainsley McCall	Chemistry	Bunker Hill C.C.	1:20-2:20	333
70	Daniel Walsh	Physics	UMass Dartmouth	1:20-2:20	470
71	Colleen Allen	Physics	UMass Dartmouth	1:20-2:20	467
72	Jason Lemrise	Physics	UMass Dartmouth	1:20-2:20	469
73	Christopher Agostini	Physics	Bunker Hill C.C.	1:20-2:20	466
74	Daniel Kelleher	Physics	UMass Dartmouth	1:20-2:20	468

**POSTER SESSION III, 2:35 PM - 3:35 PM - Auditorium (Boards 1 to 36),
Room 101 (Boards 37 to 56) and Concourse (Boards 57 to 74)**

PANEL	PRESENTER	FIELD OF PRESENTATION	CAMPUS	TIME	Abstract #
1	Erica Kaplan	Environmental Studies	UMass Amherst	2:35-3:35	384
2	Matthew Heron	Environmental Studies	Bunker Hill C.C.	2:35-3:35	383
3	Alyssa Benson	Biology	UMass Amherst	2:35-3:35	284
4	Kenneth Vasques	Biology	UMass Amherst	2:35-3:35	313
5	Abraham Khorasani	Biology	UMass Amherst	2:35-3:35	293
6	Dominick Matos	Biology	UMass Amherst	2:35-3:35	298
7	Rachael Stevenson	Biology	UMass Amherst	2:35-3:35	306
8	Jessica Faraci	Biology	UMass Amherst	2:35-3:35	288
9	Lauren Garant	Environmental Studies	UMass Amherst	2:35-3:35	382
10	Michael Quercio	Environmental Studies	UMass Amherst	2:35-3:35	387
11	Melissa Masse	Environmental Studies	Bristol C.C.	2:35-3:35	385
12	Joshua Pitt	Environmental Studies	Cape Cod C.C.	2:35-3:35	386
13	Brittany Horgan	Plant, Soil, and Insect Sciences	UMass Amherst	2:35-3:35	471
14	Justine Cupero	Environmental Studies	Westfield State College	2:35-3:35	381
15	Rose Weiss	Interdisciplinary Studies/BDIC	UMass Amherst	2:35-3:35	398
16	Joshua Coomey	Environmental Studies	UMass Amherst	2:35-3:35	380
17	Ankit Shah	Microbiology	UMass Dartmouth	2:35-3:35	430
18	Conner Thorpe	Microbiology	UMass Lowell	2:35-3:35	431
19	Jesse Robillard	Microbiology	Mass College of Liberal Arts	2:35-3:35	429
20	Felicia Dupras	Microbiology	Framingham State College	2:35-3:35	426
21	Maya Khasin	Microbiology	UMass Amherst	2:35-3:35	428
22	Stephen Godin	Microbiology	UMass Amherst	2:35-3:35	427
23	Dmitry Tokar	Microbiology	UMass Amherst	2:35-3:35	432
24	Russell Diatalevi	Mechanical Engineering	UMass Amherst	2:35-3:35	420
25	Joseph Fox, Jr.	Mechanical Engineering	UMass Amherst	2:35-3:35	421
26	James O'Connor	Mechanical Engineering	Quinsigamond C.C.	2:35-3:35	423
27	Stephen McKinley	Mechanical Engineering	UMass Amherst	2:35-3:35	422
28	Airton da Silva, Jr	Mechanical Engineering	UMass Amherst	2:35-3:35	419
29	Nick Stangas	Mechanical Engineering	UMass Amherst	2:35-3:35	425
30	Adelaide Hopkins	Mathematics & Statistics	UMass Dartmouth	2:35-3:35	418
31	Maximilian Choly	Computer Science	UMass Boston	2:35-3:35	358
32	Mario Barrenechea	Computer Science	UMass Amherst	2:35-3:35	357
33	Gregory Scantlebury	Mechanical Engineering	UMass Amherst	2:35-3:35	424
34	Joshua Munro	Animal Sciences	UMass Amherst	2:35-3:35	262
35	Joseph Malatos	Animal Sciences	UMass Amherst	2:35-3:35	261
36	Sarah Snow	Animal Sciences	Westfield State College	2:35-3:35	263

**POSTER SESSION III, 2:35 PM - 3:35 PM - Auditorium (Boards 1 to 36),
Room 101 (Boards 37 to 56) and Concourse (Boards 57 to 74)**

PANEL	PRESENTER	FIELD OF PRESENTATION	CAMPUS	TIME	Abstract #
37	Jamie Connelly	Psychology	UMass Lowell	2:35-3:35	487
38	Theresa Iannetta	Psychology	Framingham State College	2:35-3:35	497
39	Maksim Sigal	Psychology	UMass Amherst	2:35-3:35	522
40	Elana Knight	Psychology	UMass Amherst	2:35-3:35	500
41	Colleen Poulin	Psychology	Framingham State College	2:35-3:35	516
42	Molly Korobkin	Psychology	UMass Lowell	2:35-3:35	502
43	Dimitrios Booras	Psychology	UMass Lowell	2:35-3:35	482
44	Emily Wharton	Psychology	Framingham State College	2:35-3:35	530
45	Stephanie Kunst	Psychology	Framingham State College	2:35-3:35	502
46	Amar Shere	Psychology	UMass Amherst	2:35-3:35	519
47	Emma Morelli	Psychology	Framingham State College	2:35-3:35	513
48	Katelin Egan	Psychology	Framingham State College	2:35-3:35	491
49	Matthew Abbott	Psychology	UMass Amherst	2:35-3:35	477
50	Peter Garas	Psychology	UMass Amherst	2:35-3:35	494
51	Kelly Donohue	Psychology	UMass Amherst	2:35-3:35	490
52	Andrea Simoni	Psychology	UMass Amherst	2:35-3:35	523
53	Amanda Irving	Psychology	UMass Lowell	2:35-3:35	498
54	Corrie Miller	Psychology	Framingham State College	2:35-3:35	510
55	Ursula Boynton	Psychology	Framingham State College	2:35-3:35	483
56	Lauren McKay	Psychology	UMass Boston	2:35-3:35	508
57	Erika Prouty	Biology	Westfield State College	2:35-3:35	302
58	Nicole Eckart	Biology	UMass Amherst	2:35-3:35	287
59	Scott Lee	Biology	UMass Amherst	2:35-3:35	296
60	Rebecca Lamothe	Biology	UMass Amherst	2:35-3:35	295
61	April Lachance	Chemistry	UMass Boston	2:35-3:35	332
62	Keith Dusoe	Chemistry	Worcester State College	2:35-3:35	322
63	Nicole Hanna	Chemistry	Worcester State College	2:35-3:35	328
64	Ryan Fitzgerald	Chemistry	UMass Boston	2:35-3:35	324
65	Bibiana Quiasua	Biology	Bunker Hill CC.C.	2:35-3:35	303
66	La'Kesha Francis	Biology	Bunker Hill C.C.	2:35-3:35	289
67	Gina Trabucco	Biology	UMass Amherst	2:35-3:35	309
68	Christine Rega	Biology	UMass Amherst	2:35-3:35	304
69	Khanh Pham	Biology	UMass Amherst	2:35-3:35	301
70	Abby Duffy	Biology	UMass Boston	2:35-3:35	286
71	Lauren Mullin	Biology	UMass Boston	2:35-3:35	300
72	Nabil Benhayoun	Biology	UMass Amherst	2:35-3:35	283
73	Alissa Routhier	Molecular Biology	Worcester State College	2:35-3:35	434
74	Katarzyna Piotrowska	Molecular Biology	UMass Boston	2:35-3:35	433

**POSTER SESSION IV, 3:50 PM - 4:50 PM - Auditorium (Boards 1 to 36),
Room 101 (Boards 37 to 56) and Concourse (Boards 57 to 74)**

BOARD	PRESENTER	FIELD OF PRESENTATION	CAMPUS	TIME	Abstract #
1	Jennifer Kuehne	Communication	Cape Cod C.C.	3:50-4:50	347
2	Amanda Lefebvre	Communication	Framingham State College	3:50-4:50	348
3	Jeremy Schaub	Communication	Cape Cod C.C.	3:50-4:50	349
4	Candice Guy	Internship	Westfield State College	3:50-4:50	399
5	Danielle O'Shea	Physical Therapy	UMass Lowell	3:50-4:50	465
6	Michelle Cherney	English	Cape Cod C.C.	3:50-4:50	376
7	Cassandra Taylor	Literature	Bunker Hill C.C.	3:50-4:50	414
8	Kirstyn Costa	English Literature	Cape Cod C.C.	3:50-4:50	378
9	Christine Marino	Communication Disorders	UMass Amherst	3:50-4:50	351
10	Danielle Ducharme	Communication Disorders	UMass Amherst	3:50-4:50	350
11	Heather Mellish	Art	UMass Dartmouth	3:50-4:50	265
12	Tyrone Smith	Art	Bristol C.C.	3:50-4:50	266
13	Kristen Anderson	Art	Northern Essex C.C.	3:50-4:50	264
14	Jacqueline Lamontagne	Art History	UMass Dartmouth	3:50-4:50	267
15	Emma Haselton	History	Cape Cod C.C.	3:50-4:50	391
16	Rebecca L'Ecuyer	History	Framingham State College	3:50-4:50	392
17	Kelley Marino	History	Bunker Hill C.C.	3:50-4:50	393
18	Molly Colburn	History	Westfield State College	3:50-4:50	390
19	Donna Perezella	History	Bunker Hill C.C.	3:50-4:50	395
20	Christopher Meehan	History	Cape Cod C.C.	3:50-4:50	394
21	Vincent Capone	History	UMass Amherst	3:50-4:50	389
22	Sarah Finlayson	Social Thought & Political Economy	Cape Cod C.C.	3:50-4:50	541
23	Robert Vanasse	Political Science	UMass Amherst	3:50-4:50	475
24	Jeffrey Rothschild	Political Science	UMass Amherst	3:50-4:50	474
25	Audra Riding	Political Science	UMass Dartmouth	3:50-4:50	473
26	Fesehaye Zewdie	Political Science	Bunker Hill C.C.	3:50-4:50	476
27	Sang-Yoon Kim	Sociology	Bunker Hill C.C.	3:50-4:50	545
28	Elana Schwam	Sociology	UMass Amherst	3:50-4:50	548
29	Kit Chang	Social Thought & Political Economy	Bunker Hill C.C.	3:50-4:50	540
30	Jill Shanahan	Sociology	UMass Dartmouth	3:50-4:50	549
31	Kristen Redford	Sociology	UMass Amherst	3:50-4:50	547
32	Angela Kantner	Sociology	UMass Amherst	3:50-4:50	544
33	Molly Mayer	Sociology	Cape Cod C.C.	3:50-4:50	546
34	Vanessa Colomba	Psychology	UMass Lowell	3:50-4:50	486
35	Agnes Stasiewicz	Psychology	Framingham State College	3:50-4:50	524
36	Morgan Wedge	Psychology	Cape Cod C.C.	3:50-4:50	527
37	Hannah Zwetchkenbaum	Psychology	Framingham State College	3:50-4:50	531
38	Salua Oliveira	Psychology	Framingham State College	3:50-4:50	514

**POSTER SESSION IV, 3:50 PM - 4:50 PM - Auditorium (Boards 1 to 36),
Room 101 (Boards 37 to 56) and Concourse (Boards 57 to 74)**

BOARD	PRESENTER	FIELD OF PRESENTATION	CAMPUS	TIME	Abstract #
39	Felicia Abbuah	Psychology	Bunker Hill C.C.	3:50-4:50	478
40	Alex Weiner	Psychology	UMass Amherst	3:50-4:50	528
41	Jillian Benson	Psychology	UMass Lowell	3:50-4:50	480
42	Christina Shimek	Psychology	Fitchburg State College	3:50-4:50	521
43	Joel Margi	Psychology	UMass Lowell	3:50-4:50	507
44	Jialing Guo	Community or Public Service	Bunker Hill C.C.	3:50-4:50	353
45	Michaela Barrette	Psychology	UMass Amherst	3:50-4:50	479
46	Emily Richter	Psychology	Westfield State College	3:50-4:50	517
47	Amanda Persaud	Psychology	UMass Amherst	3:50-4:50	515
48	Kathleen Werner	Psychology	UMass Amherst	3:50-4:50	529
49	Leah Mitchell	Psychology	Framingham State College	3:50-4:50	511
50	Rachel Carroll	Psychology	Framingham State College	3:50-4:50	484
51	Tatiana Rugel	Psychology	UMass Amherst	3:50-4:50	518
52	Lauren Moran	Psychology	Framingham State College	3:50-4:50	512
53	Stephanie LaGrassa	Psychology	Framingham State College	3:50-4:50	503
54	John Michael Bell	English Literature	UMass Dartmouth	3:50-4:50	377
55	Lori Dikun	Psychology	UMass Amherst	3:50-4:50	489
56	Caitlin Sherman	Psychology	UMass Amherst	3:50-4:50	520
57	Meenal Datta	Chemical Engineering	UMass Amherst	3:50-4:50	315
59	Sarena Horava	Chemical Engineering	UMass Amherst	3:50-4:50	316
60	Alan Levin	Electrical Engineering	UMass Amherst	3:50-4:50	375
61	Julie Bissell	Electrical Engineering	UMass Lowell	3:50-4:50	373
62	Daniel Amirault	Computer Science	UMass Amherst	3:50-4:50	356
63	Oliver Kia	Electrical Engineering	Bunker Hill C.C.	3:50-4:50	374
64	Willems Leveille	Civil Engineering	UMass Dartmouth	3:50-4:50	346
65	Greici Mercedes	Chemistry	UMass Dartmouth	3:50-4:50	336
66	Andrew Smith	Chemistry	UMass Amherst	3:50-4:50	339
67	Stephen Glynn	Chemistry	Worcester State College	3:50-4:50	326
68	Kweku Acquah	Chemistry	Worcester State College	3:50-4:50	317
69	Geoffrey Austein-Miller	Chemistry	UMass Amherst	3:50-4:50	318
70	Bejan Hakimi	Chemistry	UMass Amherst	3:50-4:50	327
71	Chiedozie Uwandu	Biology	UMass Boston	3:50-4:50	311
72	Ada Dyrnishi	Chemistry	Worcester State College	3:50-4:50	323
73	Kevin Karanja	Chemistry	Worcester State College	3:50-4:50	329
74	Kenneth Kirangi	Chemistry	Worcester State College	3:50-4:50	330



Accounting

1 Room 174 1:20-2:05 Panel 3

Olivia Hayes

Benyamin Lichtenstein (Faculty Sponsor)

Department of Management, UMass Boston, Boston, MA, 02125

Derivative Instruments: REIT Investment Company Usage After the Implementation of FAS161

Many people believe that a major contributor to the current financial crisis was the increased use of exotic instruments known as derivatives. Derivative instruments are risk management tools used by companies to make quick profits or for hedging purposes. These investments are highly risky and there is no way to be sure that a profit will result. Companies choose to use derivatives for hedging in an effort to protect their investors from losses. From the standpoint of financial accounting there has been little to no regulation on the use of derivatives. However in 2008 the Financial Accounting Standard Board created a strong standard known as FAS161. All companies and accountants are now responsible for accurately representing their derivatives and hedges. In particular, FAS161 requires that all companies disclose all information regarding the amount of derivative activity the company undertakes, as well as all profits and losses from those investments. One industry that has relied heavily on derivatives is Real Estate Investment Trusts [REIT]. While REITs use derivatives in majority for hedging purposes, will there be a change in their use after the implementation of FAS161? My research project will analyze the statements of Operation and notes provided to financial statements for multiple REIT companies. I will compare the data collected prior to FAS161's implementation to the most recent information available. I expect to find a decrease derivative usage but it is not yet known whether this will be a result of this new accounting standard or another result of the unstable economy.



2 Room 174 1:20-2:05 Panel 3

Patrick Mayhew

Akinloye Akindayomi (Faculty Sponsor)

Department of Accounting, UMass Dartmouth, N. Dartmouth, MA, 02747-2300

Integrating International Financial Reporting Standards in Business Education

The purpose of this research project is to analyze the convergence of United States Generally Accepted Accounting Principles (GAAP) with the International Financial Reporting Standards (IFRS) and its effects on collegiate education in accounting. More specifically, this research explores the need for colleges and universities to integrate IFRS relevant material into their business curriculums. It is predicted that the United States will be adopting IFRS as the newest set of standards for accounting and financial reporting. For this reason, schools must change their curriculums to be able to prepare current and future students to enter careers in accounting and finance. The information within this project was collected through survey and also through researching various organizations and individuals involved with convergence. Many organizations and auditing firms offer programs guidance on integrating IFRS into current accounting curriculums. This project analyses these programs and offers other solutions that schools may consider in order to integrate IFRS. The method of survey was used to understand student expectations in an effective business curriculum and also to analyze student demand for a course in IFRS if it were to be offered on the University of Massachusetts Dartmouth campus. The research gathered in this project hopes to conclude two things. Firstly, that students demand a curriculum that includes IFRS relevant material in order to properly prepare them for a successful career. And finally, to encourage schools to consider making changes to business curriculums now in order to accommodate the coming changes in the fields of accounting and finance.



Advertising

3 Room 174 11:35-12:20 Panel 2

Paola Ramirez

Benyamin Lichtenstein (Faculty Sponsor)

Department of Management, UMass Boston, Boston, MA, 02125

Hispanic Market Segmentation as Stereotyping: A Latino Perspective

Mass Latino migration to the United States, a country where the promise for social, economic, and political well-being attracts millions every year, has made the Latino community a profitable target for many businesses. Members of the Latino community are from approximately twenty countries, all very different yet united by the common term Latino or Hispanic. Their origin, as well as their cultures, beliefs, and traditions are very diverse from one another making it difficult (or not) for business to target them. A survey to the Latino community in Massachusetts is used to explain three main factors. One, giving the formal definition of market segmentation which consists of targeting groups of people with similar wants and needs, the survey seeks to explain how Latinos feel about being regarded as one group. The survey also intends to explore what's the Hispanic sentiment about the amount of Latino representation in English advertisements. Finally, the survey will aim to understand how Hispanics feel about the accuracy of the advertisements they see portraying Latinos. Implications and limitations are discussed, as well as suggestions for future research on the subject are offered.



African American Studies

4 Room 809 1:20-2:05 Panel 3

Meghan Lemay

Martha Yoder (Faculty Sponsor)

Department of Commonwealth Honors College, UMass Amherst, Amherst, MA, 01003

The Link Between Structural and Implicit Racism and Health Disparities in Contemporary America

This thesis will examine the ways in which structural and implicit racism are connected to current health disparity trends in the United States. African Americans have disproportionately higher rates of chronic disease including heart disease and diabetes. Although there are many factors that contribute to this problem, I hypothesize that structural racism and implicit prejudice continue to be significant inhibitors of health equality. Implicit racism is oppression that is perpetuated by those that have outwardly egalitarian attitudes and intentions, but still hold unconscious negative beliefs and attitudes about people of color. I assert that this type of subtle racism is negatively impacting the way white health care professionals, as well as whites in all institutions, interact with African Americans and therefore influences their health. This type of discriminatory practice is going on in addition to the structural racism that permeates society and influences health inequality. Attention to implicit racism is of particular importance now because the individuals and institutions that are working on American health care reform are barely acknowledging health disparities based on race. The dangerous belief that America is beyond racism is only spurring more implicit racism and therefore only disabling the effort to decrease health disparities based on race.



American Indian Studies

5 Room 172 11:35-12:20 Panel 2

Lauren Burch

Vanessa Diana (Faculty Sponsor)

Department of English, Westfield State College, Westfield, MA, 01086

From Assimilation to Cultural Pride: Reforms Past and Present in Native American Education

During the late nineteenth and early twentieth centuries, Native American children were forced into boarding schools in an attempt to Americanize them and stamp out their Indian heritage. Contemporary Native American writers, such as N. Scott Momaday in his screenplay "The Moon in Two Windows," and contemporary educators suggest we must understand this history of assimilationist education in order to shape positive education reform for Native American children today. Indeed, in more recent years Native American teachers and their non-Native allies are implementing positive reforms. There are efforts to incorporate the specific tribal cultures into the curricula in areas with high populations of Indians, such as reservations. I discuss examples from a Crow elementary school in the 1990's and an Arapaho middle school in the early 2000's, affirming that Native Americans are empowering themselves by reclaiming their children's education to instill pride and cultural knowledge. The policies and perceptions of how Native Americans should be treated within the education system have changed over the course of time, but the Indians are now in a position to have their culture recognized and incorporated into the way they teach and learn. Future teachers – regardless of the cultural identities of their students – need to recognize this history and current reform movement



6 Room 808 4:05-4:50 Panel 6

Nicole Fortier

Kathleen Brown-Perez (Faculty Sponsor)

Department of Commonwealth Honors College, UMass Amherst, Amherst, MA, 01003

Peruvian Modernization: A Path Toward Indigenous and State Violence

In this work, I analyze the relationship between the Peruvian government and Amazonian indigenous cultures. I show there is a pattern of indigenous and government tension that has been increasing between the two groups since Peruvian independence from Spanish rule. These tensions have increased with the Peruvian government's efforts to modernize the nation to reach economic success in the global market. Three points of tension have emerged from the Peruvian government's methods of modernization and in response to them: land right controversies, fears of assimilation through education, and the indigenous search for political identity in a new forum. In each category, indigenous and government anger has grown and reached its limit of peaceful negotiations. Instead, tension erupted into isolated incidents of violence promoted by the government and the natives. In the 1990s, the government-sanctioned army targeted indigenous peoples for violence, under the illusion of clearing the country from terrorists who had recruited amongst tribes. A few years later, two government officials were found lynched in areas predominantly populated by natives. More recently, indigenous protests met violence as police shot into the crowd. In response, Indians kidnapped officers and slaughtered them to show the government they had had enough. Without relationship alterations to amend past wrongs and correct later points of tension, the future for the Peruvian government and its indigenous population is headed for an explosion of large-scale violence. This paper explores the pattern toward violence in Peru with the goal of preventing large-scale violence that could lead to civil war or genocide.



7 Room 808 1:20-2:05 Panel 3

Jillian Furman

Kathleen Brown-Perez (Faculty Sponsor)

Department of Commonwealth Honors College, UMass Amherst, Amherst, MA, 01003

The Integration of Alternative Dispute Resolution within American Indian Tribal Justice Systems

The history of global colonization has left modern academics to attribute certain qualities to the colonizer and other more sympathetic qualities to the group(s) colonized. With that said, it is most often appropriate to acknowledge the latter as deserving said sympathy, and, furthermore, much research has dedicated its focus to both exposing and remedying the inequalities that have consequently resulted from this imperialistic model of globalization. This paper works similarly, as it intends to both expose the inequalities in the United States Justice System as it works for American Indians, while it also proposes the implementation of Alternative Dispute Resolution (hereinafter ADR) methods, as they have previously proven to be less adversarial and more so reflective upon Original Dispute Resolution methods utilized by American Indians prior to colonization of the Americas. This paper will explore the various yet original conflict resolution approaches employed by indigenous cultures specific to their needs, the forced integration of these cultures into the Euro-American legal system through both physical oppression as well as that stemming from legislation, and finally both the advantages and disadvantages of ADR as they apply to American Indian tribal justice systems.



8 Room 808 11:35-12:20 Panel 2

Antonina Griecci-Woodsum

Kathleen Brown-Perez (Faculty Sponsor)

Department of Commonwealth Honors College, UMass Amherst, Amherst, MA, 01003

Contemporary American Indian Intellectual Resistance and Theory

This thesis is a survey of contemporary Native American Indian intellectualism, concentrating on theories and methods of resistance to the European colonization of North America. Historically, American academia has excluded Indian scholars who have emphasized the power and legitimacy of their own cultural traditions and demanded that the history of genocide and ethnic cleansing of native populations be included in the dominant American narrative. Because of this exclusivity, American Indians who did have access to the mainstream intellectual discourse became symbols of the benefits of assimilation to Euro-American ideals and their intellectualism reflected this. However, the post-World War II generation of Indian scholars and activists would create a radical contrast to the methods of their counterparts in the past. It is the theory and intellectual methods of this “new” generation of American Indian intellectuals that I explore in this thesis, because, although their thoughts and actions parallel well-known global anti-colonial movements and thinkers, the intellectualism resulting from the circumstances of contemporary Indian life in the United States does not have the notoriety of other colonial conflicts. American Indian scholarship is both a critical element to understanding internal American social and political dynamics and a universally relevant commentary on the colonizer-colonized relationship.



9 Room 808 2:15-3:00 Panel 4

Harry Hudesman

Kathleen Brown-Perez (Faculty Sponsor)

Department of Commonwealth Honors College, UMass Amherst, Amherst, MA, 01003

An American Story: The Relationship between American Indians and the US Armed Forces

In this thesis I will prove that American Indians have had an integral affect on American warfare and they have been directly affected by every conflict from the Revolutionary War until today. I will explore the early involvement during the American Revolution and decisions made by Indians to remain neutral or side with either the Americans or British. Motivations for alignment will be discussed in an attempt to parse reasons for what motivates American Indians to choose sides the way they do. This presentation of facts will develop from early Revolutionary warfare to equally complex looks at the Civil War, Great War, World War II, and War on Terrorism which includes Iraq and Afghanistan. I will not only go into detail about what specific contributions American Indians have made on the field of battle but I will also dive into the aspect of remaining neutral. The way warfare has affected those tribes and specific American Indians who choose not to fight has proven harsh in the major amounts of land that has been stripped from the native peoples throughout American history. Factors of warfare such as the draft and citizenship rights in relation to compulsory service have proven to be significant aspects in the study of American Indian involvement. Through my study of the relationship between American Indians and warfare I have found that despite many abuses by the US government, the Indians have continued to be actively involved in warfare and their contributions have historically been made both for and against that same abusive federal government. This work provides a necessary look into the progression of the indigenous people of America and how they have risen as a majority with an unfortunately tight relationship with American warfare.



10 Room 172 11:35-12:20 Panel 2

Rachel Lareau

Vanessa Diana (Faculty Sponsor)

Department of English, Westfield State College, Westfield, MA, 01086

Misrepresentation in the Movies: A Native American Response

The romanticization and misrepresentation of Native Americans in today's popular culture reinforce negative stereotypes of American Indians. Today, many positive alternatives exist to combat these negative images, and by examining a Native American's artistic response to these stereotypes, we can better understand and appreciate the American Indian. This paper will focus primarily on contrasting Disney's movie "Peter Pan" with Spokane/C'ouer d'Alene author and film-maker Sherman Alexie's film "Smoke Signals." My paper examines the methods by which Alexie deconstructs these stereotypes while still acknowledging the problems faced by modern Native Americans. Ultimately, his characters' redemption challenges the image of the comical savage in "Peter Pan."



11 Room 808 3:10-3:55 Panel 5

Brendan Lehan

Kathleen Brown-Perez (Faculty Sponsor)

Department of Commonwealth Honors College, UMass Amherst, Amherst, MA, 01003

Tribal Sovereignty and Environmental Regulation

This paper addresses the issue of tribal sovereignty through an examination of environmental regulation on reservations. The analysis draws on critical legal analysis of the relationship between the Supreme Court and its constructions of tribal sovereignty. The author applies this analysis to the issue of environmental regulation on reservation lands to understand the implications of current regulation schemes on tribal sovereignty. The paper then looks to some of the problems associated with the liberal, pluralist model for environmentalism and the implications for the cultural separatism of tribes. A fundamental concern of the paper is the challenges and opportunities that tribes encounter in an effort to protect their sovereignty in an era of growing hostility towards the ideas from Congress and the judiciary. The historical realities of colonialism and federal policy towards tribes have left tribes walking a fine line between asserting independence and conforming to the mainstream models of environmental regulation. By looking to the options that Indian tribes have to assert sovereignty in environmental regulation this paper concludes that there are meaningful ways for tribes to protect sovereignty in the current era of divestiture.



12 Room 808 3:10-3:55 Panel 5

Kathryn Liddell

Kathleen Brown-Perez (Faculty Sponsor)

Department of Commonwealth Honors College, UMass Amherst, Amherst, MA, 01003

Determining Indian Tribal Water Rights in the Arid Southwestern United States

In this thesis, I explore and analyze how granting tribes water rights in the arid Southwestern United States will ultimately lead to a more sustainable use of water in the region. I begin by analyzing the history of water policy in the West, focusing primarily on the relationship between the federal government and Indian tribes. Then, I discuss the process of granting tribes water rights through negotiation or litigation. Once the historical context and methods of granting tribes water rights have been established, I show the economic implications of tribal water rights. I argue that tribal rights are essential in the Southwest for stable, advancing economies on reservation land. I further discuss the implications of tribal water rights by showing how the granting of tribal rights protects the sovereignty of tribal nations. I use these components to argue that Indian tribes throughout the arid region of the Southwest need to be granted their water rights in order to provide opportunity for economic advancement and sovereignty over their own resources, without which sustainable water technologies, resources, or management cannot be accessed or used, making sustainable water use in the American Southwest unachievable.



13 Room 808 11:35-12:20 Panel 2

Arielle Matlin

Kathleen Brown-Perez (Faculty Sponsor)

Department of Commonwealth Honors College, UMass Amherst, Amherst, MA, 01003

Urban Indian Health Care

This thesis examines the disparities in health and health care access amongst urban-based Native American Indians. My research was gathered from a wide variety of topics and fields, including the trust responsibility in place with the U.S. government, the history of the Indian Health Services, and the effects of rural-urban migration. This thesis investigates the failures of the past and current system of health care delivery. Data on discrimination and health is limited by errors in studies and identification. The findings of the literature available show extreme differences in health between urban Indians and the general population. Underfunding for Indian Health Services is widespread. The U.S. government and Indian communities must commit to health care reform. More money and human capital needs to be invested in the restoration of health for a continuously marginalized people. Alternative solutions and holistic forms of health care must be emphasized in order to obtain the level of care needed for the growing population.



14 Room 808 11:35-12:20 Panel 2

Sophia Pastore

Kathleen Brown-Perez (Faculty Sponsor)

Department of Commonwealth Honors College, UMass Amherst, Amherst, MA, 01003

Colonization Through Women's Bodies: A History of the Indian Health Service and Forced Sterilization of American Indian Women

In this work, I will examine the use of U.S. government-funded sterilization as a tool of genocide and colonization. I will focus primarily on cases involving American Indian women who were sterilized against their will or without informed consent by the Indian Health Service during the 1970s. In order to provide context, I will trace the effects of eugenic theory on U.S. sterilization policy throughout the twentieth century. In this paper, I present the notion that for women who have been historically stripped of their ability to mother new generations, forced sterilization is an attempt to destroy a culture through the destruction of a womb. The U.S. government has routinely used reproductive violence of this kind against women of color. However, the mainstream feminist reproductive rights movement of the 1970s actively avoided this fact, in effect affirming the exclusion of women of color from a vision of women's reproductive autonomy. In order to make clear the connection between control of women's bodies and larger systems of colonization, I will explore critiques of mainstream feminism written by American Indian activists. Through my research I have found that the violence of coerced sterilization goes beyond the body of the woman and into the community as a whole. This thesis presents not only the problem of coerced sterilization, but also community based actions that have been taken by American Indian women to reclaim their stolen history.



15 Room 808 2:15-3:00 Panel 4

Lina Phou

Kathleen Brown-Perez (Faculty Sponsor)

Department of Commonwealth Honors College, UMass Amherst, Amherst, MA, 01003

American Indian Education: The Follies of Assimilation

The purpose of this thesis is to examine how the U.S. federal government's policy of assimilation has negatively impacted the education of American Indians throughout history, while also exploring the possibilities of improving American Indian education through alternative teaching methods that promote cultural diversity. In order to understand how forced assimilation in American Indian education has affected the Indian child, I present an extensive look into the history of American Indian education dating from the colonial period to the present day. Included in that discussion, I explore the impact of racial prejudice against the Indian as a factor in the continued use of assimilation in education. The rest shall cover the benefits of promoting cultural diversity into American Indian education by presenting examples of specific institutions that succeeded in improving the learning environment for Native children. I conclude that forcing American Indians to assimilate is a continuous failure that disadvantages the Indian as well as destroys the distinct culture and language of each Indian. However, through programs focused on language and cultural revitalization American Indian education shall improve. The information presented came from extensive research done through readings from scholarly journals and articles as well as books written by experts in the field of American Indian education.



16 Room 808 4:05-4:50 Panel 6

Jennifer Reed

Kathleen Brown-Perez (Faculty Sponsor)

Department of Commonwealth Honors College, UMass Amherst, Amherst, MA, 01003

The Power of Glous'gap: An Analysis of the Mi'kmaq Tribe's Survival Since European Contact

As the Mi'kmaq tribe of North America was among the first tribes to encounter European explorers, their traditions have been particularly threatened. Despite facing constant threats, for over five hundred years, the tribe has remained strong while fighting foreign diseases, multiple foreign wars on their domain, and fierce attempts to cause their annihilation through violence and assimilation. This work is an exploration of how the Mi'kmaq tribe has weathered their colonization, becoming one of the largest tribes in North America. Most of the data acquired for this research has consisted of analyses and historical accounts compiled and published by previous scholars of Indians of North America specializing in the study of the Mi'kmaq tribe. Using these scholarly resources as evidence, this analysis aims to prove how the Mi'kmaq's cultural predisposition to handle difficult environments and their frequent migratory travel prepared them for their early encounters with European explorers. Because the Mi'kmaq were able to grow and adapt using their cultural strengths of social flexibility and ingenuity to hold their tribal identity intact, they were better prepared to face the strains of colonization than many other tribes. The Mi'kmaq tribe had the advantage of growing gradually with small groups of Europeans rather than facing the full force of imperial colonization. The Mi'kmaq tribe can serve as an example of how to fight against the strongest imperialist powers in the world.



17 Room 808 4:05-4:50 Panel 6

Emiliano Salazar

Kathleen Brown-Perez (Faculty Sponsor)

Department of Commonwealth Honors College, UMass Amherst, Amherst, MA, 01003

Tearing Down the Walls: Cultural and Structural Violence and the Federation of Kallpuliz

In this thesis, I will examine how the Federation of Kalpulliz, a newly formed international organization in México, is hoping to address the different types of violence currently being committed against various Indigenous communities across the Americas. As violence is a very complex concept, before discussing how the Federation of Kalpulliz deals with the violence, I will create a very specific definition of what violence actually consists of. Since many people reduce violence to its physical manifestation, it will be imperative to my thesis to bring attention to both the structural and cultural aspects of violence. In addition to this, I will also develop a definition of what a Kalpulli is and compare it to the other forms of organization and the urban tradition among Indians across the continent and prove that they are indeed complementary. Once these two definitions are supplied, I will provide a brief history of colonization in both the United States and Canada and in Mexico and South America, explaining how the treatment of the Indigenous population within these countries has been similar and in what ways they have differed. Once these concepts are established, I will be able to outline the forms of cultural, structural, and definitional violence perpetrated against the Indigenous population of the Americas and the implications they have on these people. At the end of each chapter I will explain the methods the Federation of Kalpulliz uses to combat these types of violence. A main theme throughout this research is the need for a united Indigenous front to combat these various forms of violence.



18 Room 808 1:20-2:05 Panel 3

Megan Strathearn

Kathleen Brown-Perez (Faculty Sponsor)

Department of Commonwealth Honors College, UMass Amherst, Amherst, MA, 01003

Dropout Rates of American Indians: Using Multiculturalism and Bilingualism in the Classroom to Lower Dropout Rates

I will explore the prevalence of elevated high school dropout rates among American Indian students. Before beginning any discussion regarding the contemporary state of education within the American Indian community, it is necessary to provide a historical backdrop to such a discussion. Thus, I begin my topic with an overview of the effect Carlisle boarding schools had on the American Indian student body. From this history, I will develop a connection between the loss of language and culture, a lowered sense of self-esteem and, finally, how the two combine to create higher high school dropout rates. I will acknowledge, however, the difficulties that arise in attempting to isolate the cause of dropout rates to one factor. Nevertheless, I aim to use the loss of language and the problems with regard to American Indian education as a lens with which to regard a broader issue facing education in the United States today. I will present multiculturalism and bilingualism within schools as a potential solution to heightened dropout rates. Furthermore, I will discuss the convergences and divergences between the theory and practice of multiculturalism and Culturally Responsive Schooling. I will conclude by progressing into a discussion of various educational philosophies, such as Progressivism and Essentialism, and how the two are applicable in our discussion of American Indian schooling. In this work, I will suggest that while Culturally Responsive Schooling may not be the solution, it may be a significant step in the direction of a more complete solution.



19 Room 808 1:20-2:05 Panel 3

Cory Telman

Kathleen Brown-Perez (Faculty Sponsor)

Department of Commonwealth Honors College, UMass Amherst, Amherst, MA, 01003

Kahnawake Education and the Reggio Emilia Approach

This thesis examines parallels between a traditional Iroquois approach to education and the Reggio Emilia approach to early childhood education. Focusing on the Mohawk nation and the community of Kahnawake, it explores the roots of Iroquois education through theories of Indigenous Knowledge, and the ways in which Indian education in Canada has oppressed and destroyed indigenous identity and epistemology throughout its history. The longhouse as a social and political institution, a history of Indian educational policy, and the resurgence of traditional identity and Mohawk language are all discussed. The thesis then considers Reggio Emilia, its cultural and philosophical roots, and the practices and ideas that it has developed. Key aspects of Reggio Emilia are reviewed, as identified by Italian Reggio Emilia educators and by European-American educators exploring “emergent curriculum.” The thesis identifies parallel philosophies and suggests practices that hold potential for future implementation in schools in Kahnawake, or elsewhere in Iroquois country, and for Reggio Emilia educators. Finally the thesis suggests future research areas and questions to explore in order to gain a fuller understanding of how emergent curriculum and an Iroquois worldview can complement each other in the pursuit of decolonized education.



20 Room 808 3:10-3:55 Panel 5

Josalyn Williams

Kathleen Brown-Perez (Faculty Sponsor)

Department of Commonwealth Honors College, UMass Amherst, Amherst, MA, 01003

Reservation Geography, the Gaming Industry, and Socio-Economic Change: the Problems with the Indian Gaming Regulatory Act

In this thesis, I will examine how the federal government failed to create substantial socio-economic change in American Indian communities through regulation of the gaming industry. I will explore how this lack of socio-economic change is connected to the provisions of the Indian Gaming Regulatory Act which did not take into account the impact of reservation location on gaming success. In order to bring understanding to this topic, I will present clear connections between colonization, the United States' treatment of American Indians, the federal government's failure to uphold treaties signed with American Indians, 20th century socio-economic conditions of American Indians, gaming on reservations, and the passage of the Indian gaming Regulatory Act. This paper also provides data that proves despite the regulation of gaming, American Indians are still some of the poorest people in the United States. This paper provides an understanding of the federal government's decision to regulate gaming on reservations in order to promote self-sustainability through the Indian Gaming Regulatory Act, and the Act's failure to create change because of reservation location.



21 Room 808 2:15-3:00 Panel 4

James Wright

Kathleen Brown-Perez (Faculty Sponsor)

Department of Commonwealth Honors College, UMass Amherst, Amherst, MA, 01003

American Indian Boarding Schools: Assimilation Through Education

In this thesis, I will explore how the U.S. government's policies, aimed at annihilating American Indians through educational assimilation, were ultimately unsuccessful due to everyday acts of resistance by American Indian youth and their families, changing societal views, and changes in administration and administrative policy. I present here a variety of scholarly research evidencing early goals of the United States' Indian educational policies, off-reservation boarding school experiences, changing political climates reflected in government-sponsored reports such as the Meriam Report, and results on the impact of education at off-reservation Indian boarding schools. In order to explore this topic, I will develop a history and analysis of the complex relationship sovereign American Indian tribes have shared with the United States government, specifically the trust relationship, which is the result of hundreds of treaties signed between sovereign tribal governments and the United States. I will explore how the manipulation and violation of the "trust relationship" on the part of the United States government resulted in shifting costly war efforts from exterminating American Indians one-by-one on the battlefield to eliminating the "Indian question" through an educational approach aimed at Indian children. The research provides a sense of the malicious persecution of American Indians, yet gives examples of inspiring agency, resistance, and efforts to utilize knowledge gained at off-reservation Indian boarding schools to ultimately preserve culture.



Animal Sciences

22 Room 801 4:05-4:50 Panel 6

Heather Fogarty

Barbara Osborne (Faculty Sponsor)

Department of Animal Sciences, UMass Amherst, Amherst, MA, 01003

Investigating Cell Death: Nur77 and its Role in Negative Selection of T cells

An important and vital process during the development of an immune system is the ability to discriminate self from non-self. During this development process it is critical for negative selection, or the induction of cell death, to occur. In this study, the intracellular transcription factor Nur77, has been shown to play an important role in cell death in T cells. Nur77 has been shown to leave the nucleus, enter the cytosol, and interact with the mitochondrial membrane, where known pro-apoptotic signals are released. However, the mechanism of how Nur77 triggers cell death still remains controversial. One known mechanism of apoptosis during negative selection is through intracellular calcium release. Signals through the T Cell Receptor results in activation of the inositol 1,4,5 triphosphate (IP3) receptor, located on the membrane of the endoplasmic reticulum. This signal induces calcium release which ultimately results in cell death in T cells. We have shown in DO11.10 T cells, that Nur77 causes an increase in IP3R-1 and a decrease in IP3R-3, two distinct isoforms of the IP3R. Our studies have also shown that Nur77-induced apoptosis requires a contribution from both intracellular and extracellular Ca²⁺ stores. Other possible interactions that may play a key role in this process are the B cell lymphoma-2 (Bcl-2) proteins. These Bcl-2 members, already present on the mitochondrial membrane, where Nur77 also associates, regulate intracellular Ca²⁺ release in immature T cells. It has been well documented that there is an interaction between Nur77 and Bcl-2. We propose a mechanism where Nur77 interacts with the IP3R and Bcl-2 to trigger apoptosis of T cells and will present experiments that address this hypothesis.



Anthropology

23 Room 911 10:40-11:25 Panel 1

Jacqueline Berman

Art Keene (Faculty Sponsor)

Department of Anthropology, UMass Amherst, Amherst, MA, 01003

cum Laude: Is There Really Honor in an Honors Education?

Title: "Cum Laude: Is there really honor in an honors education?" Author: Jacqueline Berman CE Type: Course Capstone Thesis Approved by: Art Keene, Anthropology This paper reviews an ethnographic study of honors students enrolled in the Commonwealth Honors College at UMASS Amherst during the 2009/2010 academic school year. Through participant observation in classrooms, interviews with undergraduates and administration, and focus groups, I asked students "What does it mean to get an honors education and what do you think it will do for you after graduation? What aspects of Commonwealth Honors College have positively and negatively affected you and what needs to be changed?" This study examines how honors students feel about the requirements of the Honors College and their motivation or lack of motivation to finish them. The paper concludes with recommendations for what the honors college can do to bridge the gap between student expectations and experiences.



24 Room 911 11:35-12:20 Panel 2

Kevin Bolduc

Art Keene (Faculty Sponsor)

Department of Anthropology, UMass Amherst, Amherst, MA, 01003

Is There Life After Graduation? The Ups and Downs of Senior Year During an Economic Downturn

The UMass Class of 2010 is graduating during one of the most turbulent economic periods in American history. Entering their post-collegiate years during a jobless economic recovery and facing the prospect of paying off record student loans, UMass seniors are facing pressures unlike any class before them. This paper seeks to examine and better understand the experience and emotions of UMass seniors during a time of great transition. Balancing their hopes and dreams while facing the realities of the modern world, senior year can be both an empowering and humbling experience for a student. Using an ethnographic approach, the senior year experience is examined drawing on interviews, focus groups, and observation of UMass seniors. The data collected includes the stories, thoughts, emotions, plans, and beliefs of the UMass Class of 2010. How do students view their senior year? What is important to them? Is senior year a celebration of their college life or preparation for the future? What factors influence seniors' decisions (or lack thereof)? Preliminary findings suggest that despite recognizing the difficulties of the real world, most UMass students maintain a bright outlook and cautious optimism for their post-graduate success, while a minority of students are living in the moment and "don't even want to talk about it." Findings may be helpful in determining the services and support the University provides a graduating senior.



25 Room 165 2:15-3:00 Panel 4

Kerstin Egenhofer

Ventura Perez (Faculty Sponsor)

Department of Anthropology, UMass Amherst, Amherst, MA, 01003

Do No Harm: Organ Trafficking and Biomedical Ideologies

While in the past organ donation was primarily motivated by altruism, there is a growing push to increase the supply of transplantable organs through alternative procurement strategies. Bodies and body parts are increasingly imagined as goods that can be bought and sold, an attitude that is manifested in the existence of a thriving international black market in human organs. Organ trafficking is a complex form of violence that it is rendered invisible or semi-legitimate by discourses that picture the body as a series of interchangeable parts that can be bought and sold like commodities. Medical professionals and the medical discourses that they act out in their daily practice are central to the establishment and maintenance of an environment where paying for an organ feels natural. This paper explores to what extent future medical professionals imagine paid organ donation to be an acceptable and viable procurement option. The study includes a discussion of the cross-cultural implications of selling an organ as well as the ways in which selling vs. donating an organ are far from identical experiences for donors although they involve indistinguishable surgical procedures. By gauging how medical and nursing students perceive the sale of an organ based on the language that frames the transaction as a generous gift to be rewarded or a business transaction to be remunerated I aim to illuminate how medical professionals negotiate the principle of "Do no harm" with their roles as caregivers to the recipients of organ transplants as well as the organ sellers.



26 Room 165 2:15-3:00 Panel 4

Violeta Haralampieva

Rosalyn Negrón (Faculty Sponsor)

Department of Anthropology, UMass Boston, Boston, MA, 02125

Dominican College Students' Ethnic Self-Identification

This research examines the ethnic and racial self-identification of 1st and 2nd generation Dominican UMass Boston students. Drawing on digitally recorded semi-structured interviews, I will explore Dominican college students' conceptualizations of ethnicity, race, and Dominican identity and how this impacts their ethnic and racial self-identification. The implications of the study for understanding alternative conceptualizations of ethnicity, race and ethno-racial classification will be discussed. My preliminary findings suggest that the majority of students interviewed see little difference between the concepts of race and ethnicity. Although taking into account skin color, ultimately, they see a person's race or ethnicity primarily as his or her cultural background. Overall, the findings suggest that first and second generation Dominican students at UMass Boston perceive racial and ethnic categories as complex and fluid, determined by a large number of different factors.



27 Room 911 10:40-11:25 Panel 1

Elise Lehotsky

Art Keene (Faculty Sponsor)

Department of Anthropology, UMass Amherst, Amherst, MA, 01003

An Ethnographic Examination of Examinations: UMass Community Perspectives on the Topic of Testing.

This paper reports on a year-long ethnographic research project exploring student and instructor descriptions of their examination experiences. While there is a substantial literature on testing and evaluation, student perception of these practices has received little attention to date. This project relies on participant observation, open-ended ethnographic interviews with both faculty and students and focus groups with students to assemble student narratives on their experiences with examinations. Students were asked about their perceptions of why they are tested, what testing accomplishes, how well testing does what it is intended to do and how students prepare for tests. Narratives were analyzed to discern how students make sense of their exam experiences and how these understandings influence their actions. Many faculty and students regard examinations as the most objective way of measuring student achievements. However, after taking a closer look, it is apparent that both faculty and students agree that the system of testing has many drawbacks. Students express a rich discourse on fairness and distinguish among faculty who are fair or unfair in their approach to testing. Students acknowledge that testing has always been a significant part of the current generation's education and this may account for their passive acceptance of testing as a necessary part of their schooling. Students prepare for exams differently and fare better on different types of exams depending on their learning styles. The paper concludes with recommendations for how faculty might use this information to construct and implement exams more effectively and in the service of learning.



28 Room 911 11:35-12:20 Panel 2

Kevin Lombardi

Art Keene (Faculty Sponsor)

Department of Anthropology, UMass Amherst, Amherst, MA, 01003

Student Passion at UMASS Amherst

Prevailing stereotypes and attitudes often cast UMASS -Amherst undergraduates as apathetic and unenthusiastic towards their studies. But where is the passion at UMASS? What gets students involved and engaged in their schoolwork? In this paper I attempt to answer these questions and paint a picture of what student engagement looks like at our University through my observation, analysis and participation in the Undergraduate Anthropology Caucus, a small student academic group in which the members show a conspicuous dedication to their work and group mission. This exposition of the actions, attitudes, experiences, beliefs and common sense of these students will not only help displace existing stereotypes but also give insight into how student academic passion is created and maintained.



29 Room 911 11:35-12:20 Panel 2

Lubna Mostafa

Art Keene (Faculty Sponsor)

Department of Anthropology, UMass Amherst, Amherst, MA, 01003

What is like to be a student who works?

Today, many college students experience undergraduate life through work for wages. While there has been a good deal of research on student employment, few researchers have explicitly investigated the student point of view. Few have asked how students make sense of the dual demands of work and school or how they perceive the impacts of one on the other. The purpose of this study is to illustrate working undergraduate students' experience through their narratives. The study is based on ethnographic fieldwork among four groups of student workers at UMass-Amherst and involved participant observation at student work sites, ethnographic open-ended interviews and mini-focus groups. The research reveals student perceptions of why they work, what work means to them and the impact that work has on their academic experiences. Preliminary findings suggest that many students value the wage work that they do beyond its monetary rewards, seeing it as valuable accumulated experience that will help them when they go on the job market. And paradoxically, many students assert that work has little impact on their academic lives but at the same time complain that professors show little understanding of how much of their lives is taken up with work. The paradox at the moment appears to be unacknowledged. Students believe that professors ought to modify their expectations to accommodate the demands of student work life. Exposing the conflicting belief systems is a necessary step in creating more effective and more fulfilling teaching and learning environments.



30 Room 911 10:40-11:25 Panel 1

Kevin M Lombardi

Megan C Torpey

J. Michael Munger

Art Keene (Faculty Sponsor)

Department of Anthropology, UMass Amherst, Amherst, MA, 01003

Checking off the Box: The General Education Experience at UMass

General Education comprises about one third of the university curriculum and is designed to teach such important skills as, critical thinking, writing, and citizenship. Currently, 81% of all American institutions of higher education, including the University of Massachusetts Amherst, are reviewing or modifying their General Education curricula. Every student has experienced General Education, and therefore has an opinion about that experience. Current reviews of curriculum are often lacking this important student perspective. It is with this in mind that we have decided to study how undergraduates make sense of, experience, and then behave in response to that sense in General Education. To study this student view, we have observed several general education courses for at least half a semester and asked students through conversations, interviews, and focus groups about their experiences with General Education. Preliminary results suggest that students have varied opinions on General Education. Some students feel that their experience has prepared them for an increasingly diverse world, while some students have found the experience to be a complete waste of their time. Our preliminary analysis suggests that there is a considerable disconnect between the way the faculty and administration understand General Education and the way that students understand it. While student understandings vary considerably, we can say at this point that for most students, Gen Ed is not fulfilling the goals professed for it. We will conclude with specific recommendations on how this information can be used to improve Gen Ed at the University of Massachusetts Amherst.



31 Room 911 11:35-12:20 Panel 2

Stephanie Pallone

Art Keene (Faculty Sponsor)

Department of Anthropology, UMass Amherst, Amherst, MA, 01003

GardenShare: An Ethnography of Peer Collaborative Learning

Title: GardenShare: An Ethnography of Peer Collaborative Learning At UMASS- Amherst, peer to peer teaching and learning is quite common and can be found across a wide variety of formal and informal settings. This paper reports on an ethnographic examination of peer to peer teaching and learning at UMASS-Amherst by exploring in detail, one context in which such teaching and learning occurs: the GardenShare interdisciplinary learning community. In order to research this way of teaching I became a member of the 2010 GardenShare class/RSO, a community of facilitators and students who share the role of teacher and learner. As a member I attended weekly class meetings, weekly garden and greenhouse planting and maintaining sessions, assisted in plant sales, planned Earth Week by arranging activities involving sustainability, participated in group projects and presentations, and organized monthly community potluck dinners. I conducted participant observation and open ended-ethnographic interviews. This paper serves as a reference on how students experience and make sense of their education within the context of a learning community. The peer to peer teaching and learning experience is essential in comprehending how students learn using alternative methods at UMASS-Amherst. This paper concentrates the on the student's perspective of their involvement in a learning community through personal experience and narrative.



32 Room 165 2:15-3:00 Panel 4

Alexandra Sprague

Brigitte Holt (Faculty Sponsor)

Department of Anthropology, UMass Amherst, Amherst, MA, 01003

Corruption and the Nomadic Lifestyle: Two Obstacles to Community-Based Conservation in Mongolia's Eastern Steppe

“Community-Based Conservation (CBC) is based on the idea that if conservation and development could be simultaneously achieved, then the interests of both could be served” (Berkes, 2004). While studying abroad in Mongolia the researcher did an independent study project on community-based conservation in Mongolia’s eastern steppe. Rural Mongolian herders face unique difficulties with community-based conservation due to their nomadic lifestyle. The researcher wanted to evaluate whether or not CBC was successful for herders in these communities. The primary research question was: What are the benefits and problems associated with CBC for people and communities? The location of study was the easternmost provinces of Mongolia, Dornod and Sukhbaatar aimags. The researcher traveled to nine active herder communities and carried out interviews to find out their opinions about the success of CBC. Results suggest that CBC brings many difficulties and few benefits for Mongolian herders. In general, community members were critical of their leaders for corrupt policies such as lack of transparency, keeping community funds for themselves, and not completing community work. Perhaps related to this, a higher percentage of community leaders indicated that they had seen benefits. However, there were also examples of successful communities that had improved their local environment and quality of life through this project. The researcher further investigated why many of the communities were unsuccessful. She has been placing her informants’ experiences in the context of both worldwide community-based conservation and Mongolia’s political, economic, and physical environments to determine whether the main issue is poor implementation of the project or a mismatch between community-based conservation and the nomadic herding lifestyle. Beyond this she hopes to offer advice, based on her research, to organizations considering doing community-based conservation in Mongolia.



Art

33 Room 162 2:15-3:00 Panel 4

Thomas Paiva

Tom Grady (Faculty Sponsor)

Department of Art, Bristol Community College, Fall River, MA, 02720

Breaking down visual language

Artists are continually challenged when using visual language. To evoke specific emotions, ideas, and concepts in viewers proves difficult if everyone sees things in differently. Abstract or literal in intent, the final message may always be confused or misdirected, unless of course the artist spells out exactly what the intention is. If the viewer does not see the message the artist is trying to convey, has the artist failed? What if it references material the viewer knows nothing about? This presentation will explore these notions as they apply to a number of specific artworks, from intention to creation to reception.



Art History

34 Room 175 4:05-4:50 Panel 6

Kathryn Breen

Eric Poehler (Faculty Sponsor)

Department of Classical Language & Literature, UMass Amherst, Amherst, MA, 01003

Reflecting Reality: How the Smallest Aspects of Third Style Painting Mirrored Augustan Rome

The purpose of this project is to show how the third style of Roman wall painting was directly indicative of social, political, and religious reform in Rome during the reign of Caesar Augustus. The question of how this painting had such a function is addressed first in a quick background of the late Roman Republic and the beginning of the Empire, then the history of Augustus's reign. The second part of the paper is a visual analysis of the canonical example of third style painting, the so-called "Black Room" from the Imperial Villa at Boscotrecase, now at the Metropolitan Museum of Art in New York. In combination with the history, this visual analysis sets the stage for the main question asked in this paper: why are all the details so small? The third part of the paper attempts to answer that question with examples of Augustan conservatism, including his religious and social reforms.



35 Room 175 4:05-4:50 Panel 6

Daniel Healey

Monika Schmitter (Faculty Sponsor)

Department of Art History, UMass Amherst, Amherst, MA, 01003

Prefiguring Resurrection in Rosso Fiorentino's "The Dead Christ with Angels"

Rosso Fiorentino's *The Dead Christ with Angels* (ca. 1524-27) seems to betray its own title. Christ's monumental, androgynous and eroticized form is at odds with the work's purpose as a devotional image and threatens to dilute the work's emotive potential, especially in the religious climate of sixteenth-century Italy. Rosso's treatment of the scene also deviates from that of many of his contemporaries; by imbuing Christ's form with subtle hints of life and enlivening the composition with symbolic details, Rosso achieves a depiction that projects into the future and prefigures his subject's miraculous Ascension into Heaven. This paper seeks to locate Rosso's altarpiece in the context of its iconographic type and pinpoint the artist's particular innovations in treating the devotional subject and particularly Christ's physical body. Addressing modern, art historical literature as well as similar works painted by Rosso's Renaissance contemporaries, this research seeks to gain insight into the painting's context at the time of its creation and to explain its unique and continuing attraction.



36 Room 175 4:05-4:50 Panel 6

Rachel Young

Monika Schmitter (Faculty Sponsor)

Department of Art History, UMass Amherst, Amherst, MA, 01003

Saint Catherine of Alexandria at Prayer: Reflections of Titian's Style on a Small Scale

Relatively little scholarship has been devoted to Titian's Saint Catherine of Alexandria at Prayer, a late work commissioned for private devotion. What has been written about it generally tends to focus on its somewhat unusual iconography. This paper analyzes the style of the Saint Catherine, arguing that the painting combines stylistic modes and compositional models from different periods of the artist's career. Published articles and books, as well as comparisons to other works by the artist are used as reference points. The major factors considered are his technique, including brushstroke and use of color, composition of the image, and handling of pictorial space, as well as the extent of involvement of Titian's workshop within the painting. The figures of Saint Catherine and Christ, as well as selected parts of the foreground and background display the rich use of color and lush, expressive handling of paint so distinctive of Titian's own hand, particularly in his later works. Pictorial space and depth is at once emphasized, through various illusionistic tools, and denied, through elements in the foreground and background of the work. I conclude that Titian's mastery and manipulation of the formal qualities of his art imbue the subject matter with particular intensity and deeper meaning.



Astronomy

37 Room 175 3:10-3:55 Panel 5

Jessica O'Connor

Sara Salimbeni (Faculty Sponsor)

Department of Astronomy, UMass Amherst, Amherst, MA, 01003

Photometric Analysis of a Sample of Starburst Galaxies at $z \sim 4$

This project involves some photometric properties of a sample of starburst galaxies at $z \sim 4$. These properties include ultraviolet extinction, dust content, mid-ultraviolet flux and absolute magnitude and the ultraviolet luminosity function (the number of galaxies per unit volume per magnitude interval). The sample used is extracted from the multi-wavelength GOODS (Great Observatories Origins Deep Survey) North and South catalog. Each galaxy in the catalog is provided with photometric redshift information obtained from an SED (Spectral Energy Distribution) fitting procedure using between 7 and 12 photometric bands depending on the galaxy. Out of a catalog of over 30,000 galaxies, a sample is selected, which is limited by flux (z band magnitude < 26.5) and color of star-forming galaxies at $z \sim 4$ using the Lyman-Break technique. Using multi-wavelength information, the ultraviolet slope (B) for each galaxy of the sample is calculated and then the flux at 1600 Angstroms is derived. Combining the information on redshift and flux, an ultraviolet luminosity function is obtained using a method called $1/V_{\max}$. Finally, this luminosity function is compared with those from the literature that were obtained with other techniques such as the Maximum Probability Method. The results of this project had a lower normalization than earlier results from the literature, most likely owing to the absence of a completeness correction needed to recover the total number of ultraviolet emitting galaxies when the $1/V_{\max}$ method is applied to this color selected sample.



Biology

38 Room 175 1:20-2:05 Panel 3

Victoria Carroll

Samuel Hazen (Faculty Sponsor)

Department of Biology, UMass Amherst, Amherst, MA, 01003

Plant genes that interact with constitutive over-expressing gene promoters

Gain-of-function or over-expression mutants are common to genetic analysis as well as applied biotechnological applications. In plants, the Cauliflower mosaic virus 35S (CaMV 35S) and the maize Ubiquitin (UBQ) promoters lead to constitutive and high levels of expression of downstream genes. Transcript levels become elevated in virtually every cell and tissue type regardless of developmental stage. While the functional sequences of 35S and UBQ are characterized the proteins that bind directly to those sequences to confer over-expression are unknown. We propose to screen for plant transcription factor proteins that bind directly to these regulatory regions. We constructed vectors where the promoters are fused to the LacZ reporter gene and stably integrated them into the genome of common bakers yeast, *Saccharomyces cerevisiae*. We will now independently transform each of the ~1,800 *Arabidopsis thaliana* transcription factors and perform a yeast one hybrid assay which measures protein-DNA interactions. Interacting proteins will be further explored to 1) discover the specific sequence they bind and 2) test their influence on over-expression in both gain and loss-of-function transcription factor mutants.



39 Room 175 1:20-2:05 Panel 3

Emily Dennstedt

Brad Bryan (Faculty Sponsor)

Department of Biology, Worcester State College, Worcester, MA, 01602

RhoA/ROCK signaling is essential for multiple aspects of VEGF-mediated angiogenesis

The small GTPase RhoA and its downstream effectors, ROCK1 and ROCK2, regulate a number of cellular processes including cell motility, proliferation, survival, and permeability. We demonstrate that pharmacological inhibition of ROCK1/2 using Y-27632 or siRNA gene knockdown strongly disrupts vascular endothelial growth factor-mediated angiogenesis. These data indicate that Rho/ROCK signaling is an important mediator in a number of angiogenic processes including EC migration, survival, and cell permeability, and suggest that Rho/ROCK inhibition may prove useful for the treatment of angiogenesis-related disorders.



40 Room 809 10:40-11:25 Panel 1

Anna lokheles

Martha Yoder (Faculty Sponsor)

Department of Commonwealth Honors College, UMass Amherst, Amherst, MA, 01003

Epilepsy: The 'Sacred Disease'

Epilepsy is a neurological disorder marked by seizures, sudden surges of electrical activity within different regions of the brain causing a person to act and feel differently for a short period of time. Although epilepsy has been written about since ancient times and some causes of epilepsy have been identified, including family history or brain injury, most causes are currently unknown. This may be one of the reasons that epilepsy has been called the 'sacred disease.' Throughout history, some cultures have considered people with epilepsy to be witches or associated with demons and condemned to death. Other cultures considered what people with epilepsy see during seizures to be a message from gods and therefore held them in high esteem. This thesis uses the biology and history of epilepsy to explain why this neurological disease, as opposed to others, is associated with the spiritual world.



41 Room 801 4:05-4:50 Panel 6

Kevin Lamontagne

Francis Juanes (Faculty Sponsor)

Department of Biology, UMass Amherst, Amherst, MA, 01003

Seasonal occurrence and intensity of a parasitic nematode (*Philometra saltatrix*) in the pericardial cavity of juvenile bluefish (*Pomatomus saltatrix*) inhabiting the Hudson River estuary, New York.

The purpose of my project is examining the seasonal occurrence and intensity of a parasitic nematode (*Philometra saltatrix*) on juvenile bluefish (*Pomatomus saltatrix*) in the Hudson River Estuary throughout summer and fall 2008. The pathological effects of this parasite on juvenile bluefish remain largely unknown, but have recently been associated with reduced reproductive potential in adults. Point and non-point pollution can increase the incidence of parasitism if the host species defense mechanisms are negatively affected, thereby increasing host vulnerability. Individual juvenile bluefish were dissected to gauge occurrence (proportion of infected fish to # fish collected), intensity (# nematodes per infected fish), and location of parasite infection. The effect of parasitic infection on juvenile bluefish was assessed by calculating body condition, feeding potential, and cardiovascular function. The pericardia of 310 juvenile bluefish collected bi-weekly in the Hudson River estuary from July through October 2008 were examined for *Philometra saltatrix* and ranged in size from 31 – 221 millimeters fork length (mm FL). The smallest infected juvenile bluefish was 51 mm FL (meaninfected = 124 mm FL; rangeinfected = 51 – 221 mm FL). Specimens of *Philometra saltatrix* were found in 27% of juvenile bluefish collected across all dates combined. Monthly occurrence was highest in September (62%; ntotal = 34) before declining to 13% in October (ntotal = 13). When separated by cohort, higher occurrence was found in summer-spawned juvenile bluefish (34%) than the spring cohort (27%) across all dates combined. The intensity of infection was greatest during the 24 September 2008 sampling event (mean = 2.4 nematodes/fish). The maximum intensity observed in the pericardium of any individual juvenile bluefish was 11 nematodes totaling 1.24 meters (m) in length. Infected juvenile bluefish were larger than uninfected fish, and a positive correlation was found between intensity of infection and fish length. The results of this study have provided previously undocumented information regarding the occurrence and intensity of *Philometra saltatrix* parasitism in juvenile bluefish residing in the Hudson River estuary. Throughout the 1980s and 1990s *Philometra saltatrix* was not observed during random examination of adult bluefish so there could be a relationship between the recent recurrence of this parasite and the variable bluefish recruitment that has been observed over the last several years.



42 Room 175 1:20-2:05 Panel 3

Michel Moravia

Aline Davis (Faculty Sponsor)

Department of Biology, Framingham State College, Framingham, MA, 01702

The Effect of T-bet Positive Dendritic Cell on Mast Cell Homing to Lungs of C57BL/6 Mice

Mast cells (MC) are found throughout the body near blood vessels and mucosal interfaces, an environment where they play a role in both induction of immunity and effector functions, especially in response to mucosal pathogens and allergens. MC home to the lungs and intestines as a committed progenitor (MCp) where they differentiate into mature cells. Although homing is known to be T- and B-cell independent, a recent investigation of MCp homing to lungs and intestine uncovered a role for T-bet, a transcription factor protein that regulates T cell development. T-bet deficient mice had reduced numbers of MCp in both the lungs and the intestines and the study found that T-bet expression within dendritic cells (DC) was critical to the homing of MCp to the intestine. Homing to the lungs was not investigated in that study. We have investigated whether T-bet positive DC are also required for MCp homing to the lungs. To evaluate this, I cultured bone marrow-derived DC from wild type (WT) C57BL/6 mice and transferred them to either WT or T-bet deficient mice and assessed whether the WT T-bet expressing DC restored MCp homing to the lungs. Two weeks after the transfer, I performed a limiting dilution assay to quantitatively assess the total number of MCp cells present in the lungs and intestines of the respective mice. We found no restoration of the decreased number of pulmonary MCp in T-bet deficient mice after receiving WT DC, although the MCp homing to the intestine was restored in these same mice. These results indicate that while the developmental transcription factor T-bet plays a critical role in DC development, allowing these cells to control MCp homing to the intestines, these same DC are not controlling MCp homing to the lungs, indicating a tissue specific effect of T-bet positive DC on MCp homing.



Chemical Engineering

43 Room 175 11:35-12:20 Panel 2

Joshua Grolman

Gregory Tew (Faculty Sponsor)

Department of Chemical Engineering, UMass Amherst, Amherst, MA, 01003

Novel Cross-linked Star Networks via Ring-Opening Metathesis Polymerization (ROMP)

Living polymerizations offer techniques through which polymers of controlled molecular weights and narrow molecular weight distributions can be created. In the absence of chain transfer and termination reactions, living polymerizations such as ROMP can be used to synthesize complex networks in a regulated manner. Star polymers represent some of the simplest non-linear polymeric structures, consisting of a core unit that serves as an anchor for many polymer chains. To afford these novel networks, star-shaped polymers are synthesized using Grubb's third generation catalyst via micro-gel core formation technique. ^1H NMR prior to each addition step demonstrates that each monomeric unit is polymerized by the remaining catalyst, and GPC suggests star-shaped structure. Upon addition of a second cross-linking agent solution, the polymer solutions form insoluble gels that are swollen with dichloromethane. The swelling characteristics in dichloromethane are shown to be dependent on the second cross-linker concentration in relation to the initiator concentration ($[\text{CL}]/[\text{I}]$).



44 Room 175 11:35-12:20 Panel 2

Ellinor Schmidt

George Huber (Faculty Sponsor)

Department of Chemical Engineering, UMass Amherst, Amherst, MA, 01003

Thermo-Chemical Decomposition of Algae as a Feedstock for Fuels and Chemicals

With the increasing demand of energy and the decreasing availability of fossil fuels, research into alternative energy sources have never been of greater importance. It is therefore necessary to make available a renewable and easily accessible feedstock that can contribute a significant amount of energy to our current energy needs. Currently the only sustainable source of renewable carbon that is large enough to be used as a substitute for fossil fuels is biomass. In this paper, algae was studied as a potential cellulosic biomass feedstock for the production of fuels and chemicals. It has previously been shown that fast pyrolysis is one of the most promising methods for biofuel production. Fast pyrolysis involves rapidly heating the biomass (500oC/sec) to intermediate temperatures (400-600oC) followed by rapid cooling (residence times 1-2 s). To assess the feasibility of the algae as a pyrolysis feedstock the components of the algae were measured and the thermal decomposition behavior was studied using thermogravimetry. At various temperatures during pyrolysis the reaction products were analyzed to determine nature of the major decomposition peaks. During pyrolysis major weight losses occur around 100oC, 200-250oC and 350-400oC and are assumed to be from the loss of water, decomposition of carbohydrates and lipids, respectively. Both aromatics and long chain alkanes are produced during pyrolysis of algae at 600oC. The long-chain alkanes produced during pyrolysis could provide an alternative substitute to the current crude-oil derived transportation fuels.



Chemistry

45 Room 175 11:35-12:20 Panel 2

Greici Mercedes

Sivappa Rasapalli (Faculty Sponsor)

Department of Chemistry, UMass Dartmouth, N. Dartmouth, MA, 02747-2300

Studies towards the Total Synthesis of Topoisomerase inhibitors

The enzymes Topoisomerase I and Topoisomerase II have been identified as suitable targets in chemotherapy, and certain drugs have been developed for their individual inhibition. However, the individual inhibition has limitations. Our research is focused on developing dual inhibitors that can inhibit both the Topoisomerases. We have undertaken some natural products for the same, and currently developing the synthetic routes using hetero Diels-Alder reactions. Results of our study will be presented.



Civil Engineering

46 Room 801 3:10-3:55 Panel 5

Meghan Krupka

Sanjay Arwade (Faculty Sponsor)

Department of Civil Engineering, UMass Amherst, Amherst, MA, 01003

Size Effect and Verification of Weibull Theory in Structural Composite Lumber

Weibull's weakest link theory has frequently been used to predict the failure of different timber and lumber types; however, few studies have validated its use for structural composite lumber (SCL) because of this material's largely undeveloped state. This experimental study seeks to determine whether Weibull's theory can be used to predict the tensile strengths of parallel strand and laminated veneer lumbers (PSL and LVL) and to verify the existence of the commonly observed phenomena size effect. Tensile tests were performed on specimens of differing gauge lengths with respect to three grain orientations: longitudinal, transverse, and thru-thickness. Weibull parameters for incorporating size effect were obtained for all directional groups for LVL and PSL. Statistical results verified the existence of size effect in LVL and PSL in all the tested directions. From comparison of experimental data to theoretical predictions, Weibull's weakest link theory was determined to sufficiently predict the tensile strengths of these two structural composite lumbers for Eastern Pine species; experimental data for LVL specimens exhibited the stronger fit to Weibull's theory.



Communication

47 Room 811 3:10-3:55 Panel 5

Hallie Acton

Erica Scharrer (Faculty Sponsor)

Department of Communication, UMass Amherst, Amherst, MA, 01003

Educational Or Not? Digital Games Enter The Traditional Classroom

Video games have an overwhelming relevance in today's society. One area that they are increasingly becoming associated with is education and educational practices. In the current study, I address this important topic by establishing that these games are successful instructional tools, with literature to support this, and examine, through a survey of educators, why they have such a hard time entering the classroom as learning tools. My research methods include an online survey, taken by approximately 80 secondary education teachers currently working at schools in Eastern Massachusetts and a set of open-ended questions for two administrators (principals) at these same schools. I expect to find that digital games are currently not widespread in use at schools for a number of reasons: teachers are not comfortable mastering the games because most are not "gamers" themselves, curriculum standards leave no room for supplemental learning, and other institutional obstacles exist such as school budgeting and computer access. A prevalent conclusion that can be drawn from my research is that there is a discrepancy between today's learners and today's teachers surrounding digital technology. While research stresses that students today learn in different ways than in the past, today's educators have yet to fully incorporate this phenomenon into their teaching methods.



48 Room 811 2:15-3:00 Panel 4

Edward Bitter

Erica Scharrer (Faculty Sponsor)

Department of Communication, UMass Amherst, Amherst, MA, 01003

Motivations for Sports Video Game Usage: Motion Control Video Games Versus Traditional Control Schemes

The rise of motion-control video games such as the Nintendo Wii offers a new opportunity to examine what makes the lucrative sports video game industry so popular. The purpose of this particular study is to determine what motivates college-aged students to play sports video games. Specifically, the study aims to compare motivational factors of actual sports and virtual sports, exploring whether competitive team sports and non-competitive, recreational individual sports activity, both of which are genres are represented in video game form, operate differently as motivational factors. The study will survey an estimated 150 college students in a large lecture hall and features multiple-choice questions and open responses to gauge motivating factors and opinions on gaming controls, and compares them against the respondents' gaming and sporting backgrounds. The study predicts that gamer-athletes who seek physical stimulation will be somewhat more enthusiastic about the type of gaming that mimics real-life physical activity, whereas those for whom the thrill of competition is paramount will favor more traditional (i.e. joypad) control methods.



49 Room 811 4:05-4:50 Panel 6

Laura Bunzick

Erica Scharrer (Faculty Sponsor)

Department of Communication, UMass Amherst, Amherst, MA, 01003

College Students Experiences With and Opinions About Sexual Aggression Compared To Video Game Use

Previous research has conclusively stated that video games contain both a large amount of violence and highly sexualized female characters; however, little prior research has examined whether there is a correlation in any way between the large amount of violence and the amount of highly sexualized female characters so often seen in video games. Furthermore, no research has looked into the effect playing video games containing such graphic content might have on the game player. This study aims to determine whether playing video games- which frequently feature high amounts of violence and depict very sexualized female characters- correlates to college students' experiences with and attitudes towards sexualized aggression. Additionally, I will also be comparing my study to others conducted in the area of pornography, as it is another form of highly sexualized media. An online survey will be administered to 900 college students attending a public university in New England, and it is expected that 300 will respond. The participants are enrolled in a communication course conducted online, open to both communication and non-communication majors. By using such a large and diverse group of participants, the results will be more representative of the general college population. The survey gathers information concerning demographics and media use and measures participants' attitudes concerning sexual violence. For the latter section, the survey contains a number of different scales- the Rape Myths Acceptance scale (RMA), the Aggressive Sexual Behavior Inventory (ASBI) and the Sexual Beliefs Scale (SBS). As many of the previous studies have focused on the content of the games themselves and not the potential negative effects they may have on the player, it is important to attempt to fill this large gap. This will show us whether playing video games corresponds to the attitudes and behaviors of young people regarding sexual aggression, a topic of utmost social importance.



50 Room 163 10:40-11:25 Panel 1

Kaitlin Calderara

Thomas Gardner (Faculty Sponsor)

Department of Communication, Westfield State College, Westfield, MA,
01086

The Military- Hollywood Connection

The purpose of this research paper is to explore the lesser know relationship between Hollywood and the United States military. This paper focuses on films, television shows, and video games such as Top Gun, Citizen Cohn, 24, JAG, Alias, Lassie, The Mickey Mouse Club, Desert Tank, Desert Storm II Back to Baghdad, and Kumawar. The goal is to make the public aware of how much the entertainment business has been propagandized to the government's benefit and how freedom of speech does not apply to all forms of art. The Pentagon and each branch of the military have a specific liaison office which reviews scripts and gives permission for Hollywood to use military equipment such as tanks, planes, and aircraft carriers. This research highlights recruiting techniques hidden inside the films, television, and video games. This paper does not focus purely on the negative aspect of the military-Hollywood relationship. The military also employs Hollywood to create training simulations for soldiers and true to life training camps for troops heading to Iraq. This subject is not well publicized, this research provides a small, yet detailed view into the military- Hollywood relationship.



51 Room 809 3:10-3:55 Panel 5

Sherezad Contractor

Martha Yoder (Faculty Sponsor)

Department of Commonwealth Honors College, UMass Amherst, Amherst, MA, 01003

A Comparative History of Media's Role In The Perception of Illness and the Role of Big Pharmaceutical Companies

In an age of television, magazines, and the Internet, there is a strong tendency for the individual's perception to be swayed by the marketing ploys and media coverage that inform them. Disease is no exception. In the case of chronic and infectious diseases, the past 25 years have seen an exponential increase in the dollars spent by the major pharmaceutical companies to market prescription drugs. This paper will serve as an historical overview of the role media coverage has played in peoples' perceptions of the chronic disorder, Type II Diabetes, and the infectious disease, HIV/AIDS. It takes into account the influence that both news coverage and privately-funded direct-to-consumer-advertising has played in the general public's perception of the diseases and in turn, their efforts at preventing or treating the diseases. This paper will show that media coverage imposes an individualistic view of chronic disease, while simultaneously promoting a collective approach to infectious disease. This paper will also explore the influence that Big Pharma funding plays in the supposedly impartial research of drug effectiveness, and the education and decision-making of medical professionals.



52 Room 811 4:05-4:50 Panel 6

Anna Frye

Erica Scharrer (Faculty Sponsor)

Department of Communication, UMass Amherst, Amherst, MA, 01003

Evaluating Advergaming

Abstract As a rapidly developing phenomenon in the world of advertising, “advergaming” has allowed advertisers to access a younger and more captive audience than ever before. Advergaming is the “...the unregulated practice of placing advertising brands and messages in online games and console video games,” and an advertising trend which brings in millions of dollars of revenue each year. With the increasing popularity of online sports, arcade, and puzzle games as forms of entertainment among primary and secondary-school aged children, advertisers have the opportunity to place advertisements in these games. Young people, for instance, play Nabisco Chips Ahoy! racing game in which the brand appears throughout the game, thoroughly integrated in every frame. This study is a survey developed to understand the relationship between online game exposure and media use, and consumer attitudes and brand awareness among young children and adolescents. 120 fifth graders enrolled in two public elementary schools in New England will voluntarily participate in this study. Fifth-graders were chosen because their ages typically fall between 10 and 11, which is the target age group of this study due to the popularity of advergaming among adolescents of this age. Participants will complete a 14-item paper and pencil questionnaire that asks questions regarding computer and Internet use as well as attitudes about branded products. The survey also includes a section asking participants to identify several brand icons commonly found on and off such online games. The compiled results of this survey will identify the relationship between media and advergence use among adolescents and their brand awareness and consumer attitudes. Due to the ever-increasing prevalence of latent and non-latent advertisements in aspects of daily life, advertisers are able to access younger and younger audiences. This study seeks to understand how, if at all, these audiences comprehend advertisements embedded in media they use regularly, perhaps calling into question the current unregulated state of advergaming.



53 Room 811 2:15-3:00 Panel 4

Garrett Hanlon

Erica Scharrer (Faculty Sponsor)

Department of Communication, UMass Amherst, Amherst, MA, 01003

Gamers' Skills in Adaptation and Improvement in a New Environment

Many previous studies have tested video gamers' eye-hand coordination and visual skills, but none have tested their proficiency at adapting to, and improving at, a new environment and challenge. The present study aims to research whether gamers, those who play video games regularly, show faster improvement and more impressive adaptation when introduced to the game of Ladderball, a game that involves the skilled throwing of ropes and balls onto a 3 rung ladder. The number of games won, average points per round, improvement between games, and number of rule infractions/questions will be recorded for each subject in a large group of people, half gamers and half non-gamers. Participants will also be coded as either male or female, athlete or non-athlete, and above or below average GPA, so as to see if the difference between gamers' and non-gamers' levels of adaptation and improvement is more marked than the difference between that of other groups, that is, to see if being a gamer is connected more strongly with higher levels of adaptation than being a male versus a female, athlete versus non-athlete, or above average student versus below average student. If the hypothesis is correct, and gamers show a superiority in one or more of these measures, it may imply that video games have potentially positive side effects that should be researched more thoroughly. It would be interesting to see that use of video simulators can be beneficial even beyond the specific tasks they are used to train.



54 Room 811 3:10-3:55 Panel 5

Mindi Harris

Erica Scharrer (Faculty Sponsor)

Department of Communication, UMass Amherst, Amherst, MA, 01003

Bored to Distraction: The Relationship of Emotional State and Video Game Use in Adolescents

The purpose of this study is to understand how adolescents cope with their emotions through video game usage. Due to the fact that they are our society's future, it is important to see how adolescents, who are always going through emotional hardships, relate to the ever-growing technology, especially the lesser-studied video games, that surrounds them. For the purpose of this study, a paper and pencil survey will be administered to 140 9th grade students of a Sunday High School in Eastern Massachusetts. 9th grade is a pivotal year and a time of transition and often emotional turbulence for adolescents so this age is appropriate for this study. The survey measures the respondents' video game access and usage, whether they prefer to play alone or with others, genre preference in relation to different emotions, how they view themselves emotionally and various demographics. Results will show the correlation between video games use and adolescents' management of various emotions. Thus, they will show how adolescents use technology to manage their moods. This data will be able to help researchers to further understand the minds of adolescents and how they are impacted by the technology in their lives, a topic of increasing importance in contemporary society.



55 Room 803 11:35-12:20 Panel 2

Tam Nguyen

Joan Brenner (Faculty Sponsor)

Department of Communication, Bunker Hill Community College, Boston, MA,
02129

Freedom of Speech

Freedom of speech is the soul of human rights, which has been promoted and protected since as early as the 17th century. This project on freedom of speech in the U.S is engaged in studying its historical development, and how freedom of speech was, is and will still be guaranteed throughout American society. Research on the history of innovative figures that influenced the notion of freedom speech within the last 400 years, and the actual practice of freedom of speech provide us with a broad view of its importance and influence on the advancement of our information era. From the statement of Socrates at his trial or Galileo's perseverance in proving his scientific findings to the argument of John Milton on freedom of the press, we observe the emergence of freedom speech and concurrently the resistance against changes that different perspectives can bring about. After centuries of development, freedom of speech now appears as the core value of American culture. This research will demonstrate how freedom of speech has become the driving force for our exploration of knowledge.



56 Room 808 10:40-11:25 Panel 1

Donica O'Malley

Susan McKenna (Faculty Sponsor)

Department of Commonwealth Honors College, UMass Amherst, Amherst, MA, 01003

From Ginger Spice to Ginger Kids: A Discourse Analysis of Redheads in the Media

Discrimination and stereotyping have been present in film and television since these media were created; often, this discrimination has been based on skin color or ethnicity, targeting minorities. However, a recent increase in stereotyping of people with white skin and red hair indicates that the concept of whiteness is not based solely on skin color. The purpose of this study is to expose and examine the narrow and limited portrayals of people with red hair in popular television, film and news media. When people see these stereotypical images and feel they should relate to or mirror them, but do not, there may be negative consequences. I analyzed both animated and real life depictions of redheadedness in film and television. In addition, I focused on the ways in which some redheaded celebrities have been portrayed in entertainment news, network news, and celebrity blogs. Local news coverage, social networking sites and blogs were valuable sources of information regarding anecdotes and personal sentiment about these issues. Many people with red hair who have been exposed to these stereotypes and prejudicial treatment experience low self-esteem, poor self-image, and a general feeling of "not fitting in." Red hair thus far has not been the focus of many social, psychological or comprehensive media studies. However, further study of discrimination against and salient stereotyping of redheads could identify additional areas of study, such as the deconstruction of whiteness, indicating new ideas about how various human identities are constructed and maintained.



57 Room 811 4:05-4:50 Panel 6

Kelly Quinn

Erica Scharrer (Faculty Sponsor)

Department of Communication, UMass Amherst, Amherst, MA, 01003

The New Generation of Role Models: A Study Measuring the Impact of Adolescent Video Game Exposure

The current study seeks to determine if there is a correlation between adolescent video game use and the perceptions adolescents have of females in terms of physical appearance and societal roles. Past research has proven that many video games depict women as inferior to men, shown in both the exploitation of their disproportionate bodies and their “damsel in distress” roles in many games. It is important to determine if and how these images in video games can impact real life perceptions of young people. The Cultivation Theory has measured the impact of exposure to television and found that media exposure can in fact influence viewers to adopt the media’s reality as their own. This study will assess if this theory holds true for the medium of video games. The study will be conducted at a North East middle school with a class of 25 sixth graders. Questionnaires will be distributed before and after a short media literacy curriculum unit is administered to link video game habits and real life perceptions of females. Data will be collected qualitatively by analyzing a series of focus group questions. Results will examine adolescent video game exposure and how it correlates with the participants’ perceptions of women. Results also expect to find that the media literacy component of the study will enhance critical thinking and analytical skills. In a media-saturated age in which young people spend more and more time with video games, these data will provide important insights.



58 Room 811 3:10-3:55 Panel 5

Adam Zeller

Mindi J Harris

Mackenzie Reif

Erica Scharrer (Faculty Sponsor)

Department of Communication, UMass Amherst, Amherst, MA, 01003

“Can Wii All Play?”: A Textual Analysis of the Marketing Strategies of the Wii

The current study is a qualitative textual analysis of the marketing strategies of the Wii, Nintendo’s latest video game system. Being that the Wii is one of the newest gaming systems and is so popular that it has become a social and cultural phenomenon, it’s important to see who the Wii markets its products towards. Although there is an assumption that the Wii targets a multigenerational audience, no one has ever studied whether or how that is the case. My study will determine whether and how the Wii purports to make gaming accessible to all ages and skill levels through the use of its intuitive and easy-to-use controls. To look at the Wii’s marketing strategies, I will be sampling commercials on YouTube as well as commercials and advertisements found on the Wii and Nintendo Websites. I will also be looking at the Wii and Nintendo websites as a whole, to see how they market the Wii. Some of the questions I will be asking as I code these commercials and advertisements are; how many people are present, what age group is represented, what gender is represented, what is the relationship between the people in the commercial or advertisement, and what appeals are used to promote the Wii? Ultimately, I want to see if the Wii is marketing its products to a wide range of ages or not and if so, how. Overall, I will be coding approximately twenty-five advertisements and commercials. In the end, my results will show that there are a wide range of ages depicted in these commercials and advertisements. From my data, I will be able to conclude whether the Wii truly is a multigenerational gaming system and whether that, in turn, revolutionizes video gaming.



59 Room 811 1:20-2:05 Panel 3

Max Slygh

Robert Dow (Faculty Sponsor)

Department of Commonwealth Honors College, UMass Amherst, Amherst, MA, 01003

Search For Self In All The Wrong Places

In twenty-first century American society the incessant barrage of media and advertisements influences how we think, feel, behave, and buy, resulting in a society of individuals who are searching for self in all the wrong places and who are the antithesis of thinking and questioning citizens. In order to try and understand this phenomenon, my thesis first examines the historic precursors and the evolution of contemporary media and advertising. Following this will be an examination and analysis of the ways in which advertisements have been able to influence and manipulate the individual as well as the psychological, sociological, political, and economic effects of those influences and manipulations on both the individual and society. My thesis concludes with a discussion of the ways in which we can counter the negative effects of advertising and a discussion of the potential future for advertising. My claims will be supported with documented facts and research and commentary through class lectures, documentaries, books, and scholarly, magazine, and newspaper articles. These sources have been written or directed by some of the leading analysts in the field of advertising and communications such as Robert McChesney, Marshall McLuhan, Max Sutherland, Sut Jhally, Neil Postman, Thomas de Zengotita, and Jean Kilbourne among others. My goal is for this paper to serve as a thought-provoking catalyst for individuals to more thoroughly question the influences upon them instead of accepting the promises and rhetoric of advertising as facts and as definitions of self.



60 Room 808 10:40-11:25 Panel 1

Amy Wanamaker

Susan McKenna (Faculty Sponsor)

Department of Commonwealth Honors College, UMass Amherst, Amherst, MA, 01003

Welcome to "Prisneyland": A Textual Analysis of Prison Break and Its Depiction of an Invisible World

This textual analysis will investigate the example of the television show, Prison Break, and how the program, which aired on Fox in 2005, portrays prison culture. This research is of significant importance because very few Americans have ever been inside a correctional facility; and yet, depictions of prison, which are readily available in film and television, convey stereotypes and perspectives that viewers are led to trust. Prison Break contains nearly all of the thematic elements that have been present in popular prison films from the past, and its mediated display of prison enforces a skewed image of an otherwise invisible world. The analysis will focus on Prison Break's characters, storylines, and overall portrayal of the modern-day penitentiary in the first ten episodes of season one. The analysis will compare such depictions to the factual data that has been released about prison demographics and atmosphere. The maximum security facility in Prison Break shows frequent riots and prisoner warfare, regardless of the fact that the majority of American federal inmates are being incarcerated for non-violent crimes. This exaggerated image of prison, shown in Prison Break, and in films, is a problematic presence in our culture. Researchers argue that such portrayals support negative stereotypes of inmates, an acceptance of assumed prison violence, and belief that convict rehabilitation programs are essentially futile. The analysis will make viewers aware of the discrepancies, as well as the few similarities, that exist between prison portrayals like Prison Break, and maximum-security facilities in the United States.



61 Room 811 2:15-3:00 Panel 4

Adam Zeller

Erica Scharrer (Faculty Sponsor)

Department of Communication, UMass Amherst, Amherst, MA, 01003

Are Video Games the Issue, or the Solution? The Pros and Cons of Video Gaming Effects of Childhood Obesity in America

The objective of this thesis to take a closer look into the issue of how video games are involved with childhood obesity and fitness, and focus mostly on this concern in America. The question of whether children ever utilize video games as a form of exercise will also be investigated, as well as if sedentary games are taking time away from other forms of exercise. Obesity has recently become one of the leading health risks in America, and researchers have actually pointed fingers at video games to combat each side of the argument – both in fueling and tackling this problem with children. I will explore both the potential for positive and negative effects of gaming on weight-related issues in American youth. This study uses a survey to measure young teens' opinions and experiences with sedentary and non-sedentary video games, as well as correlate given responses with a calculated BMI of the respondent. Conclusions will then be made about whether or not there is a clear link between a child's rate of obesity versus both the type(s) of video game they are playing (sedentary vs. non-sedentary), and for how long they are being played. I expect that results will show a correlation between childhood obesity and video game usage, and from collected data will be able to determine both the potential health risks and/or benefits associated with video gaming technology of today's world.

Communication Disorders

62 Room 801 11:35-12:20 Panel 2

Stephanie M McGloin

Kayleigh O'Connor

Shelley Velleman (Faculty Sponsor)

Department of Communication Disorders, UMass Amherst, Amherst, MA, 01003

Early Phonology in Williams Syndrome and Duplication 7q11.23 Syndrome

Introduction: Williams syndrome (WS) is a genetic condition involving the deletion of a specific series of genes on the seventh chromosome. In Duplication 7q11.23 Syndrome (DUP7), an extra copy exists of those genes which are missing in individuals with WS. Children with these syndromes share some characteristics (e.g., attention deficits), but differ markedly in other respects. For example, individuals with DUP7 demonstrate a narrower and higher range of intelligence than children with WS. In contrast, the basic language skills of children with WS are initially delayed but typically catch up to mental age expectations by preschool. However, almost all children who have DUP7 have significant expressive speech and language delay. DUP7 speech sound delays/disorders are often moderate to severe, including some symptoms typical of childhood apraxia of speech. Methods: Speech samples from videotaped play sessions of five children with DUP7 ranging from 21 to 37 months of age were compared to speech samples of children with WS matched for age, gender, SES, and approximate developmental level. Samples were analyzed for consonant and vowel repertoires, word and syllable shapes, and reduplication and harmony. Two of the five pairs were analyzed twice, first at 21 to 24 months, and again at approximately 36 months of age. Doing this allowed for the measurement of progress within individuals in addition to the comparison of abilities between subjects. Results: Both groups of children demonstrate speech sound delay/disorder in toddlerhood. Predominant syllable shapes are similar. However, children with DUP7 are far less voluble than children with WS and they produce shorter words. Also, the consonant repertoires of children with DUP are typically much smaller, especially in initial position. The differences between the two syndromes are even more marked at 3 years; the children with WS make much more rapid progress. Conclusions: The speech sound delays/disorders of children with DUP7 are often subtly differentiable from those of children with WS by two years of age. Over the next year, children with WS progress towards age expectations much more quickly than those with DUP7.



Community or Public Service

63 Room 917 4:05-4:50 Panel 6

Alexandra Adler

Gloria DiFulvio (Faculty Sponsor)

Department of Commonwealth Honors College, UMass Amherst, Amherst, MA, 01003

Capturing Stories for Nuestras Raices: Urban Agriculture and Grassroots Community Development in Holyoke, MA

Nuestras Raices is a community development organization located in downtown Holyoke, MA, originally founded in 1992 by the gardeners of La Finquita de South Holyoke. In the past 18 years, Nuestras Raices has grown to coordinate ten community gardens, a community farm, youth and women's leadership groups, and supports multiple local economic development projects and small business ventures. Oral histories were collected as a way to understand the experiences of participants in Nuestras Raices's programs. In addition, through analysis of the interviews, the research aimed to gain understanding of the role of urban agriculture as a base for community development, and the characteristics of Nuestras Raices as an organization that allowed for its expansion and success. The interviews were analyzed through the lens of understanding the role of Nuestras Raices's various projects in fostering cultural solidarity and building community social capital. The research was designed in a collaborative process with Nuestras Raices staff so that findings could be used as valuable organizational materials as well as for scholarly review.



64 Room 917 11:35-12:20 Panel 2

Roxanne Archibald

Gloria DiFulvio (Faculty Sponsor)

Department of Commonwealth Honors College, UMass Amherst, Amherst, MA, 01003

Youth Empowerment Through The Arts: An Oral History Project

Youth Action Coalition (YAC) is a nonprofit organization in Amherst that promotes youth empowerment through creative expression and social action projects. YAC is quite unique because the coalition is just that- a partnership between youth and adults. By having adults and youth working together in an alliance through the arts for social change, many different ages, generations and therefore ideas are considered. The purpose of this oral history project is to gain an understanding of the importance of an artistic and leadership environment within current high school students' lives. The oral history method allows youth who are frequently marginalized to have a voice. The project captured stories from three youth participants within different programs of YAC. Additionally, I volunteered 60 hours in order to learn and familiarize myself with the organization and community. By building relationships with participants and directors, I established a level of trust between interviewer and interviewee. After analyzing across the stories, several themes emerged regarding the impact of the arts and youth empowerment. This project serves to promote a dialogue about the importance of the integration between arts and youth in leadership positions. After documenting the stories and completing the project, the stories will be shared in a public exhibition.



65 Room 911 1:20-2:05 Panel 3

Rachel A Anglin

Victor J Jacek

Danielle Arsenault

Carol Soules (Faculty Sponsor)

Department of Commonwealth Honors College, UMass Amherst, Amherst, MA, 01003

Information Technology Capstone- Campus Community Partnership

Our objective has been to improve the coordination of Five College student volunteers in the Holyoke community through the use of Information Technology. We have created a sustainable website to connect the Community Organizations of Holyoke and the Five Colleges, using the Joomla content management system, and hosted by the Boys and Girls Club of Holyoke. The driving force behind this website is the Campus-Community Partnership. The Partnership is a group of people from the Five Colleges and the Holyoke community whose goal is to find a way to provide the best service to the Holyoke community that they can. Our goal was to create a centralized site for the Partnership, which provides a place for interactions between Community Organizations and Five College students. These interactions will enable organizations to post volunteer opportunities for students to become involved with, implement discussions forums for students, faculty, and community members, and announce training and organizational events. To ensure that the website is sustainable, we have trained people from the various Holyoke organizations on how to work the website, and have also trained the IT manager at the Boys and Girls Club to update the site as needed.



66 Room 917 1:20-2:05 Panel 3

Emily Bloch

John Reiff (Faculty Sponsor)

Department of Commonwealth Honors College, UMass Amherst, Amherst, MA, 01003

Student Action in Public Higher Education

Over the last few decades, and especially in this most recent financial crisis, states across the country have been divesting in their public higher education. They have been allocating few state dollars to public colleges and universities, causing student fees to skyrocket and faculty and staff job losses. Massachusetts has followed in this national trend, cutting state funding for higher education causing student fees at the University of Massachusetts Amherst to increase 96% since 2000, at the same time as increasing the faculty-to-student ratio (PHENOM, 2009). I am organizing along with students at the University of Massachusetts Amherst to increase state funding for higher education so that student costs can decrease. This semester students are organizing the first student-run lobby to bring students and other higher education community members to the state house to talk to state legislators about the importance of funding for public higher education in Massachusetts. I will be organizing students on this campus to advocate for themselves and increase funding for public higher education. The ultimate goal is to restore full funding to public higher education in Massachusetts. The primary goal of this project is to actively engage students by bring busloads of students to the April 6th Lobby Day. It is important to me both that public higher education, specifically UMass, is accessible and affordable for all residents of Massachusetts and that students here are empowered to advocate for themselves and public higher education.



67 Room 917 2:15-3:00 Panel 4

Amanda Brunelle

John Reiff (Faculty Sponsor)

Department of Commonwealth Honors College, UMass Amherst, Amherst, MA, 01003

Developing Leadership and Raising Awareness Through Expressive Self-Care

Within community outreach projects, where the focus is mainly on the other, it is easy to forget the self. In this project, I will organize volunteers from the Everywoman's Center to form a self-care group. Volunteers will gather twice a month for meetings in which volunteers can learn new methods of self-care and share their own methods within a close community. These methods will focus on expressive art, such as poetry, dance, or painting. As a volunteer at the center, I have felt firsthand the effects of helping others more than I help myself. I believe that everyone should be given the proper tools to care for themselves, especially when working for an organization that deals with intense, and possibly triggering, issues. By providing a variety of self-care methods, volunteers, including myself, will feel more confident practicing self-care and making it a priority. During some of these meetings, we will create art that can be displayed at an awareness event, similar to a Clothesline Project. Other members of the group will be sought out to become leaders of the project, in order to sustain the group over time. Everywoman's Center is designed to both empower survivors of sexual assault or violence and spread awareness to communities: both are goals that this project achieves. By building a strong support system, volunteers become stronger and better equipped to help others, thus creating a domino effect of empowerment.



68 Room 917 10:40-11:25 Panel 1

Melissa Clark

Gloria DiFulvio (Faculty Sponsor)

Department of Commonwealth Honors College, UMass Amherst, Amherst, MA, 01003

Nonprofit Organizations as a Recipe for Disease Prevention

Malnourishment, lack of health care, inadequate housing and improper clothing are all characteristic of individuals living in poverty. Unfortunately, all of these factors also increase susceptibility to disease. Opportunistic infections take advantage of immune systems weakened by the cold weather, lack of proper nutrients as well as other illnesses and thrive in those who are unable to seek treatment without health insurance. For the last year, I have volunteered at the Amherst Survival Center and interviewed three individuals who experience the harsh life living under the poverty line. This paper will explore further the relationship between poverty and infectious disease both academically and through their oral histories. Though living in less than ideal conditions, the three individuals interviewed have not fallen to the myriad of infectious diseases that pervade the socioeconomically disadvantaged. Similarities between the three include their utilization of and volunteer work at the ASC. Services include a hot lunch, a warm room, a free clinic, and a free store that is often stocked with warm winter apparel. Though the research started with this capstone course, I aim to provide a foundation for future students to continue to examine this relationship between poverty, the ASC, and infectious diseases while gathering the life stories of community members who are often ignored because of their economic status.



69 Room 911 2:15-3:00 Panel 4

Chris Pinheiro

Jeanne B Duggan

Emily Conant

Carol Soules (Faculty Sponsor)

Department of Commonwealth Honors College, UMass Amherst, Amherst, MA, 01003

Helping Nuestras Raíces Promote Green Ideals through Film

Title: Helping Nuestras Raíces Promote Green Ideals through Film Authors: Jeanne Duggan, Chris Pinheiro, Emily Conant CE Type: Service, Technology and Society Honors 499C, Section 9 Nuestras Raíces is a community based organization in Holyoke, Massachusetts that helps to promote community development through a myriad of services which stimulate the economy, improve social and health conditions, and promote environmental consciousness. The goal of our project is to facilitate media based projects that the organization can use to encourage community participation, attract grant providers, and reflect upon their personal experiences. Our first task is to use footage filmed at the Roots Up Green Jobs graduation to produce three separate films. Nuestras Raíces can utilize the first of these films when they are recruiting applicants for the program, which provides disadvantaged youth vocational training in green construction. The second film will be used as an advertisement to attract potential grant providers. The last film will be a souvenir for the students who graduated as well as the community members who made the graduation possible. In April we will be filming the press conference which will publicize the launch of Energía, a new energy efficiency company that specializes in reducing the energy cost and consumption. With the footage we will provide, Nuestras Raíces can publicize on their website the new company in hopes of attracting customers. We will be using our technical expertise in film and video editing to help assist the community based organization. We will be using a point and shoot camera and a Mini DV video camera, then editing with Adobe Premiere Elements. Nuestras Raíces is a model for a green community, and with the videos we will film and edit for them, we can help this non-profit organization promote their environmental consciousness.



70 Room 917 2:15-3:00 Panel 4

Kelleyanne Curley

John Reiff (Faculty Sponsor)

Department of Commonwealth Honors College, UMass Amherst, Amherst, MA, 01003

Self-Care in Organizing Campaigns

Self-care is a critical, but often forgotten, aspect in grassroots organizing campaigns. Often times, when leaders are working for a cause from the ground up, it is due to their personal experience with the injustice that they are seeking to change. Being actively involved in campaigns to end violence against women can be arduous on those who have experienced that violence; I have seen this first hand in my work at the Everywoman's Center throughout the past four semesters. In my project, I will be facilitating a group of women, most of who are already involved in ending violence against women. We will create a community that focuses on art and creativity as a means of expressing ourselves, working to become better organizers by using the emotions that we are taught to suppress. We will create pieces of poetry, drawings, music and any other forms of art that people use to center themselves. Members of the class will have the chance to teach an art form to the rest of the community as an example of using our individual assets. Some of the art that we create will be personal and some will be used to raise awareness of violence in our community. I am of the opinion that good leaders find and build leadership in those around them and share the responsibility of a creating a sustainable group. I will be looking for such leaders to take on organizing projects and to continue this community that will enable women to reflect on what they need to do to be effective organizers.



71 Room 917 10:40-11:25 Panel 1

Christina DePiano

Gloria DiFulvio (Faculty Sponsor)

Department of Commonwealth Honors College, UMass Amherst, Amherst, MA, 01003

“A Lifetime of Literacy: Stories of Low Literacy in Western Massachusetts”

This project was designed to understand the experience of low literacy from the perspective of students who receive services from The Literacy Project (TLP) in Western Massachusetts. TLP is a community-based non-profit organization that provides education in basic skills for adults. Engagement and service with the organization is an essential part of this project. I spent approximately 60 hours over the course of a year with The Literacy Project researching organizational history, the agency’s mission, and approaches to alleviating the economic hardship of low literacy. The service component of this project is an opportunity to establish a relationship of trust and mutual acceptance. Establishing common ground between TLP members and myself promoted the disintegration of social barriers and contributed to a conversational interview style when collecting oral histories. There is little in the research literature that records the experiences and consequences of low literacy from the perspective of those students seeking to improve their academic skills. Utilizing oral history methodology, I collected data through in-depth interviews with three TLP students. The interview conversations were transcribed verbatim for permanent documentation. A textual analysis of the TLP member’s interviews was completed and a constant comparative strategy was used to develop a pattern of associations across transcripts. These relationships were synthesized into overarching themes. Community organization members’ voices will help document critical issues from unlikely perspectives. Their stories and experiences will initiate a much-needed conversation within the community and society at large, bridging the gap between distinctive populations of people.



72 Room 917 4:05-4:50 Panel 6

Daniel Goldberg

Gloria DiFulvio (Faculty Sponsor)

Department of Commonwealth Honors College, UMass Amherst, Amherst, MA, 01003

Immigrant Experiences in New Communities: Re-Settling in the Pioneer Valley

The Center for New Americans (CNA) is an education and resource center for immigrants and refugees in the Pioneer Valley. For the Community Service Learning course “Capturing Stories for Community” I have volunteered in English classes at CNA and conducted in-depth interviews with students. The research purpose is to discover immigrant’s perspectives on the services they’ve received from CNA and to reveal immigrant opinions of the Pioneer Valley. Additionally, the project will highlight the importance of community organizations like CNA and the need for the services they provide to immigrants and refugees in our communities. I will present several CNA student’s stories about their home countries, immigrating to the US, living in the Pioneer Valley, and how their new communities have changed their lives. I have used an oral history methodology to collect these stories. These methods are advantageous because they allow the inclusion of first-person narratives of non-elite people in society. Experiences of immigrants and refugees in our communities often go untold or ignored. Through this project I hope to bring more attention to the experiences of local immigrants and to raise public awareness about the experiences of immigrants in the Valley.



73 Room 917 4:05-4:50 Panel 6

Gina Kwong

Gloria DiFulvio (Faculty Sponsor)

Department of Commonwealth Honors College, UMass Amherst, Amherst, MA, 01003

Stories of New Immigrants and the Necessity for Resources

In this presentation I will discuss my work with new immigrants at the Center for New Americans (CNA), a community-based organization in Amherst. As part of my Capstone course, I participated in 60 hours of community service with this organization. I will present findings from a collection of oral histories from several immigrant students receiving services at the CNA. The project aims to better understand the stressors new immigrants face while trying to adjust to their new life in America and how their participation in organizations like CNA may impact their lives. Oral history is a narrative form of inquiry used to gather and preserve historical information through recorded interviews of people about past events and ways of life. It is a participant driven methodology. Three immigrant students from CNA participated in the Oral history project. I analyzed the stories in order to understand the context of immigrants' lived experiences and the ways in which the CNA assists with this transition. This form of qualitative methodology has been used to provide valuable informational exchange among researchers, communities and individual about the needs for educational resource for immigrants and refugees. After creating and transcribing the stories, they will be given to the organization as a way to promote public dialogue about the needs for educational services for new immigrants. This project is a community-based process and I will share the challenges and benefits associated with oral history.



74 Room 911 1:20-2:05 Panel 3

Jason DeFuria

Christina Lagerstedt

Carol Soules (Faculty Sponsor)

Department of Commonwealth Honors College, UMass Amherst, Amherst, MA, 01003

Pathways to Family Success Information Technology Project

The main objective of our project is to improve the functionality of a nonprofit organization by advancing their use of Information Technology. Before starting, our team of two students learned about the methods of community service learning and researched the history of Holyoke, Massachusetts. This gave us a context to begin our work with a nonprofit community based organization. Pathways to Family Success, based in Holyoke, Massachusetts, is focused on the philosophy of family literacy, which includes adult education, childhood education, parenting support, and parent and child interaction in the learning process. This is accomplished by providing Pre-GED classes for parents with childcare, parenting resources, and support for families. Two ways in which we met our objective was by building a website and updating a preexisting Technology Room used by students in the class. The website provides up-to-date information for both students in the Pre-GED class as well as the community of Holyoke. Using a free content management system (CMS) known as Joomla, hosted by the Holyoke Public School system, our team has created a website in which the content is both easily updatable by the organization and available to the community. Additionally, by the updating the existing computers and acquiring donated hardware, the Technology Room is now a useful for use by families. By providing these services, we have modernized the information technology aspect of Pathways to Family Success.



75 Room 917 3:10-3:55 Panel 5

Heather McCormack

John Reiff (Faculty Sponsor)

Department of Commonwealth Honors College, UMass Amherst, Amherst, MA, 01003

Organizing the Low-income Community of Amherst to Address Issues of Food Insecurity

In the town of Amherst, MA, an area most often characterized by its fruitful intellectual and physical landscape, many are unaware of the significant barriers to sustainable, fresh, and healthy local food sources for the low-income community. My organizing project for the Citizen Scholars' Capstone program is to work within the low-income community to organize and motivate those who are unable to access all of the Valley's bounty, as well as local farmers and student organizations who are working on issues of food security, to work together to address these issues in a proactive and just way. One way I hope to achieve this goal is to organize consumers at the Amherst Survival Center to work with managers at the Amherst Farmer's market to implement an EBT/Food Stamp card-reading machine so that low-income people have increased access to local fresh food sources. Along with this, I hope to work with local community leaders (at ASC and beyond) to increase outreach to seniors and WIC recipients, a program which is already currently available but underused. So far, I have been networking with the Farmer's Market, as well as non-profits like Community Action (and of course the Survival Center) to get people on board with the project. As soon as I build the cross-community coalition necessary, the next step is to fundraise for the cost of the EBT machine through various projects as well as potential grant writing. Once the money is raised and we are certified by the federal SNAP program, we will create a volunteer committee that will be in charge of maintaining and supervising the machine. This volunteer committee will also be in charge of outreach and education so that low-income residents in the area who are eligible for this expanded access will be aware that it exists, and will have the opportunity to contribute to further food security organizing in the community.



76 Room 917 3:10-3:55 Panel 5

Kelsey Nagel

John Reiff (Faculty Sponsor)

Department of Commonwealth Honors College, UMass Amherst, Amherst, MA, 01003

HIV and Food Insecurity

I will be organizing residents of Hampshire County to create a system to meet the food needs of HIV-positive community members. I will be working with the organization AIDS Care Hampshire County, which provides case management services to HIV positive people. Food insecurity is a significant problem among AIDS Care clients, 60% of whom use food vouchers provided by the organization. However, the frequency of food vouchers has been cut and clients are having difficulty making ends meet. The long term goal of the project is to establish a small food pantry at AIDS Care staffed by client volunteers which would be supplemented by food vouchers that could be redeemed at grocery stores or farmers markets. The short term goal of the project is to create a "community cookbook" of healthy recipes recommended by AIDS Care clients. Good nutrition is essential to living well with HIV, but like most Americans, HIV positive people often struggle to eat healthily. The idea behind the community cookbook is to take the healthy recipes that many HIV positive people are already cooking in their homes and to gather them into one resource that the entire community can use to improve their eating habits. In the process of pursuing these goals, I hope to establish closer contacts between HIV/AIDS organizations and organizations that provide food assistance, in order to better cooperate to alleviate food insecurity. These goals align with the larger mission of AIDS Care, which is to help improve the quality of life of HIV positive residents of Hampshire County. No person should have to worry where their next meal is coming from, and those living with HIV are particularly vulnerable to poverty and food insecurity. By engaging community members, farmers markets, and food pantries, I hope to establish a system that will help HIV positive people better meet their food needs.



77 Room 911 1:20-2:05 Panel 3

Brittany M Bakanowski

Brad Cappucci

Marisa Pacifico

Carol Soules (Faculty Sponsor)

Department of Commonwealth Honors College, UMass Amherst, Amherst, MA, 01003

Holyoke Unites/Holyoke Se Une: Community Collaboration through Information Technology

The city of Holyoke, Massachusetts began as a small agricultural township in the 1600s, growing into its prime as an industrial powerhouse and cultural melting pot in less than two hundred years. After this period of rapid growth, however, came an era of political and cultural struggles which divided the City both economically and socially. The years that followed gave birth to several organizations which aimed their efforts not only at combating these emerging issues, but also at the revitalization of the City as a whole. In an effort to streamline the endeavors of many of these organizations, in April of 2007, the organization known as Holyoke Unites/Holyoke Se Une was formed to inspire community coordination and engagement. Holyoke Unites' ventures toward collaboration of and access to community resources and information are facilitated primarily through its website, HolyokeUnites.org. Though at its inception this website was both popular and promising, as the organization's work expanded the site began to fall into disuse. During this past academic year, through an interdisciplinary mix of community research, organization networking, site development, and training, this information technology resource and the organization as a whole, are being reconditioned and realigned with the needs and goals of the Holyoke Community as it positions itself for revitalization.



78 Room 917 11:35-12:20 Panel 2

Katherine Person

Gloria DiFulvio (Faculty Sponsor)

Department of Commonwealth Honors College, UMass Amherst, Amherst, MA, 01003

Empowering Young Women

Youth Action Coalition (YAC) is a non-profit organization located in Amherst, MA. YAC serves the community by providing after school programming for middle and high school students teaching empowerment through art. I volunteered with YAC's Girls Eye View of Amherst program which uses photography and creative writing as its medium for seventh and eighth grade girls. Over the course of one year, I spent over 60 hours getting to know the organization, its programs, and the participants. Through my service, I became an active member of the YAC community. In addition to my service, I collected oral histories from three participants of GEV. Oral histories provide us with stories that are often hidden while providing the narrator with a sense of importance and empowerment. The goals of the interviews were to understand how media and advertising affect adolescent girls and to better understand the experiences of those participating in YAC. In addition, I searched for the YAC's impact on their lives and within the community. To analyze the interviews, I searched for common themes throughout the three transcripts produced. The results of this project will reveal the meaning of media and culture from the perspectives of the youth interviewed. I will also discuss the impact of YAC, on participants' lives.



79 Room 917 10:40-11:25 Panel 1

Christina Pezzello

Gloria DiFulvio (Faculty Sponsor)

Department of Commonwealth Honors College, UMass Amherst, Amherst, MA, 01003

Amherst Survival Center: A Look at Daily Life Through the Eyes of a Narrator

This project utilizes an oral history methodology to understand the everyday experiences of participants at the Amherst Survival Center (ASC). As part of my Capstone class, I participated in 60 hours of service at ASC. Through my service, I was able to get a deeper understanding of this organization and the services it offers to its members. Many people from the Pioneer Valley visit and utilize the ASC. It is a place to build the confidence that people need to make a positive change in their lives. They go there to escape the stereotypes that are placed upon them because of the clothes they are wearing or the places where they are sleeping. I will present three oral histories of participants at the ASC. An oral history is an in-depth look at one's life through the use of interviews. This project allows the narrators to tell their story in their own words. Instead of statistics and numbers, it uses personal stories to understand poverty from the voices of those who experience it. The purpose of this presentation is to gain an understanding of the link between self-image and the ability to help people make a better life for themselves and their families. I will also describe the meaning of the ASC in the lives of the participants.



80 Room 917 11:35-12:20 Panel 2

Jaimie Reed

Gloria DiFulvio (Faculty Sponsor)

Department of Commonwealth Honors College, UMass Amherst, Amherst, MA, 01003

Capturing Stories for the Community: Mentoring Impacts

Mentoring relationships have been utilized as a tool for youth guidance, growth, and learning by Big Brothers Big Sisters for over 100 years. Past quantitative studies have found that mentoring programs provide positive benefits to mentees concerning drugs/alcohol use, life choices, and education. I spent one year in a community service learning Capstone volunteering with Big Brothers Big Sisters of Hampshire County. I became a prominent member of the organization through my work and extensively learned about the program by hands-on interaction both in and out the office. In addition to my service, I utilized an oral history methodology to understand the influence of mentoring relationships on the lives of youth through the eyes of the mentor and mentee. Oral histories are an in depth research methodology using first hand accounts of why and how this program affected members. Interviewees decide the direction of any answer, resulting in an opportunity to learn wholly new perspectives not considered before. Additionally, through this method I was able to record the stories of individuals who may not have otherwise been heard. Analysis of the transcribed oral histories was undertaken with the hope of uncovering several distinct themes including outlook on and experience with drugs/alcohol, change in habits/lifestyle, and change in personal/life goals. My project has resulted in stories that reveal the importance of the mentoring relationships provided by this program.



81 Room 917 10:40-11:25 Panel 1

Kelsey Robare

Gloria DiFulvio (Faculty Sponsor)

Department of Commonwealth Honors College, UMass Amherst, Amherst, MA, 01003

Oral History and Community Service: A Look at Poverty in the Amherst Community.

Oral history is a recorded collection of historical information, based on the interpretation of events through one's personal experiences and perspective. Oral history provides a voice to many groups of people who are often not represented in history. This project will gather oral histories from individuals who utilize the Amherst Survival Center in Amherst, MA. In addition to collecting stories, I completed 60 volunteer hours at the Amherst Survival Center (ASC) in order to familiarize myself with the organization and its members. This project provides insight into the complexity of poverty and places a story and a face to the many poverty statistics we often see. Also, through the power of stories, the results will enable the members of the Amherst community, Amherst Survival Center, and other students understand the importance and impact that the Survival Center has had on the lives of the people who use the services. This project captured stories from three individuals who utilize the Amherst Survival Center. I will present the findings of their stories as well as six other oral histories collected by classmates. These stories will provide a vast array of information about the experience of poverty in the Pioneer Valley.



82 Room 911 2:15-3:00 Panel 4

Kyle M Laga

Mankin Yuen

Nicholas Li

Ryan Roy

Carol Soules (Faculty Sponsor)

Department of Commonwealth Honors College, UMass Amherst, Amherst, MA, 01003

Leveraging Information Technology for Community Service

The goal of the Interdisciplinary Information Technology Capstone is to integrate community service learning with IT. Before entering the community, our group studied the Holyoke community. We focused on Holyoke's history, Holyoke's residents, as well as methodologies to maximize the impact of our projects for our nonprofit organization, The Holyoke Health Center (HHC). Our group worked on three separate and unique projects designed to increase HHC's IT efficiency. The three projects that our group worked on included accounting, in-service training, and media development enhancements. The accounting project focused on improving the usability and overall clarity of the fixed-asset section of HHC's balance sheet. This was accomplished by using a standardized numbering convention for all of the fixed asset accounts. A combination of Microsoft Excel and suspense accounts within HHC's general ledger system was used to ensure accuracy and to create and audit trail between the old accounts and the new accounts. The purpose of the media development project is to assist HHC with their goal to inform more community members about the services that HHC offers. The media development team is focused on gathering information about the services that HHC offers, and compiling the information into a friendly and inviting brochure and video segments. The brochure is created with flexibility in mind to accommodate evolution and growth of services. The videos will take advantage of the flat-screens in the waiting rooms, which have not yet been utilized.



83 Room 917 4:05-4:50 Panel 6

Megan Sutor-Segoshi

Gloria DiFulvio (Faculty Sponsor)

Department of Commonwealth Honors College, UMass Amherst, Amherst, MA, 01003

Combining Cultures: an In-Depth Analysis of Assimilation and Acculturation

This study was conducted in order to analyze the challenges, costs, and benefits of assimilation and acculturation for immigrants to the United States. Research was primarily conducted through a review of previous literature on assimilation and the immigrant experience, as well as through three oral history interviews with recent immigrants to the Pioneer Valley. While most research on immigration concerns statistical data and the study of laws and restrictions, oral history is an interdisciplinary form of qualitative data collection that gives voice to the underrepresented through in-depth interviews. This allows individuals to tell their own stories in their own words, making the research more accessible and for some, applicable. In addition to collecting stories, I participated in over 60 hours of service at the CNA. Through the service experience, I was able to obtain a deeper understanding of the organization and the participants. Participants who volunteered for the study agreed to have their stories recorded. Interview questions and analysis were specifically geared towards not only collecting a meaningful account of the individual's life, but towards gaining a sense of understanding of what is most important for immigrants to maintain (in terms of culture), and how American society has suited their lifestyle. The interviews were planned and obtained in collaboration with the Center for New Americans, a non-profit community organization.



84 Room 917 1:20-2:05 Panel 3

Nicole Tishler

John Reiff (Faculty Sponsor)

Department of Commonwealth Honors College, UMass Amherst, Amherst, MA, 01003

TAG: Teach Against Genocide

As it stands, there is not sufficient comprehensive genocide education in the Massachusetts public school system. Genocide is one of humanity's gravest ills and a major part of world history. Omitting genocide from the social studies curriculum undermines the significance of such events. Currently there is legislation that recommends genocide education. Chapter 276: An Act Requiring Certain Instructions in the Public Schools of the Commonwealth was passed in 1998 and requires mention of the Armenian genocide in Turkey when discussing World War I and in depth discussion of the Holocaust when teaching World War II. While this would be sufficient genocide education were genocide a fact of history, genocide occurs in today's international community. The way that genocide is taught currently frames it as an isolated incident in history as opposed to an ongoing international problem. When the first genocide of the 21st century erupted in Darfur, Sudan, many students did not know the term genocide, or directly equated it to the Holocaust. I am organizing students, teachers, and concerned Massachusetts constituents to attend a lobby day at the Massachusetts State House to lobby on behalf of Bill Number 463: An Act Concerning Genocide Education. Bill 463 would require more comprehensive genocide awareness education, bridging the gap between history and current events. The goal of the lobby day is to gain co-signers onto the bill and mobilize citizens to support this bill. Along with lobbying, high school students and teachers will be organized to write letters to their state representatives voicing their concerns for the current curriculum and support for curriculum reform.



85 Room 917 1:20-2:05 Panel 3

Melissa Urban

John Reiff (Faculty Sponsor)

Department of Commonwealth Honors College, UMass Amherst, Amherst, MA, 01003

Affordability For All

In my project, I am organizing University of Massachusetts (UMass) students to advocate for more funding from the state to avoid fee increases. I am working in conjunction with the Student Government Association (SGA). The organization's primary function is to serve the students at UMass, and a more expensive education is not in their interest. A costlier education affects students who are paying for school on their own, or whose parents are struggling to pay on behalf of their children. It can also touch those students who have friends that may have to drop out due to a fee increase. This project matters to me because I am a student on financial aid. While the university has been generous to me, I recognize that not everyone is in the same situation. I chose this project because I identify with all students who wish to better their lives through education but are stuck due to finances. The long-term goal of my project is to have affordable and accessible public higher education for all. During my organizing project, I will focus on smaller goals- a letter writing campaign to representatives and senators, and a student-led lobby day to the Boston State House. I will mostly be working with my committee, the State and Federal Organizing Committee, to encourage students to voice their struggles to legislators. The most important part of this campaign will be empowering students to speak up and fight the future of their education.



86 Room 917 3:10-3:55 Panel 5

Olivier Van Houtte

John Reiff (Faculty Sponsor)

Department of Commonwealth Honors College, UMass Amherst, Amherst, MA, 01003

Farmer's Market Community Outreach Campaign

I am organizing the low-income community of Amherst to gain fairer access to the Amherst Farmer's Market. I envision the use of food stamps, otherwise known as SNAP, at the market. Currently this is not available because the Market lacks a wireless machine that would allow the use of food stamps stored on a card. I also aim to provide a space or booth for the low-income community to be able to participate either in selling goods or in the cultural aspects of the market. These goals would fulfill the needs of the low-income community because it would allow access to an important town resource and nutritionally favorable foods. This project is critical because not only does it address the needs of community members but it will also act on common values, such as using locally grown foods and encouraging sustainable practices. In order to achieve these goals, I will find a group of low-income supporters and organize them to inquire to the market about getting a wireless machine and a space. This may also entail asking the town for some money or fundraising.



Computer Science

87 Room 175 2:15-3:00 Panel 4

Christopher R Poitras

Kristen Loder

Omayra Del Valle

Karen Druffel (Faculty Sponsor)

Department of Economics, Framingham State College, Framingham, MA,
01702

Framingham State College Study on Mentorship

Framingham State College is sponsoring a mentorship program that focuses on developing mentor-protégé relationship between undergraduate students and industry professionals. Currently, the Management Issues in Information Technology course is sponsoring a class research project on the functions of the mentor in order to gain insight into the benefits of the mentorship program. In this study, we will collect information by surveying three constituent groups consisting of mentors, students and faculty. The survey will collect demographic, age and gender information. After the survey results have been collected using SPSS (Statistical Package for the Social Sciences), we will quantify how different groups view the value of mentor functions. We will analyze the results of our study and it is anticipated that the results will provide a more accurate expectation about mentor's functions on students' self-esteem, academic performance, and professional networking. Analysis of mentorship expectations is necessary to better align the pilot mentorship program at Framingham State College with student, mentor and faculty outlooks.



Criminology

88 Room 172 2:15-3:00 Panel 4

Donald Steele

Jacob Stowell (Faculty Sponsor)

Department of Criminology, UMass Lowell, Lowell, MA, 01854

An Analysis of Violent Crime In New England: Examining the Impact of Immigration on Criminal Deviance

This research project will focus on levels of criminal violence in New England over the past decade. More specifically, the current study will examine the degree to which overall levels of violent criminal behavior in New England in the past decade have been shaped by the rising levels of immigrant settlement in this region. New England provides an ideal research setting for this project, as the foreign-born population in this area is large and growing rapidly. Over the past eight years, the size of the immigrant population in New England has grown by nearly 16%, with nearly 1.6 million foreign-born individuals currently residing in this region. Moreover, the share of the foreign-born population has grown in each of the states in New England. To put this high rate of growth into perspective, during the same period, the size of the immigrant population grew by roughly 13% nationally. Interestingly, despite the changing demographic profile, levels of violent crime in New England have declined by more than 7% since 2000. These opposing descriptive patterns raise questions regarding the impact immigration may have had on the observed reduction. Conventional wisdom holds that immigration is a crime-producing social process. However, an emerging body of social scientific research consistently finds an inverse association between the presence of immigrants and violent crime. Using a combination of census and UCR crime data, the results show support for findings in the existing literature, which indicate that immigration is not positively linked to levels of violence.



Decision Science

89 Room 174 1:20-2:05 Panel 3

Joshua McDougall

Wayne Kibbe (Faculty Sponsor)

Department of Management, Northern Essex Community College, Haverhill, MA, 01830

Principles of Corporate Ethical Decision Making

Over the course of the Fall 2009 semester, I conducted an analysis on corporate executive decision making, as well as the practices and guidelines executives follow to make the best decision. To do this, I have chosen three well known companies that have faced notable ethical situations in the past. The first company I chose was the pharmaceutical provider, Johnson and Johnson; This organization is well known for its strong stance on ethical decisions and admired for its ability to handle tough situations. The second company I examined was the former energy provider Enron, and this organization had an unprecedented influence on how businesses operate today as a result of countless frauds committed in several departments in this organization. Last, but certainly not least, I researched Nike, a high end sporting good producer. This organization has faced countless attacks related to labor laws and sweatshops overseas and quintessential of a turn around company in ethical decision making. Overall, I developed three keys to aid in making an ethical decision. To set a gauge on how effective each one of these organizations ethical standards and practices measure up in the business world, I compared four major indicators of success or failure. These indicators are: the foundation established prior to the ethical incident in question, the major incident in question and their reaction to the incident, the stock value before and after the mishap, and where these companies are today. The results represented three key principles that provide significant assistance for influencing corporate ethical decision making and elucidate the true magnitude involved in making an ethical decision. Many people view ethical decisions as an analytical parallel between black and white; however, many people overlook the area of gray that most of us live in. In conclusion of this research project, I've gained a much stronger grasp on what an ethical decision entails, factors to consider, three principles to follow when making a decision with ethical magnitude, and the fate of companies that do not establish ethical standards. Furthermore, the time and effort it may take to make a tough ethical decision far outweighs the time, effort, and consequence of making the wrong decision.



Economics

90 Room 174 10:40-11:25 Panel 1

Ray A Tannheimer

Nathan Anecone

Robert Kaulfuss (Faculty Sponsor)

Department of Economics, Middlesex Community College, Bedford, MA, 01730

How the Neurobiological Perspective Will Restructure Economic Thinking

How do we reconcile the gulf between the model of human behavior used in economics and the sciences of human behavior? A guiding concept in traditional economic theory is that of the rational agent, an emotionless being with perfect judgment and knowledge of its economic conditions. This study examines the validity of this assumption against scientific findings on the nature of human behavior. This paper refutes the notion of perfect rationality in traditional economic theory, and suggests replacement hypotheses based on evidence from the cognitive, behavioral, and evolutionary sciences. Using these perspectives, the paper advances the notions of limited rationality, cognitive biases, and incomplete information. These concepts are key elements of belief formation and decision making; processes at the heart of economic behavior. The research method used is a synthesis of a wide selection of literature, combining research from pioneering scientists and speculations from top economists about flaws in the current paradigm. We conclude that from an accurately formulated theory of human nature, we can best frame our analyses of economic behavior and institutions. The discipline of the social sciences shall deepen its understanding of how people react to the realities of economic life by delving into the workings of the brain and incorporating the cognitive processes which inform all persons. Once integrated with neurobiology, economics and the social sciences will no longer be "hermetic", i.e. sealed off from the rest of our understanding of how the world works.



91 Room 174 10:40-11:25 Panel 1

William Bett

Benjamin Lichtenstein (Faculty Sponsor)

Department of Management, UMass Boston, Boston, MA, 02125

GDP and Well-Being: An Examination of the Economy of Botswana

A growing stream of research is exploring the connection - or lack thereof - between a country's GDP growth and its population's well-being. A good way to study this connection is to examine the role that commodities play in a developing nation's economy and its subsequent increase or decrease in well-being as measured by the HDI and HPI. According to researchers, it is far easier to see how increases in GDP don't necessarily translate into societal well-being when the economy is limited to a small section of items, namely commodities. To answer this question I draw upon publicly available data from the heavily commodity dependent economy of Botswana. Based upon the statistics and rankings provided, it is evident that despite a general increase in the GDP it does not translate into improved well-being for its people. Admittedly, it is difficult to determine a clear connection based off of statistics alone, but the analysis does suggest that a rise in GDP does not necessarily cause an increase in well-being. Despite this study being limited to a developing nation, it has far broader implications for the well-being of all nations as economists, politicians, and international advisers alike seek to figure out what really leads to an increase in well-being.



92 Room 174 2:15-3:00 Panel 4

Santi Dewa Ayu

Peter Spiegler (Faculty Sponsor)

Department of Economics, UMass Boston, Boston, MA, 02125

Healthy Savings: The Positive Return on Investment of Comprehensive Health Education

Mandatory funding for health education is not provided by the state of Massachusetts. Many students within the public school system are not exposed to information that could empower them to make healthy decisions. By investing in human capital, specifically educational equity in the form of sustainable preventative health education, the government would save the state both quantifiable and unquantifiable future funds. The methodology behind educational institutions should be a constant cycle of results and reevaluation used to assess their effectiveness. Peer-to-peer education models are remarkably beneficial in building an integral sense of community and providing positive role models. Although an investment in education is beyond quantifiable, the use of economic models provides quantifiable data that supports the need for comprehensive health education. Established in 2003, Peer Health Exchange is a nonprofit organization that uses a peer-to-peer system to work towards its mission. "PHE gives teenagers the knowledge and skills they need to make healthy decisions. We do this by training college students to teach a comprehensive health curriculum in public high schools that lack health education." After examining the pre and posttest data collected from PHE schools in MA and NY it is apparent that students are retaining and utilizing the information and resources that they receive from the curriculum. The data augments a cost benefit analysis that includes the social and monetary consequences of failing to efficiently utilize resources. By realizing the vivid connection between health and educational achievement the community can work to help close the education gap.



93 Room 174 2:15-3:00 Panel 4

Bethany Doane

Brendan Edmonds

Brendan Lynch

Moonsu Han (Faculty Sponsor)

Department of Economics, North Shore Community College, Danvers, MA,
01923

Current Conditions- Diagnosing the Economy

The economy of the US, and with it the global economy, is in turmoil. Using leading, co-incident, and lagging indicators, we will analyze the present economic environment and employ our findings to evaluate the direction of the US economy. Our selected format is a mock round-table of a Federal Reserve Bank Board of Governors meeting. Utilizing the forward looking tools of the Federal Open Market Committee, we will each bring investigated ideas on what is working and what is not working. To this end we will discuss points and look at trends to defend our arguments. Supporting our opinions with research, the goal of this dynamic dialog is to make assumptions independently, choose a design and agree on a diagnosis that can produce growth in the economy.



94 Room 165 1:20-2:05 Panel 3

Thomas Tedone

David Smailes (Faculty Sponsor)

Department of Political Science, Westfield State College, Westfield, MA,
01086

The First GI Bill: Education and Human Capital

The objective of this research paper is to clarify a connection between education subsidies and higher education enrollment. In order to do a proper analysis, this paper explores recent and past research related to the topic of human capital. To support the paper, the case study to be examined is the "Servicemen's Readjustment Act of 1944," otherwise known as the GI Bill, which was granted to World War II veterans. Looking at the GI Bill and its effects through education subsidies on enrollment statistics, policy makers may be able to see two things. The first is the effect education has on human capital formation. The second is whether public policy through education subsidies to encourage human capital formulation, in this case the effectiveness of the GI Bill, is actually effective. This paper utilizes a large microdata set in an attempt to answer these questions.



Education

95 Room 165 1:20-2:05 Panel 3

Marta Escriu-Sune

Marilyne Stains (Faculty Sponsor)

Department of Chemistry, UMass Boston, Boston, MA, 02125

Exploring the Patterns of Misconceptions Related to the Particulate Nature of Matter in Students from Middle School to College

Research in science education has revealed that students have preconceived notions of the natural world that differ from those derived by currently accepted scientific theories. These misconceptions lay an obstacle to the assimilation of new information. For this reason, recognizing and understanding misconceptions and their origins is crucial in order to adjust teaching of the class material accordingly. The goal of this research is to explore the misconceptions that students have regarding the particulate nature of matter and more specifically students' understanding of gases and their behavior at the particulate level. A survey –called the Structure And Motion of Matter (SAMM)- was developed asking students to explain how perfume goes from one corner of a room to the next in different contexts. This survey was collected from students in middle school, high school and college (N=505 students) in different science classes. We first conducted a thorough review of the literature in order to build a list of already published misconceptions about the particulate nature of matter. We then analyzed our survey to indentify misconceptions that were not present in that list. For example, we found that students think that the amount of particles of perfume and/or air varies with temperature (e.g. hot room v. cold room). Some students also think that certain atoms in a molecule affect the molecule's movement (e.g. carbon or hydrogen). Students tend to think of particles as macroscopic objects and attribute them macroscopic properties (e.g. if the particle is heavy it sinks). Once we have a final list of unpublished misconceptions, we will further characterize them through interviews (15 students). The data will then be analyzed to find patterns among the different grades (e.g. middle school, high school, and college) to characterize the evolution of students' ideas from one grade to the next. The pattern of misconceptions between students in chemistry, physics, and biology will also be explored.



96 Room 801 1:20-2:05 Panel 3

Eric Frary

Emily Todd (Faculty Sponsor)

Department of English, Westfield State College, Westfield, MA, 01086

Environmental Education: A Solution to Networked Crises

This presentation argues that the United States is currently faced with a set of high-profile problems, which, while they may appear unrelated, share a common solution. First, approximately one-third of students in America who enter high school will not make it to graduation, the majority citing “boredom” and lack of “relevancy to real life” as their reasons for leaving. Second, globally, we are faced with a plethora of environmental issues quickly elevating to a dangerous level, which threaten our planet’s health and our health. This presentation proposes that a solution to these imminent catastrophes is to utilize environmental education, which will both educate students about environmental problems and their solutions, and will keep students motivated to stay in school. This teaching method uses hands-on outdoor and indoor experiences to inspire students and educate them about the Earth, and empowers students to work together and carry out plans that help lessen environmental degradation. Environmental education utilizes inquiry-based explorations for learning, moving beyond traditional “textbook and lecture” lessons about the environment. It provides student-centered, constructivist learning, which inspires, enriches, and motivates. It is this relevant, student-centered learning that will both keep students’ interest through graduation, and will help fill our world with responsible citizens that are more environmentally literate and prepared to take action.



97 Room 165 1:20-2:05 Panel 3

Corinne Glennie

David Raker (Faculty Sponsor)

Department of Education, Westfield State College, Westfield, MA, 01086

Public Schools and the Waldorf Philosophy: Two Contrasting Systems and Their Potential for Unification

As standardized testing and workbook assignments in public schools have increased, many parents and educators committed to public school education have clamored for change. Alternative approaches such as those found in the Waldorf schools, based on the philosophies developed by Rudolf Steiner in the early 1900's, are being considered. Waldorf schools differ from public schools not only in educational philosophies, but also in different strategies they apply to daily schedules and testing and evaluations techniques. This presentation will highlight the positives of the two educational systems. In addition, it will offer ideas on how, using the best aspects of both, to create a system that will benefit the wide variety of students in public schools.



98 Room 163 3:10-3:55 Panel 5

Benjamin Owusu-Ansah

Susan McPherson (Faculty Sponsor)

Department of English, Quinsigamond Community College, Worcester, MA,
01606

Prayer and Science

The last two decades have shown a stronger convergence between science and the practice of allopathic medicine, complementary medicine, and the spiritual wisdom of ancient and modern faiths. Biologists hold a central dogma - the belief that life is controlled by genes; therefore, one, essentially, is held hostage by his or her genes. Through the works of scientists like Dr. Masura Emoto, Dr. Bruce H. Lipton, Dr. Robert Lanza, and others we have now come to know that life is equally affected by the environment and other external "energies." Dr. Emoto's work shows how words, connected to emotions, can affect the crystal formation of water, potentially impacting our lives since approximately two-thirds of our bodies is made up of water. The placebo effect, as outlined in Dr. Lipton's book *The Biology of Belief* shows how one's belief can impact his or her well being and that thought "energy" can activate or inhibit the cell's function-producing proteins via the mechanics of constructive interference. Finally, the first principle of Biocentrism, according to Dr. Lanza, is what we perceive as reality is a process that involves our consciousness. Words, beliefs, thoughts, consciousness, and touch go a long way to affect one's biology, character, and life as a whole. One very important phenomenon that is capable of generating or implementing all these external factors listed above is prayer. My presentation will explore the impact of prayer on life, and the scientific explanations for the impact.



Electrical Engineering

99 Room 168 3:10-3:55 Panel 5

Stephan Adams

Dennis Goeckel (Faculty Sponsor)

Department of Electrical Engineering, UMass Amherst, Amherst, MA, 01003

Alternative Secrecy in Wireless Communication Networks

Almost as long as people have been studying how to send messages, they have also been trying to find ways to keep them secret. Cryptographers and code breakers have been in a perpetual arms race for thousands of years, struggling to develop and understand increasingly powerful encryption schemes. In 1945, an alternate approach to ensure the secret transfer of information was suggested by an electrical engineer named Claude Shannon. Conventional cyphers are designed to protect the content of a message under the assumption that eavesdroppers will not have enough processing power to decrypt the messages they intercept. Shannon proposed a stronger version of secrecy, one which would ensure that the message could never be cracked regardless of the computational resources available to the potential eavesdroppers. One method of achieving secrecy in the sense that Shannon described is to ensure that eavesdroppers cannot receive the same message as the intended receiver. Ideally messages are either impossible to be intercepted, or the eavesdroppers invariably only receive incomplete and possibly garbled versions of the original messages so as to make them indecipherable. The algorithm presented is based on Shannon's idea of perfect secrecy and ensures that a message can be transmitted between a source and a receiver in a wireless network, while ensuring that potential eavesdroppers are almost surely unable to intercept it. Given enough allies with the ability to receive and transmit data, this can be accomplished by exploiting spatial variation in the ability to receive messages due to interference effects inherent in wireless communications. The presented work describes how to make a strategic choice of jammers and proves how this choice can make it effectively impossible for all but a small set of intended recipients to receive a useful message.



100 Room 168 3:10-3:55 Panel 5

Brennan Burns

Robert Jackson (Faculty Sponsor)

Department of Electrical Engineering, UMass Amherst, Amherst, MA, 01003

Low Cost Dual-Polarized Surface Mount Active Antenna

Conventional phased array radars, which consist of a large array of small antennas utilized in a highly controlled manner, have many applications ranging from military to atmospheric research. Unfortunately, these radars are quite complex and cost many millions of dollars, making it very difficult for research groups to utilize them in their endeavors. In an effort to reduce the cost, a dual-polarized surface mount antenna has been designed specifically for low-cost manufacturing using readily available materials and standard manufacturing methods. The antenna, which consists of a patch antenna with a center frequency of 10GHz, was designed and simulated using HFSS 11, a three-dimensional electromagnetic field modeling and simulation tool, under Professor Robert W. Jackson of the University of Massachusetts Amherst Electrical and Computer Engineering Department. Two antenna designs were created, one a single patch antenna, the second a stacked patched antenna, and are being compared for their provided bandwidth relative to manufacturing complexity. These designs are being fabricated and will undergo thorough testing upon receipt. The results of the physical characterization will be presented at the conference.



101 Room 168 3:10-3:55 Panel 5

Armand Chery Jr

Xingwei Wang (Faculty Sponsor)

Department of Electrical Engineering, UMass Lowell, Lowell, MA, 01854

Novel Label Free Fiber Optic Biosensor

This abstract reports of a simple tapered fiber optic biosensor capable of detecting and distinguishing between various biological entities. The sensor is based on a single-mode optical fiber that is tapered to sub-micrometer dimensions, using a laser heating source to obtain the melting point temperatures of the optical fiber. Once the melting point of the optical fiber has been attained, a pulling force is applied on either end of the fiber to achieve a tapered waist of desired diameters. This tapering technique is performed to ensure the evanescent field, which will be used for sensing, achieves a penetration depth that is suitable for detecting the ambient biological artifacts. Coupled with the tapering technique, the addition of a Fabry Perot (FP) cavity will be implemented a few millimeters in radius from both transition areas of the tapered region, to enhance sensor sensitivity. Currently fabricated sensors have produced spectrums with desired fringes and minimal power loss. Replication of these results rely on the refinement of the fabrication process due to a small range of unsatisfactory results. Moving forward, ensuring factors of fabrication such as material choice of FP cavity, method of adhesion of FP cavity material, tapered waist diameter, and uniformity of transition regions, are optimal will solidify results that are suitable for immediate application and mass production of these biosensors.



English

102 Room 801 2:15-3:00 Panel 4

David Bartsche

Catherine Savini (Faculty Sponsor)

Department of English, Westfield State College, Westfield, MA, 01086

"Transformers 2": More Than Meets The Eye

"Transformers rock." Ask any male born in the last 25 years, and he will agree with this slogan. Why do Transformers rock? They are "sweet" cars that turn into giant fighting robots, and vice versa. They are bound up with the ultimate male escapist fantasy: tough guys, fast cars, an epic struggle between good and evil for the fate of the universe, all presented in a summer blockbuster movie. Taking in \$402,111,870 domestically, Michael Bay's "Transformers 2" evidently lived up to its promise to entertain young men. However, that's only half the story. This rhetorical analysis of the film produced by Dreamworks and Paramount uses an analytic framework borrowed from William Covino and his seminal essay, "Selling the Super Bowl." I argue that "Transformers 2" should be viewed as an advertising event and a chance to "move product" through subtle (or not so subtle) product placement. I find that The "Transformers" movie franchise is itself a multi-million dollar advertisement for a series of plastic toys made by Hasbro, a role inversion that complicates an easy read of the movie and begs larger, cultural questions.



103 Room 803 11:35-12:20 Panel 2

Meaghan Brennan

Beth Rothermel (Faculty Sponsor)

Department of English, Westfield State College, Westfield, MA, 01086

Facebook Me: A Micro-Ethnography on the Effects of Social Networking on Identity, Communication, and Perceptions of Friendship

In this study, I am using ethnography, the exploration of culture through participant observation, to analyze the social networking site Facebook.com. Though Facebook isn't necessarily a culture in the traditional sense of the word, I would suggest that the intangibility of Facebook culture is extremely relevant within a modern society in which inter-personal relationships are growing less and less palpable with each technological advance. I am in the process of observing and having conversations with ten Westfield State College students of different ages, genders, and majors in the form of qualitative participant observation interviews. I have found the seven Facebook users who have participated so far to be extremely self-aware and quick to analyze and criticize their own use of the site. Not only have the participants focused on a wide variety of concerns, but I have also found that each participant uses Facebook very differently. Since Facebook gives its users the opportunity to project a self-defined persona onto a public forum, I am especially interested in the development of identity through social networking profiles. Other ideas that I am exploring through this project are how the presence and use of Facebook in young adult society may be affecting communication and expanding or changing definitions and perceptions of friendship. The final product, a micro-ethnography, is meant to capture the voices and views of the participants alongside the theories I draw from the observation process and to reflect the kind of self-criticism inherent to the field of ethnography.



104 Room 168 10:40-11:25 Panel 1

Elizabeth Brenton

Keja Valens (Faculty Sponsor)

Department of English, Salem State College, Salem , MA, 01970

Stereotyping Oscar Wao

This research project deals with the role that stereotypes play in ethnic literature, specifically the way that Dominicans are portrayed in Junot Diaz's *The Brief Wondrous Life of Oscar Wao*. By creating characters who embody typical Dominican male stereotypes, but who also possess elements of other stereotypes, Diaz shows us how futile stereotyping really is. Diaz accomplishes this by creating two Dominican characters who represent two different stereotypes, but who are also extremely similar in many ways, except for one major difference: their bodies. Oscar is grossly overweight, while Junior is handsome and muscular. I will argue that Diaz speaks to the judgmental nature of human beings as much as to the particular problems of ethnic stereotyping. Diaz's novel also deals with another set of predictive assumptions: the idea of curses and fulfilling one's fate. I will argue that even though by the end of the novel Oscar is able to break away from his stereotype and the stigma of being obese, he is not able to escape his own destiny and must embrace it in the end if he desires any hope of being happy.



105 Room 162 3:10-3:55 Panel 5

Kelly Broderick

Stephen Harris (Faculty Sponsor)

Department of English, UMass Amherst, Amherst, MA, 01003

Demonic Iconography in Anglo-Saxon Art and Literature

If you were asked to draw the Devil, you would most likely draw a figure with the basic shape of a man, but you would add a tail, horns, and claws at the ends of his fingers. This is a very popular construction of what a demon might look like. Although no one has ever seen the Devil we are all familiar with this imagery which we associate with demons and Satan. The practice of attributing horns and tails and other non-human features has been around for centuries, and was not excluded from the art and literature of the Anglo-Saxons. Physical characteristics of animals often appeared in their portrayals and descriptions of demonic figures. These qualities emphasized that an entity was powerful, superhuman, and often evil. Demons were drawn as having wings, claws, and long snouts, among other inhuman attributes. But why? What does such symbolism signify? This paper will journey into the minds of the Anglo-Saxons and use their language and illustrations to discover the cultural and historical significance behind this practice that is still in use today.



106 Room 801 2:15-3:00 Panel 4

Alan-Michael Chest

Glen Brewster (Faculty Sponsor)

Department of English, Westfield State College, Westfield, MA, 01086

The Exploitation of Hurricane Katrina Victims: Influence of the Media

This presentation focuses on the influence that the media had on the portrayal of Hurricane Katrina victims. My presentation raises the question: When is it considered unethical to take snapshots of a dead person drifting along a flooded section of a New Orleans street? My goal is to challenge the thinking process of my audience by raising issues about the media's role in American and global society. The presentation will also challenge the morality of our society. Was this picture intended to create sympathy for Hurricane Katrina victims, or to exploit Hurricane Katrina victims? My presentation will seek to answer that question.



107 Room 162 1:20-2:05 Panel 3

Megan Crotty

Matthew Brown (Faculty Sponsor)

Department of English, UMass Boston, Boston, MA, 02125

Flirtation and Aversion: Negotiating Identity in Salman Rushdie's The Satanic Verses

In Salman Rushdie's *The Satanic Verses*, the author deals with issues of identity and belonging, both in terms of national spaces and cultural attachments. For many characters in Rushdie's fiction, identity is negotiated by invoking the boundaries of what we might call traditional or normative constructions of gender and, in so doing, making them unstable or experimental. As is well known, Rushdie's experimentations with perceived social, cultural, and moral traditions create an eclectic, "hybrid" view of identity within the transnational climes of the the modern cosmopolitan city. Moreover, as I argue in this essay, these radical styles of "dissemination," as theorized by Homi K. Bhabha, and "flirtation," as articulated by Rebecca Walkowitz, come into focus through Rushdie's presentation of "un-translated" characters--those who have an aversion to linguistic experimentation--and those other characters who experiment with an ever-changing, eclectic, and hybrid sensibility, and who are variously averse and "flirtatious" in the process. Not only are normative constructions of gender re-formualted in the process but more totalizing ideas about cultural attachment are re-cast as well. Further, I will show how "flirtation," variously defined throughout the essay, allows for cosmopolitan spaces in the city to be remapped in a more inclusive yet tentative way.



108 Reading Room 11:35-12:20 Panel 2

Monet Crudup

Catherine Savini (Faculty Sponsor)

Department of English, Westfield State College, Westfield, MA, 01086

Rapper Lil' Wayne gains fans by bashing them.

Despite a recession in music sales and blatantly offensive lyrics, black rap artist Lil' Wayne has gained immense success with an audience of mostly white consumers. The following analysis demonstrates how Lil' Wayne establishes appeal and marketability through strong "ethos." Lil' Wayne first established ethos by gaining support in a smaller community of people with similar social values, vernacular, economic status and life experiences often related to race. Lil' Wayne's appeal eventually expanded to broader, unintended audiences. Through Grier, Brumbaugh and Thorton's concept of cross-over appeal, I will explain how Lil' Wayne's popularity became widespread. Cross-over consumption is understood as the appeal and acquisition of products by consumers outside of the deliberate audience. Through an analysis of artist collaborations and record sale patterns this paper will help to explain the effect of cross-over consumption. Additionally, this paper helps to theorize the gap between white consumers, black audiences and racially excluding lyrics, explaining how Lil' Wayne has gained success with consumers he bashes. This analysis of Lil' Wayne's surprising success will provide insight into the development of "black" music into a broader culture.



109 Room 808 10:40-11:25 Panel 1

Gina D'Allessandro

Susan McKenna (Faculty Sponsor)

Department of Commonwealth Honors College, UMass Amherst, Amherst, MA, 01003

"Your Moment of Geek:" A Textual Analysis of The Rachel Maddow Show

Broadcast journalism is one area of contemporary society where stereotypical gender roles are still enforced within the workplace. Rachel Maddow, the first out lesbian to host a news show, defies heteronormative gender roles on her program and shoulders the burden of representation for lesbians and the greater LGBTQ community. Analysis of The Rachel Maddow Show, paired with support from sociologists, gender theorists and media specialists, suggests that Maddow transcends stereotypes typical of male and female journalists by dressing in neutral-toned suits, sitting behind a desk and being filmed at eye-level. Conversely, Maddow is also constrained by the hegemony of the mainstream media in that she must have stylized hair, wear feminized clothing and apply makeup in order to appear "attractive." Additional news programs have also been analyzed to compare and contrast Maddow with contemporary journalists, such as Jon Stewart, Keith Olbermann and Katie Couric, in order to argue that Maddow's persona on The Rachel Maddow Show is a blend of several popular performances. The results gleaned from my study bring forward new ways that the representation of male and female journalists in the media may be viewed, analyzed and discussed. Set against a backdrop of binary gender roles, Maddow stands out as the exception because she reads as neither masculine nor feminine on television, defying our culture's dominant notion of heteronormativity. Therefore, The Rachel Maddow Show has opened up a new discourse in the mainstream media where issues such as media representation, lesbian sexualities and heteronormativity may be analyzed.



110 Room 162 1:20-2:05 Panel 3

Madison Dennis

Lynn Parker (Faculty Sponsor)

Department of English, Framingham State College, Framingham, MA, 01702

Domestic Horror: The Establishment of the Gothic in Shirley Jackson's Works

Throughout the past sixty years, Shirley Jackson has, unfortunately, been largely ignored in the literary world, and is only now gaining recognition and respect among critics. Best known for her short story, "The Lottery," Jackson writes fiction based on the horror of everyday life and the possibility of terror in the domestic setting. Her focus on women and children - who are dominated, isolated, and oppressed by a patriarchal, class-oriented society - suggests that real terror takes place where one would least expect it: at home and within the family. This "horror" primarily takes the form of the psychological deterioration and descent into madness of Jackson's protagonists. These characters are pressured to conform to strict (and often unreasonable) societal and familial standards while desperately trying to establish independence and control over their own lives, a conflict played out during the first half of the twentieth century in rural New England towns. This study examines Jackson's novels, short stories, and domestic narratives, as well as biographies of the author, in order to explore the historical and cultural contexts of her works. It studies the concept of domestic horror, primarily focusing on the "house" texts, and considers how this horror is used to develop and define a "new" Gothic novel, in twentieth century New England.



111 Room 172 10:40-11:25 Panel 1

Bronwen Evans

Elizabeth Fay (Faculty Sponsor)

Department of English, UMass Boston, Boston, MA, 02125

Darcy Won't Dance: An Analysis of Dance in Jane Austen's Pride and Prejudice (1813) and Its Twenty-First Century Filmic Adaptations

Pride and Prejudice (1813), the most widely read of Jane Austen's six published novels, continues to captivate both the general public and international film industry almost two hundred years after its first publication. The infatuation with this beloved text, whose coming of age marriage plot investigates class and gender relations in light of the stiff marriage market of Regency England, is so great that in the last decade at least four full-length films based on the novel have been produced. What's more, once a year in Bath, England, The Jane Austen Centre hosts a Regency Costumed Ball that it considers "a wonderful opportunity to dress up and dance just like Lizzie and Jane at the Netherfield Ball! (<http://www.janeausten.co.uk/festival/festival.ihtml?id=8>), making sure that fun with period costumes is not limited to professional actors. Although twenty-first century Pride and Prejudice fanatics play with Regency dance (that is, treat it as a novelty, hobby, or form of escape), dance was not (always) all fun and games during Austen's lifetime (Louise Penner). By investigating Darcy's refusal to dance at the Meryton ball and the progression of Darcy and Elizabeth Bennet's relationship as it is portrayed through dance, this paper will investigate how films today, including Gurinder Chadha's *Bride and Prejudice* and Sharon Maguire's *Bridget Jones's Diary*, transition dance from page to screen, thus exploring the ways in which directors make dance, which was very much at the center of Regency England's marriage market and Austen's plot, pertinent to the twenty-first century. This paper will suggest that while dance as it was structured and valued in Regency England is not pertinent to the twenty-first century (save as a novelty), there are many forms of dance both explicitly and implicitly portrayed in the most recent adaptations of the novel that are essential to today's less formal marriage market.



112 Room 172 10:40-11:25 Panel 1

Caitlin Farmer

Glen Brewster (Faculty Sponsor)

Department of English, Westfield State College, Westfield, MA, 01086

Elizabethan Socio-Political Appearance in the Lives of Elizabeth I and Sir Walter Raleigh and Their Poetry

Elizabeth I (1533-1603) was a powerful figure who maintained a significant role in late sixteenth and early seventeenth century European society. Her ability to project her image as a political and religious symbol in England allowed Elizabeth's rule to withstand the forces trying to undermine her. Elizabeth promoted comparison between herself and the Virgin Mary for religious resonance; and she also exploited her own status as a Virgin Queen to show her desirability as a potential marriage partner for political bargaining with other European male monarchs. Literary historian Louis Montrose explores these symbolic registers in his article "'A Midsummer Night's Dream' and the Shaping Fantasies of Elizabethan Culture: Gender, Power, Form." My essay analyzes elements of these symbolic aspects in the poetry of Elizabeth herself and of one of her most influential courtiers, Sir Walter Raleigh. I show that both poets struggle with the human cost of living as political symbols while also manipulating public image to control power in a tumultuous political climate.



113 Room 811 10:40-11:25 Panel 1

Kathryn Hakala

Robert Dow (Faculty Sponsor)

Department of Commonwealth Honors College, UMass Amherst, Amherst, MA, 01003

The Unsuspecting Feminist: Accidental Feminist Discourse

The pattern of accidental feminist discourse within literature is a trend that ultimately affirms the inseparable nature of feminism with the powerful woman's experience. Feminism is a term that describes the movement concerning the liberation of women from discrimination based on gender, with the ultimate goal of self-determination. However, feminism is a label that today is mired by its ephemeral and at times contradictory nature. Hester Prynne from Nathaniel Hawthorne's *The Scarlet Letter*, Moll Flanders from Daniel Defoe's *Moll Flanders*, and Xuela Richardson from Jamaica Kincaid's *The Autobiography of My Mother* are literary figures that serve as emblems of this feminist self-determination, though they do not identify as such. These figures, who help situate the indefinable face of feminism, can be collected under a term I identify as the unsuspecting feminist, or one who lives out the foundations of the feminist doctrine without being conscious, aware, or purposely doing so. I will argue that the unsuspecting feminists I address are productions of positive imaging for the recontextualization of feminist progress. I will analyze the key factors informing the accidentally feminist positions of Hester, Moll, and Xuela including sexuality, reproductive rights, the community of women, economic self sufficiency, cross dressing, sewing, issues of morality, and activist campaigns. I will incorporate these figures and their connections to historical movements as established in the works of Gwyn Kirk in *Women's Lives: Multicultural Perspectives*, explore Ellen R. Klein's argument against the feminist movement in *Undressing Feminism*, and Nicholas Kristof and Sheryl Wudunn's global agenda for turning women's oppression into opportunity in their book, *Half the Sky*. Through this study, I will prove that Hester, Moll, and Xuela give birth to a new consciousness of womanhood outside categorization, unbounded by historical context. Their literary imprint serves as a contemporary signifier that tools for change, while polemical and factionalized, might be most effective in their most simplistic and therefore unconscious or unsuspecting forms. Their self-vitalization nurtures the worlds they encounter, and thus rectifies a form of feminism that is unifying and life-affirming.



114 Room 168 10:40-11:25 Panel 1

Trina Johnson

Scott Maisano (Faculty Sponsor)

Department of English, UMass Boston, Boston, MA, 02125

Zen Arden: Disorienting the Orient in Kenneth Branagh's As You Like It

Kenneth Branagh's 2006 film *As You Like It* sets Shakespeare's pastoral comedy in 19th-century Japan. For its perceived "Orientalizing" of Shakespeare, Branagh's critics have deemed his film not only culturally insensitive but also too far removed from the original Shakespearean source to be considered enlightening. My paper reveals that by setting his film in Japan, Branagh in fact offers a provocative new solution to a long-standing question in Shakespeare studies: where is Arden located? Branagh challenges centuries of scholarly claims and assumptions, my paper argues, by enlightening his audience with an unthought-of truth that reveals to us an Arden we have never known, a Zen Arden. Drawing on both Renaissance theories of atomism and contemporary theories of Buddhism, I suggest that Arden--for Shakespeare then as well as for Branagh now--has never existed as a physical place but always as a unique (and difficult to attain) state of mind.



115 Room 168 1:20-2:05 Panel 3

Sandra Kwawu

Aubin Tyler (Faculty Sponsor)

Department of English, Westfield State College, Westfield, MA, 01086

Let's Talk About Depression in College

Many college students are at risk for depression. The difficulties they face include making the transition from childhood to adulthood, new peer pressures and relationships with family members and boyfriends or girlfriends. Based on 2009 statistics from the National Institute of Mental Health, 26.2 percent of Americans aged 18 and older suffer from a diagnosable mental disorder in any given year. Because depression is so common in this group, open dialogue on campus can help stem the tide by informing students about the causes and effects of depression. College advising centers have professionals who can help students experiencing the symptoms of depression, which include anxiety, sadness, loss of energy, feelings of hopelessness, guilt and worthlessness. The Internet is also a valuable resource, as are hotlines. People don't like to talk about depression, but open discussion about it can reduce the stigma. Increasing knowledge can prevent suffering and even save lives.



116 Room 811 11:35-12:20 Panel 2

Matthew McNulty

Robert Dow (Faculty Sponsor)

Department of Commonwealth Honors College, UMass Amherst, Amherst, MA, 01003

Oppression through Language in Literature

Language is the primary access to power, and should a person be denied access to literacy, they shall inevitably be denied access to power. This connection between language and oppression is a theme that manifests itself throughout modern English literature, for language can be used as a tool of oppression, and through literature, one can see how language expresses and demonstrates a kind of linguistic oppression, wherein the speaker is confined and controlled by their knowledge of a language, or lack thereof. As Ralph Waldo Emerson wrote in his essay "The American Scholar", "If it were only for a vocabulary, the scholar would be covetous of action. Life is our dictionary. Years are well spent in country labors; in town... in frank intercourse with many men and women; in science; in art; to the one end of mastering in all their facts a language by which to illustrate and embody our perceptions. I learn immediately from any speaker how much he has already lived, through the poverty or the splendor of his speech. This is the way to learn grammar. Colleges and books only copy the language which the field and the work-yard made" (Emerson 58). With this quote in mind, one can better understand the inherent connection between a character's language and the world around them. Like Emerson, a perceptive reader must recognize the importance of each character's language, because we as readers can further realize a character through their use of language.



117 Room 808 1:20-2:05 Panel 3

Sarah Pease

Robert Dow (Faculty Sponsor)

Department of Commonwealth Honors College, UMass Amherst, Amherst, MA, 01003

The Social Sacrifice of Humanity

Human society places value on wealth, power, and prestige. While striving for success, man is separated from the qualities which define his humanity. Our innate ability to reason gives us the opportunity to make choices, and our unique capacity for introspection allows us to define morals and values, and judge our decisions. In his essay entitled "The Economic and Philosophic Manuscripts of 1844", Karl Marx refers to these human capabilities as the species-being. He proposes that modern society separates man from his species-being through the quest for property. In his essay "Class, Status, Party," sociologist Max Weber finds three dimensions of stratification; property, prestige, and power, which cause man to lose sight of his consciousness. Essays from Ralph Waldo Emerson's Collected Works and Henry David Thoreau's novel Walden express similar sentiments. While Marx and Weber outline institutions and expectations in society, Emerson and Thoreau discuss humanity in regards to the interaction between the individual and society. Using these ideals, I will investigate Nathaniel Hawthorne's novel The Scarlet Letter, Mark Twain's novel The Adventures of Huckleberry Finn, Jamaica Kincaid's novel The Autobiography of my mother, Ken Kesey's novel One Flew over the Cuckoo's Nest, and Joseph Heller's Novel Catch-22. Each novel discusses the necessity of independence, the physical and emotional journey of morality, and the eventual reclamation of individuality. Through these novels I will explore societal values in relation to individual values, the perceived importance of conformity, the effects of individual inadequacy, and the re-establishment of individual humanity.



118 Reading Room 1:20-2:05 Panel 3

Allison Donzanti, Ashley E Paon, Bryan Conlon, Daniel Guarracino, Dianne E Lund, Emily Bates, Katherine A Carr, Dawn C Kennedy, Mikaela Duprey, Steven E Dowling, Shaina Haber, Sabrina Savinski, Venutra R Dennis, Alyson Richards, Alexander Phillips (Faculty Sponsor)

Department of Commonwealth Honors College, UMass Amherst, Amherst, MA, 01003

A Custom-Tailored Common Reading Program for Honors Students at UMass Amherst

Students enrolled in Commonwealth Honors College have been participating in a common reading program of some sort since 2003. Students enrolled in the capstone course “Honors Seminar Scholars” have sought to design a new common reading program that will most effectively promote peer interaction, intellectual curiosity, and be well received by the honors college’s students, faculty, and administration. Initial review of literature and best practices informed a hypothetical program design that was then tested using several methods including survey, interview, and focus groups. The initial hypothetical program was then refined and a report produced indicating the likelihood of success for the program if it were employed.



119 Room 162 10:40-11:25 Panel 1

Brandon Wieber

Stephanie Young (Faculty Sponsor)

Department of English, Salem State College, Salem , MA, 01970

Narrative, Inquiry and Existential Crisis in Kafka's The Trial

In Thomas Kavanagh's essay entitled "Kafka's The Trial: The Semiotics of the Absurd" he says that because of its "narrative form, the reader's relationship to [The Trial] is, at one degree removed, exactly that of the central character's." This relationship gives the reader a glance into K.'s experience. We are with him throughout his story and are subject to his thoughts, to Kafka's restrictive narrative form, and to the limited and absurd world of K. Hence, this essay examines how Franz Kafka's use of inquiry in his novel The Trial (1914) moves the narrative forward as it examines the existential crisis from which the protagonist Joseph K. suffers. I discuss how K. searches for meaning at every turn from the "one morning" when he suddenly finds himself questioning his existence, to his trial where K. asks relentlessly: "Would he find the path that led to a favorable end? Would he survive?" Thus, K.'s attempt to understand his reality leads him on this inquisitive journey which only continues to build on itself. Offering no source of solace his inquiries only lead to others to create "a choreography which knows no end." By the conclusion of the novel it appears that K. accepts his meaningless existence because he has followed his inquiries as far as he can, resolving that his quest is fruitless. Yet in K.'s final moments an endless dance of questions float through his mind, showing that K.'s quest for meaning may take him to the limits of his consciousness and existential reality.



English Literature

120 Room 162 11:35-12:20 Panel 2

Ana-Maria Bell

Robert Darst (Faculty Sponsor)

Department of History, UMass Dartmouth, N. Dartmouth, MA, 02747-2300

The Collusion of Patriarchy and Caste in The God of Small Things

In *The God of Small Things*, Arundhati Roy paints a vivid and terrible picture of the demoralizing consequences of living beneath rigid systems of caste and patriarchy. At the center of the story lies a transgression made by two symbols of these different subjugations: Ammu, a divorcee, and Velutha, a Paravan. Yet Roy's depiction does not make clear delineations between oppressions of caste and oppressions of gender, but rather examines the collusions between caste and patriarchal domination. Focusing on the character of Velutha, who as a self-reliant person offers a counterpart to cultural strictures, my paper will explore the historical precedents and social expectations –represented in the story by those people and institutions who uphold patriarchal ideologies– that have constructed Velutha's location within the patriarchal system. I will examine the nature, circumstances, and social location of his transgressions to argue that Velutha is marginalized not only for his caste, but also for his failure to conform to patriarchal expectations.



121 Room 162 3:10-3:55 Panel 5

Katelyn Christopher

Bernard Horn (Faculty Sponsor)

Department of English, Framingham State College, Framingham, MA, 01702

On Human Relationships as Depicted by Tolstoy's Anna Karenina

It is a sad truth, but it seems as though human beings will never fully understand one another, regardless of how much love they may feel toward one another. All the characters and their thought processes in Leo Tolstoy's Anna Karenina are given ample time to be observed and analyzed. The reader becomes well-saturated in the characters' inner minds, and it seems to me that Tolstoy was trying to say that, though we may try as we might, thoughts and emotions will never be completely understood by those around us. I wish to take a philosophical approach toward the subtle emotional strife between the characters in this novel, with a special look at Sartre's existentialism and Epicurean hedonism. Language simply is not a perfect representation of what human beings, the social beings that we are, actually think and feel. Much gets lost in translation when going from what we see in our own minds to how we convey these brain waves to our loved ones. The characters Anna, Vronsky, Karenin, and Dolly are all fascinating examples of this tragedy of reality, both in themselves as well as what they think about others. Taking a look at each of these personalities in turn, one can see how they fail to communicate properly their own feelings, and, perhaps, learn from their mistakes. One indication of characters emotional discord is how they react to children. Whenever Tolstoy refers to the children within the novel, he has his characters behave in odd, jarring ways, perhaps not as heroic as the reader would hope. Understanding begins at a young age, after all, and whenever Serezha, Annie, or Dolly's children are the focus, it seems as though Tolstoy is red-flagging some negative impulse in the adults who tend for and watch over them. In a sentence, I would like to explore the reasons as to why the characters fail to connect on an emotional level, even though each is so consumed by his or her own emotions.



122 Room 162 11:35-12:20 Panel 2

Shannon Cocci

Robert Darst (Faculty Sponsor)

Department of History, UMass Dartmouth, N. Dartmouth, MA, 02747-2300

The Effect of Imperialism on the Imperialist

Many novels and history anthologies talk about American and European Imperialism from those perspectives. Students learn about the effects that such imperialism had on the colonized Africa. So rarely do we read about the opposite effect-how Africa affected the Americans or Europeans who went there to colonize and enforce their beliefs on natives. Barbara Kingsolver offers readers both perspectives in her novel *The Poisonwood Bible*. She shows the effects of the colonizers on Africa through the political upheaval that the Price family faces while in the Congo. Also, through the narratives of the five Price women, readers see the effect that colonization has on them. Africa effects them in more ways than they ever thought possible. I am interested in exploring this idea further by looking at the way the Price women are influenced by their experiences in Africa both individually, and as a family. The influence starts while they are in the Congo with their patriarch, Nathan Price. It continues long after they have left the Congo, and for two of the Price women, after they've left Africa completely. Their experiences never leave them, showing the effect that the colonized countries can have on the people who attempt to colonize them in the first place.



123 Room 162 1:20-2:05 Panel 3

Molly Coyle

Elizabeth Starr (Faculty Sponsor)

Department of English, Westfield State College, Westfield, MA, 01086

A Feminist View of Two Plays by Oscar Wilde

Oscar Wilde is best known for his wit and humor, not for his feminism. One cause of this is the fact that British literature anthologies usually include “The Importance of Being Earnest” as the play representative of Wilde’s work. In this paper, I argue that the female characters in two of Wilde’s less widely read plays, “Lady Windermere’s Fan” and “An Ideal Husband,” better represent his interest in feminist ideas. My project examines daring and dynamic female characters who challenge middle-class ideals for Victorian women in these two plays. I also draw on the work of many critics such as Mary Poovey, Susie Steinbach, Michael Booth and Keri Powell. In this essay, I make the case that the range of women Wilde uses in his plays critiques stereotypes of the period. I make the argument that Wilde is a feminist with the hope that “Lady Windermere’s Fan” and “An Ideal Husband” will come to be seen as more representative of Wilde’s progressive thinking about women’s roles in society.



124 Room 172 10:40-11:25 Panel 1

Tracy Finn

Diana Archibald (Faculty Sponsor)

Department of English, UMass Lowell, Lowell, MA, 01854

Until Death Did Them Part

Vows of marriage have clearly weakened in meaning over the past two hundred years. In Victorian England, however, they strictly meant forever, even if one partner was completely insane. In Charlotte Brontë's *Jane Eyre*, Edward Rochester chose to lock his mad wife in his attic for ten years while he traveled the world and spent time with other women. Although one may feel sorry for a man married to a madwoman, his action of confining Bertha was nevertheless cruel and inhuman. Many Victorian readers would not have approved nor sympathized with this hero. Historical documents show that humane asylums already existed at the time that the novel was meant to take place, providing proof Rochester had the option of placing his wife in an institution. Furthermore, the laws and regulations of marriage and divorce did not provide a feasible option to separate, so Rochester's attempt at bigamy would have appalled the Victorian reader. Analyzing his character as a whole to reveal his violent nature and need for patriarchal power towards women would only further encourage a reader to reject his action of constraining his wife. A vow of marriage during the Victorian period truly meant "until death do us part."



125 Room 162 3:10-3:55 Panel 5

Hannah Gunnell

Mary Lynn Saul (Faculty Sponsor)

Department of English, Worcester State College, Worcester, MA, 01602

Power and the Sin of Lust in Fourteenth Century Literature: Hannah M. Gunnell (Dr. MaryLynn Saul), Department of Languages and Literature, Worcester State College, Worcester, MA 01602

One can neither fully understand nor appreciate works of medieval literature without also considering the philosophical and theological traditions on which they are grounded. An important facet of medieval theology which manifests itself frequently in the literature of the times is the query into the nature of sin, particularly the Seven Deadly Sins. This paper investigates just one of the Seven Deadly Sins - lust - and its counterpart - love - within several fourteenth century texts, bearing in mind that medieval notions of lust differ from modern ones. For the medieval mind, lust is simply that which lacks love. The paper posits that lust and love reveal themselves in the power dynamics between spouses or lovers represented in many fourteenth century texts. The distribution of power within a certain character's relationship also mirrors how that individual interacts with the rest of society and even the divine. In order to delve into this notion, the paper examines Geoffrey Chaucer's "The Wife of Bath's Tale," and "The Clerk's Tale," and Julian of Norwich's "Revelations of Divine Love." Since existing scholarly research on the subject is sparse, the bulk of the paper's argument relies on evidence within the primary texts, although several germane secondary sources are used, as well. Finally, the paper suggests that a more extensive study of the Seven Deadly Sins and their role within medieval society and literature would enrich the field of medieval studies.



126 Room 162 10:40-11:25 Panel 1

Matthew Litchfield

Shari Evans (Faculty Sponsor)

Department of English, UMass Dartmouth, N. Dartmouth, MA, 02747-2300

Propitiatory Enthymemes

An enthymeme is an ancient rhetorical form which charges its argument with emotional subtext and value-laden dichotomies that not only present a claim but a firm stance. This essay will begin by exploring how Professor Jeffrey Walker arrives at this definition through analysis of three ancient Greek philosophers in his essay "A Theory of Enthymeme." The essay will then travel into an analysis of "Letter from Birmingham Jail" by Dr. King, Jr., as well as Socrates' defense speech in Plato's *Apology* and one of the major defense speeches made by the Apostle Paul, recorded in the book of *Acts*. These three writings will be used to develop a theory for a subcategory of enthymemes – propitiatory enthymemes. A propitiatory enthymeme is one that not only generates a resolute defense for a stance, but also cleverly displaces fury of detractors from the theory onto the speaker. This way, detractors fixate on silencing, to the point of death, the speaker, and the mission is unwittingly permitted to carry on. The paper will then finish by analyzing how Toni Morrison uses and changes this idea of propitiatory enthymemes in her novel *Beloved*, particularly through the character of Sethe.



127 Room 811 1:20-2:05 Panel 3

Stacey Perlman

Robert Dow (Faculty Sponsor)

Department of Commonwealth Honors College, UMass Amherst, Amherst, MA, 01003

The Scarcity of Individuality

Conformity allows human beings to coexist and cooperate within social groups but can become dangerous when individuals cease to consider the consequences of their actions and blindly follow the lead of another. Using psychological experiments, I will demonstrate the human tendency to conform. Solomon Asch's experiment, "Opinions and Social Pressure", will demonstrate the power group pressure poses over an individual while Stanley Milgram's experiment, "Behavioral Study of Obedience" will illustrate how someone perceived as an authoritative figure can easily influence others. Both studies will illuminate the rarity of an individual maintaining their independence against social pressure. Cass R. Sunstein discusses his theory of conformity and dissent in his work, *Why Societies Need Dissent*. Sunstein states that people who are confident are also influential and therefore have the ability to lead others in a different direction than they were originally pursuing. George Orwell's novel, *Animal Farm*, demonstrates the dangers of conformity and how easily a few moments of compliance can morph into a lifetime of submission. Orwell's work further reveals the backlash that often awaits non-conformists. Ken Kesey's novel, *One Flew Over the Cuckoo's Nest*, further establishes the importance of dissent in a society that ostracizes members who do not measure up to societal standards. Both Orwell and Kesey use their writing to illustrate the tools that achieve conformity, as well as the rarity and challenges of non-conformity. These messages are written with hope that readers will recognize these methods being imposed upon them in their own lives and fight against them.



128 Room 168 10:40-11:25 Panel 1

Brian Wilcox

Glen Brewster (Faculty Sponsor)

Department of English, Westfield State College, Westfield, MA, 01086

Roderigo versus Lispector: A Narrator's Modernist Interjections Into an Author's Post-Modern Novella

Brazilian author Clarice Lispector delves into a world where the social constructs are bound to the depiction of social actuality and in contrast to romantic desire for social change within the context of individual discovery. In Lispector's novel "The Hour of the Star," the landscape of depravity facing the newly developing working female class in Rio De Janeiro, during political turmoil and industrial change, is revealed through a downtrodden Brazilian laborer. Utilizing Lispector's writings, background, and critical interpretation, I unveil two contradictory writing techniques, personas, and perspectives represented by a narrator who champions the optimism of a modernist and a postmodern author who delivers the grim reality of life in an emerging democracy.



Environmental Studies

129 Room 168 4:05-4:50 Panel 6

Alyson Pitts

Anamarija Frankic (Faculty Sponsor)

Department of Environmental Studies, UMass Boston, Boston, MA, 02125

Rendezvous Creek: A Snapshot of a Salt Marsh

Barnstable Harbor, one of the oldest commercial harbors on Cape Cod, offers its residents and visitors many resources, both recreational and economic. Barnstable Harbor contributes to the town's environmental and economic vitality. In particular, the harbor contains a very sensitive and complex ecosystem, the Rendezvous Creek salt marsh, which lies west of the inner harbor. On behalf of a local non-government organization and advocacy group, The Friends of Barnstable Harbor's (FoBH) Environmental Committee, the author is preparing a report on existing environmental information and issues of the Rendezvous Creek salt marsh. This report will support the application process for FoBH to become the Stewards of Rendezvous Creek via the Department of Conservation and Recreation's Areas of Critical Environmental Concern program. The compilation of available environmental information will include ecology, soil, hydrology, invasive species, infrastructure, socio-cultural history, and landuse. Maps and photographs, both past and present, will be utilized to visually illustrate Rendezvous Creek. An interview with a resident who has lived his entire life on Rendezvous Creek will be included to illustrate how the marsh has evolved over time. The report will support coastal stewardship of the Rendezvous Creek area by providing a comprehensive understanding of its historic and current environmental state. The report will also identify gaps in knowledge and suggest necessary additional research of the area, as well as identify potential sustainable methods of management and conservation.



130 Room 172 4:05-4:50 Panel 6

Jacquelyn Vincent

Tim Parshall (Faculty Sponsor)

Department of Biology, Westfield State College, Westfield, MA, 01086

People, Pests, and Pathogens: Analyzing the Past and Future Forest of Westfield State College

The forests surrounding WSC have changed in their composition, distribution, and aesthetics as the college has developed. The purpose of this project was to analyze how the forests surrounding WSC have changed over time and the events that contributed to these changes. First, using literature and aerial photography, the land use history of Westfield and the change in vegetation over time was documented. In the mid 1800s, following the peak in agriculture, the campus area was devoid of forest. When construction for Westfield State College began in 1954, the forested area surrounding campus, including Juniper Park the town forest, was cleared. Ever since then, the college has encroached on the remaining forested areas to accommodate new residence halls and academic buildings. In addition to human impacts on the forest, the project documented current forest conditions in order to predict the possible effects of the hemlock woolly adelgid (HWA) infestation on future forest composition. Ortho imagery and a GPS were used to map the areas on campus that contained hemlock. It was found that approximately 27.25% of the forested area on campus contains hemlock. Using previous studies and original data collected from the study area, it was found that the species that would likely replace hemlock would be oak, maple, birch, and pine. Although gaps in the forest canopy created by hemlock mortality would likely be replaced by existing species, the structure, function, and composition of the forest would still be altered by HWA.



131 Room 168 4:05-4:50 Panel 6

Tawny Virgilio

David Orwig (Faculty Sponsor)

Department of Environmental Studies, Westfield State College, Westfield, MA, 01086

The Use of Mixed-Bead Resins to Determine the Impact of Two Invasive Insects on Throughfall Nitrogen Dynamics Under Eastern Hemlock (*Tsuga canadensis* L.)

Tawny R. Virgilio, Dr. David Orwig, and Heidi Lux Harvard Forest, Harvard University, Petersham, Massachusetts 01366, USA- Herbivores are important components of many ecosystems due to their ability to influence nutrient cycling and primary production through the deposition of frass, cadavers, and a change in leaf litter quality and quantity. This study utilized a new technique to examine how two invasive insects, feeding on the same host, influence throughfall nitrogen content. We examined eastern hemlock (*Tsuga canadensis* L.) saplings infested with hemlock woolly adelgid (HWA; *Adelges tsugae*), elongate hemlock scale (EHS; *Fiorinia externa*), both pests, or neither pest in a field experiment at the University of Rhode Island. Mixed-bead resin bags were placed underneath hemlocks with each of these pest treatments for 30 days and examined for ammonium and nitrate content. Results suggest that NH_4 capture under treatment trees did not differ significantly from ambient precipitation levels ($\sim 88 \mu\text{g NH}_4/\text{g resin}$) captured on resin bags suspended above ground at the site, suggesting that insects did not lead to significant inputs of NH_4 as predicted. Resin bags under treatment trees did capture significantly higher amounts ($P < 0.005$) of NO_3 ($73\text{-}88 \mu\text{g NO}_3/\text{g resin}$) than ambient levels in precipitation ($\sim 8 \mu\text{g NO}_3/\text{g resin}$), but there was no significant difference among infestation treatment. Several potential factors could have contributed to the lack of herbivore-related inputs observed in this project including: very wet summer months which may have leached out nutrients previous to our study, very low EHS population densities, and resin bag size which may have limited nutrient capture.



Finance

132 Room 174 3:10-3:55 Panel 5

David Klisiewicz

Ashwin Mehta (Faculty Sponsor)

Department of Accounting, UMass Lowell, Lowell, MA, 01854

The Office Recording. Where Your Music is Our Business.

At one point in their lives, everyone dreams about being their own boss. However, few people act upon this dream. As a business major at the University of Massachusetts at Lowell, I have taken it upon myself to begin the journey of realizing this dream. In the following thesis/business plan, I cover all of the components necessary to take into consideration prior to launching a successful business. The business will be a sound recording studio located in northeastern Massachusetts, an area with thousands of musicians and few recording studios. In an area where the supply of quality recording studios does not meet the demand being put forth by the number of artists, musicians of all types will find this recording studio attractive because our combination of quality, convenience, and affordability. After intensely evaluating the financial feasibility, market analysis, product feasibility, organizational feasibility, and along with creating a marketing strategy to outperform any local competitors, the conclusion is that this business opportunity is feasible and will be a profitable business.



133 Room 174 3:10-3:55 Panel 5

David Shay

Benjamin Lichtenstein (Faculty Sponsor)

Department of Management, UMass Boston, Boston, MA, 02125

Motorcycles in Massachusetts: an Introspective of Repair Industry

This study looks into what avenues and strategies bring success in the motorcycle repair industry in Massachusetts from the perspective of the business owners themselves. In the service sector of small and medium enterprises, keeping up with the 2010 downsizing economy takes a competitive spirit and other factors. There have been previous studies on small and medium sized service enterprises, but few with a specific scope on strategy and operations. Further, many of the articles on the motorcycle industry are about sales, but do not examine the service and repair sector. In order to find out what owners of service and repair shops are doing to remain competitive in this economy, we are interviewing founder/owners of motorcycle repair shops around the Boston area. Our primary focus is on their strategy and operations, and other factors that are salient to their business success. Preliminary interviews suggest that these small-business owners focus on customer service, technology, ethics, attitude, and reputation.



134 Room 174 10:40-11:25 Panel 1

Derek Truong

Benyamin Lichtenstein (Faculty Sponsor)

Department of Management, UMass Boston, Boston, MA, 02125

Using Investor Sentiment to Predict Financial Crises

Contrary to the claims of public officials and senior managers of financial institutions directly responsible, the financial collapse of 2008 could have been foreseen. Policy makers, such as then Treasury Secretary Hank Paulson and Federal Reserve Chairman Ben Bernanke, failed to anticipate a market downturn though signs were transparent and clear. It has been argued and empirically documented that with an impending financial crisis, the risk-reward trade-off of market participant changes, resulting in a decrease in market sentiment. Traders flock towards less risky securities which drives the returns of such securities higher. In this paper, based on a methodology developed by Persaud (1996), by correlating the riskiness and returns of securities in various international equity markets, an index to measure the sentiment of market participants is constructed. We use the breaking point of the Lehman Brothers bankruptcy as the onset of the financial crisis in 2008. We track the market sentiment that we construct in months leading to the bankruptcy. Results indicate that while market sentiment was high at the beginning of the year, it started declining drastically many months prior to the bankruptcy, indicating that market participants were behaving as if a financial crisis was approaching. In the few months after the crisis, market sentiment shows some improvement in anticipation of policies to address the crisis but still remains depressed as compared to pre-crisis levels as policy makers struggle to formulate regulatory changes. The findings in this paper are consistent with an emerging strand of finance literature (see, e.g., Bezemer, 2009) which disputes the notion that the financial crisis could not be foreseen. Market participants were convinced of the imminent crisis and were behaving in a manner consistent with that, even when policy makers and senior executives in the financial services seemed unaware.



Forestry

135 Room 172 4:05-4:50 Panel 6

Mac Cloyes

Brian Kane (Faculty Sponsor)

Department of Forestry, UMass Amherst, Amherst, MA, 01003

Damage Inflicted on Climbing Ropes by Handsaws

A recent accident highlighted the danger of an arborist cutting their rope with a handsaw while working in a tree. This accident occurred while the climber was using a smaller diameter 24 strand climbing line, which raises a question as to the ability of such ropes to resist cuts. Since there do not appear to be any robust tests of handsaws cutting ropes, it seemed prudent to test typical climbing ropes, both small and large diameter. Our objectives during this study were to determine: 1) the ease with which a climber could cut him- or herself out of a tree using a handsaw, 2) whether a particular blade or rope (or combination thereof) was more likely to lead to rope failure, 3) whether impact force and rope tension influenced the degree to which a rope was cut. We fastened saw blades to a pendulum, which was positioned to swing parallel to a fixed rope under tension. We tested 6 types of rope and 5 blades; for two ropes and one blade, we repeated the tests with varying rope tensions (7 levels) and pendulum velocities (4 levels). We measured the percent of the rope's diameter cut by the blade, as well as the percent loss in the rope's strength after it was cut. The type of blade was a more important factor than type of rope with respect to the percent cut and percent strength loss. Increases in impact force and rope tension increased the ease of cutting both ropes tested. The results of this study are discussed in the context of a climber's safety.



136 Room 172 4:05-4:50 Panel 6

Jared Tobias

Tim Parshall (Faculty Sponsor)

Department of Biology, Westfield State College, Westfield, MA, 01086

Reconstructing the Growth History of Eastern Hemlocks at Westfield State College

Many tree species in US forests are currently infested with invasive pathogens such as the infestation of eastern hemlock (*Tsuga canadensis*) by the hemlock woolly adelgid (*Adelges tsugae*) that threaten their abundance and survival. Historical infestations of pathogens, in some cases, have completely removed some trees from native forests, such as the infestation of the American chestnut (*Castanea dentata*) by the chestnut blight (*Cryphonectria parasitica*). Both of these examples of invasive pathogens are present on the campus of Westfield State College and we hypothesized that the demise of one tree species (American chestnut, now existing as small sprouting shrubs) was the leading cause of the presence of the other (eastern hemlock). We reconstructed the growth history of hemlock trees by collecting twenty-five tree core samples. By evaluating several different aspects of tree growth -- including gap origin events, release events, and the age of each tree -- and through the use of historical records, we addressed the correspondence between hemlock tree establishment and chestnut tree demise. Five trees were found to have been alive during the time of the blight, but none of them experienced release events. Several trees experienced gap origin events during their first several years of growth which indicate it is possible that the disappearance of the chestnut allowed rapid growth of these hemlocks. However it could not be proven that chestnuts on campus grew next to these hemlocks and therefore can only be suggested. From these data, we find that hemlock trees seem to have been established over many decades, rather than all at once. Therefore, we do not find support for the hypothesis that the chestnut blight led to an increase in hemlock tree establishment on campus.



Geography

137 Room 168 4:05-4:50 Panel 6

Nick G Charette

Maureen Carroll

Stephen Healy (Faculty Sponsor)

Department of Geography, Worcester State College, Worcester, MA, 01602

Worcester Gets Greasy: Clean Energy and a Clean Start

Empower is a democratic worker owned enterprise born from the social justice organization EPOCA (Ex-Prisoners and Prisoners Organizing for Community Advancement). EPOCA works toward legislative reform of the rules governing Criminal Offender Record Information (CORI). Current CORI regulations undermine ex-felon's participation in the labor market, their records remaining open to employers for up to fifteen years, discouraging hiring and encouraging recidivism. EPOCA also works to identify employers willing to hire ex-felons with CORIs through its New Leaf Program. A subset of EPOCA members concluded that these efforts, while important, did not provide enough economic opportunity. They created Empower Energy Coop to confront this need. Empower's goal is to convert waste vegetable oil (WVO) into bio-diesel and to create employment for ex-felons in the cooperative tradition, entailing democratic involvement in all aspects of ownership, management and labor. In our action research project we surveyed area restaurants to identify potential WVO donors. The results were applied to a digital map using ArcGIS programming to show restaurants willing to donate WVO to Empower. From the map we can visually identify business contacts, symbolized by the frequency of pick-ups to establish a route to be used by Empower to efficiently deliver services. Identified key competitors for the WVO are large companies that typically cater to larger corporate restaurants. Empower relies on partnerships with small, locally owned and operated businesses, of which Worcester boasts a profusion. Selling Empower as the choice provider of a valuable service is the ongoing project's next goal.



History

138 Room 809 1:20-2:05 Panel 3

Sarah Bello

Martha Yoder (Faculty Sponsor)

Department of Commonwealth Honors College, UMass Amherst, Amherst, MA, 01003

Sickle Cell Anemia: A Discourse on Social and Healthcare Issues in the Black Community

Sickle cell anemia is a disease in which the body makes crescent shaped red blood cells due to an abnormal hemoglobin gene. Because of this shape these red blood cells cannot move easily through the blood vessels, allowing them to form clumps and block blood flow. This blockage causes serious infection, organ damage, and immense pain. Through the lens of sickle cell anemia, a racially-coded disease, this thesis will explore the pain and suffering experienced by the black community due to racial undertones in our health care system and in our nation. This paper will develop the historical roots of the African American health deficit by focusing on early encounters of medical establishments during slavery and during the eugenics movement. The thesis will then explore the cultural and the biological dimensions of pain experienced by the black community due to the disease. The paper will also explore the social and political aspects of sickle cell anemia, its role in the growing Civil Rights Movement of 1955 and the steps our country took in equalizing rights for everyone.



139 Room 163 1:20-2:05 Panel 3

Erin Judge

Mara Dodge (Faculty Sponsor)

Department of History, Westfield State College, Westfield, MA, 01086

The Middlefield Fair - A Case Study of the Agricultural Fair's Cultural, Educational, and Economic Impact

Agricultural fairs have been a major focal point of life in New England for much of our history. The fair was the time when the entire community gathered together to display the year's work, to sell the best animals and produce, and to learn about new agricultural innovations. My case study will focus on the Middlefield Fair which was established in 1855 in Middlefield, Massachusetts. I will present the history of the fair as well as the cultural, educational, and economic impact that the fair had on the town. I will trace the decline of the Middlefield Fair, representative of the downturn of many agricultural fairs, and will present ideas about how these fairs may continue to survive.



140 Room 163 2:15-3:00 Panel 4

Bronwyn McNulty

Woodruff Smith (Faculty Sponsor)

Department of History, UMass Boston, Boston, MA, 02125

Masculinity Beyond the Trenches

The First World War is often seen as the catalyst for major changes in the perception of gender roles within British society. A considerable amount of research exists regarding alterations of femininity during the First World War as women moved into new employment sectors; however, masculinity has been largely ignored. Most scholarship has concentrated on official appeals to masculinity to enhance recruitment efforts and to brand conscientious objectors as sexually deviant or deficient. Further, little has been written about the men who stayed on the home front and worked. In order to bridge this literature gap, this paper will focus on the world of British working men during the tumultuous warring years. The primary concentration of this research are the physically qualified men, although not conscientious objectors, who decided against joining the military and worked in war effort industries at home. Special attention will be given to how these men were perceived by society and themselves, how official propaganda treated men who did not answer the call to arms, and how women perceived these men within the framework of culturally-constructed masculinity. Most importantly, this paper will discuss the ways in which male workers constructed a masculine identity that positioned them not as cowards, but as men whose skills within their respective industries played a critical part in the success of the war. As support, the principle secondary sources for this research are books by Jay Winter, Jessica Meyer, R.J.Q Adams and other British history scholars. Among the primary sources are two newspapers; The Illustrated Sunday Herald and The London Globe and the book Tommy's War by Thomas Cairns Livingstone.



141 Room 172 2:15-3:00 Panel 4

Kendra Nielsen

Carlin Barton (Faculty Sponsor)

Department of History, UMass Amherst, Amherst, MA, 01003

Martyr or Criminal?: Community Debates About Public Voluntary Death

In February of 1991, a thirty-year-old man burned himself to death on the town commons of Amherst, Massachusetts. Believed to be an act of political protest against the first Gulf War, his death inspired an emotionally charged debate in that community over his intentions, his status as a local hero or criminal, and the legitimacy of his suicide as an altruistic act. News of this controversy flooded local media and made appearances in national and international news outlets, yet today, no memorial remains and few people remember the event. The goal of this study is to discover how a community can engage in such a firestorm over issues of suicide and then forget it so quickly. The evidence comes from meticulously assembled archives of the suicide, compiled by local students at the time and rarely accessed since. These sources are compared with documentation of societal reactions of other, better known political suicides and supplemented with primary and secondary sources on martyrdom and political suicide. An analysis of the materials shows a pattern of discomfort with voluntary death and the questions it raises, leading to many more unanswered questions. It also exposes a human need to rationalize and justify voluntary death by labelling it in positive or negative terms. Hopefully this study will help us better understand the way a community deals with this kind of tragedy, and in the process remind this particular community of its own history.



142 Room 165 3:10-3:55 Panel 5

Chris Russell

Laura Lovett (Faculty Sponsor)

Department of History, UMass Amherst, Amherst, MA, 01003

White and Non White Oakland: A Tale of Two Cities - The Forces that Caused and Maintained Inequality in Oakland, CA 1945-1970

Minorities living in Oakland, CA, after World War II faced many of the same challenges and limitations as those living in the “Jim Crow” South. Oakland’s at-large election system politically marginalized racial and ethnic minorities, as it allowed whites- who comprised a large majority of the city until 1970- to dominate city council elections. Most years every council member was a white conservative, even though minorities comprised 28 percent of the population by 1960. Political marginalization allowed the government and private industry to maintain discriminatory policies. Discrimination severely limited occupational and residential opportunities, confining minorities to the oldest and poorest sections of Oakland while most new economic growth occurred in white sections of the city and neighboring East Bay suburbs. These conditions contributed to the disproportionately high levels of poverty and unemployment among Oakland’s minority communities. Oakland’s extremely conservative newspaper, the Oakland Tribune, worked tirelessly to maintain conservative domination of the city. It consistently promoted conservative interests- such as an anti-fair housing proposition and at-large elections- and disparaged liberal interests, such as welfare and anti poverty programs. This editorial philosophy helped those in power maintain the political, economic and social status quo, which placed whites over blacks, rich over poor and business interests over the public interest. The majority of this research was conducted using primary sources, including microfilm of the Oakland Tribune, the California Voice and the San Francisco Chronicle, documents from the Institute of Governmental Studies Library, UC Berkeley, and the Oakland History Room in the Oakland Public Library.



143 Room 165 4:05-4:50 Panel 6

Ryan Shanley

Mara Dodge (Faculty Sponsor)

Department of History, Westfield State College, Westfield, MA, 01086

The Bay of Pigs: A Failure of Secrecy

The year is 1961 and President John F. Kennedy has been in office for less than four months. Fidel Castro has been in power since January 1959 after successfully overthrowing Fulgencio Batista in the Cuban Revolution. Since then Castro had fostered a relationship with the USSR and begun to turn Cuba into a Communist state. Since 1960, the Central Intelligence Agency had been training Cuban exiles to launch an invasion of Cuba. This plan, if successful, would result in Castro's overthrow and the implementation of a new Cuban government with pro-United States sentiment. The invasion was launched on April 17, 1961. The result, known as "The Bay of Pigs," is considered to be a "perfect failure." In the years following the Bay of Pigs, many historians have come forward to discuss their opinions and conclusions about the invasion itself and what caused it to be such a disaster. Through the study of both primary and secondary source materials, I concluded that the primary reason the invasion failed was due to the overall lack of secrecy on the part of those involved. The final blow came on April 10, 1961, only one week before the invasion. The New York Times published an article exposing to the world the CIA's "secret" plans to invade Cuba.



144 Reading Room 10:40-11:25 Panel 1

Emma Welford

Sigrid Schmalzer (Faculty Sponsor)

Department of History, UMass Amherst, Amherst, MA, 01003

The Flow of Time: Reversing Cultural Exchange Between the West and China

In the late 16th century, Jesuit missionaries seeking entrance to China gave elaborate clocks to local officials and eventually, the Imperial Palace. Though China held claim to timekeeping achievements such as Su Song's accurate 11th century clock tower, such pieces had disappeared by the time European clocks were introduced to the country. The popularity of clocks as toys and status symbols continued into the late 18th century, helped along by the patronage of several emperors who arranged for Chinese clock workshops to reproduce the imported gifts. Now on display in Beijing's Palace Museum, these clocks are historical markers of cultural exchange and appropriation between the East and the West. This speaks to broader trends in Western-Chinese relations of this time period, such as the European drive to continually cast China as the exotic Other, while also noting an anomaly in China's frequent dismissal of European goods. As an artist, I seek to portray an alternate version of history, one where China responded to Western gifts with a clock of its own, based on Su Song's designs. Since Europeans decorated their clocks with fanciful Chinese imagery, part of the larger chinoiserie movement, I imagine the Chinese imposing Western symbols on their native clockwork. My clock will highlight the fluid nature of cultural exchange by placing China in the dominant position, rather than furthering the traditional historical view of the West as the only technologically and culturally advanced society.



145 Room 165 4:05-4:50 Panel 6

Jeromie Whalen

Laura Lovett (Faculty Sponsor)

Department of History, UMass Amherst, Amherst, MA, 01003

Purgatory: An Historical Analysis of the Belchertown State Schools and the Institutional Model in Massachusetts

Around the latter quarter of the 19th century and into the early part of the 20th century, Massachusetts and other states alike began addressing the fundamental problem of “feeble-mindedness” that burdened society. As ideas emerged, institutionalization became a popular solution. Institutions were seen as a socially reasonable and, more importantly emphasized at the time, financially responsible way to care for individuals with developmental disabilities. As a result, the Massachusetts legislature approved the creation of an institution for the feeble-minded in the small rural town of Belchertown. In 1922, the Belchertown State Schools opened its doors for the first time. Throughout the 1920’s the BSS was widely regarded as a place to rehabilitate and foster learning for individuals with developmental disabilities. As the school grew in population, so too did the campus. New buildings were constantly being created to accommodate the residents, who totaled over 750 by 1929. As the 1930’s passed, however, Massachusetts felt the brunt of economic hardships brought on by the Great Depression. Funding became increasingly hard to come by, resulting in the limiting of construction, staff, and maintenance of the institution. Meanwhile, the population continued to rise. The economic crunch also led to the school’s official endorsement of the eugenics movement, which sought to improve human genetics through implementation of various social, political, and cultural practices. Belchertown was seen as a way to control an unwanted population. Proponents of eugenics argued that by segregating those deemed mentally inferior not only from society but by gender-based housing as well, the nation could prevent the procreation and, thus, the perpetuation of costly degenerates. Two narratives emerge from the creation of the Belchertown State Schools; one advocates the education and development of individuals with developmental disabilities, while the other focuses on the containment and ultimate extinction of the same group. Interestingly, both led to the rise and fall of the institution.



146 Room 165 4:05-4:50 Panel 6

Joseph Willis

Mara Dodge (Faculty Sponsor)

Department of History, Westfield State College, Westfield, MA, 01086

How the Social Security Act of 1935 Left Women Behind

It comes as little surprise that the Social Security Act of 1935, passed by a white, male-dominated government, incorporated extensive discrimination against women. I argue that the enactment of this profound piece of legislation was intentionally exclusionary. The name itself reveals a conflict of terminology. The Social Security Act could hardly call itself “social” in that it primarily provided insurance to white males while assuming that women had no need (or future need) for such progressive reform. Fifteen years after women’s suffrage, women remained grossly underrepresented at all levels of government. Their lack of influence in the sphere of public policy was especially damaging. The few who did hold positions of influence were unable to ensure that women’s interests were taken into account in New Deal legislation. As a result, the Act did little to provide security to those most likely to face abject poverty. Indeed, the Act was consciously crafted to exclude segments of the population with little political power. By analyzing the events leading up to the law’s passage, and then examining the specific language of the law itself, I argue that the act’s subsequent glorification is a product of historians’ nostalgia. By reviewing the first-hand accounts of notable, female social reformers such as Labor Secretary Frances Perkins as well as Grace Abbott, this paper demonstrates the limited opportunities afforded women in government. This research broadens our understanding of the challenges that the Social Security Act has faced and continues to face amidst questions of privatization and reform.



Industrial Engineering

147 Room 801 3:10-3:55 Panel 5

Dana Evernden

Jenna Marquard (Faculty Sponsor)

Department of Industrial Engineering, UMass Amherst, Amherst, MA, 01003

Scenario-based User Testing to Guide Consumer Health Informatics Design

While Consumer Health Informatics (CHI) Interventions aim to facilitate communication between patients and care providers, these systems are often of a poor design, increase the chance of user error and amount of work, and end in frustration by patients and care providers. Our research team's goal is aimed towards pointing out and resolving these areas of concern in the devices and applications. We developed scenarios involving patient and care provider usage of existing CHI devices and applications - specifically diabetics with high blood pressure and post-bariatric surgery patients. We then conducted in-depth 10-day trials based on the developed scenarios, using multiple health care applications and devices, and taking note of every challenge encountered under three main categories: macroergonomic, physical, and cognitive. Our group is now identifying mediation strategies for challenges found when using the CHI interventions. The scenario-based testing results will be compiled to inform health care technology specialists of the weaknesses and strengths of the CHI devices and systems. These assessments can be presented to decision makers, pointing out the areas they should invest the most time in improving the intervention. We will also begin to mediate these challenges by creating supplementary handbooks to the intervention devices and applications.



Interdisciplinary Studies/BDIC

148 Room 803 2:15-3:00 Panel 4

Matthew Babbitt

Patricia Gorman (Faculty Sponsor)

Department of Commonwealth Honors College, UMass Amherst, Amherst, MA, 01003

How Judeo-Christian Culture Changed Sex and Sexuality

When Constantine delivered his famous edict of religious tolerance to the Roman Empire in the fourth century C.E., the era of Judeo-Christian cultural domination in the Western world began. Historically, it represented a decisive shift away from cultures that followed polytheistic religions with a more positive view of sexuality, including many that featured a creator goddess who celebrated sexuality. Ancient views of sexuality are articulated in ancient Greek, Roman, and Indian art. In a subversion of classical creation myth, both the deity and his creation are male. Woman, contrarily, has no representative deity, and her body and her humanity are derivative and malformed. As a result, only males held leadership positions in the Judeo-Christian hegemony. Popular Western art, controlled by these religious male leaders, reveals a conspicuous absence of graphic depictions of sexual intercourse, coupled with a preponderance of artists to produce rape scenes and other works that present women as objects to be owned rather than as persons with their own agency. Early Christianity was characterized by sexual asceticism, and religious leaders recommended that devout followers practice abstinence. As centuries passed and expectations of Christ's immediate return began to fade, Christianity's spread throughout the Roman Empire depended upon a relaxation in sexual attitudes. Abstinence remained a sign of holiness, practiced by clerics, monks, and nuns. Augustine's writings signaled an ideological shift from abstinence to chaste, passionless procreation; however, sexuality was still a great evil, which the Church strictly controlled and monitored for over one thousand years.



149 Room 809 2:15-3:00 Panel 4

Danielle Centi

Martha Yoder (Faculty Sponsor)

Department of Commonwealth Honors College, UMass Amherst, Amherst, MA, 01003

I Know That You Know I'm Different: How Societal Perceptions Continue to Negatively Affect People with Intellectual and Developmental Disabilities

Historically, people with intellectual and developmental disabilities have been degraded and ostracized. As a way of getting them out of mainstream society and as a way of "helping" them, America founded institutions for their care. However, the institutions only ended up further degrading and segregating this population, which eventually led to the deinstitutionalization movement and new awareness and understanding about them. Now there are federal and state agencies devoted to advocating and providing services to people with disabilities and their families. Despite these efforts, American society is still uncomfortable and judgmental towards the disabled. This paper will show the progression of treatments of people with intellectual and developmental disabilities, the current theories and practices, and then provide new ideas for reform. I propose that society needs to learn how to accept this population as they are, but more importantly realize that they are individuals and should be treated as such.



150 Room 803 3:10-3:55 Panel 5

Haley Chapman

Patricia Gorman (Faculty Sponsor)

Department of Commonwealth Honors College, UMass Amherst, Amherst, MA, 01003

Art as Activism: Confronting Social Norms in Mexico

The year 1920 marked the end of the Mexican Revolution. Over a million people were dead. Husbands and wives were left widows, children as orphans. With their dictator overthrown, and the onset of a much needed period of peace, the Mexican people were optimistic about the unknown future. It is during this indeterminate state that the Mexican mural movement began. The intention of the movement was to use art as a form of social advocacy. Male artists worked within the mural movement to demand that representations of the working class and indigenous people be included in both the definition of national identity and official policies. Though female artists were largely excluded from the mural movement, they too, used art to challenge the norms of Mexican culture. These artists challenged the strict gender binaries of an extremely patriarchal society by exploring female subjectivity. This paper explores the different ways in which male and female artists challenged social norms in post-revolutionary Mexico.



151 Room 811 11:35-12:20 Panel 2

Samantha Clarke

Robert Dow (Faculty Sponsor)

Department of Commonwealth Honors College, UMass Amherst, Amherst, MA, 01003

What Counts is that the Rhyme's Designed to Fill Your Mind: Trading Apathy for Engagement in Today's American Youth through Popular Music

Ask anyone under thirty about the upcoming midterm elections, and the blank stares and shrugs are near-universal, but no gesture will be so ubiquitous as the deft pluck of white plugs out of an ear deaf to its surroundings. To argue this indifference towards politics and passerby is little more than another sign of growing apathy among young adults is to ignore the sounds streaming out of those headphones – not white noise, but music: angry, melancholy, lusty, and playful music that reaches millions, but has the potential to do much more. Rhythm and rhyme bring out youthful passion: witness the thousands of high school garage bands, college radio stations, and underground hip-hop clubs across the country. This paper will explore this passion to its limits and discover how music can transform apathy into engagement. Through extensive interviews with young musicians, activists, and young adults who simply love music, combined with the theoretical insights of scholars like Cass Sunstein on how prevailing attitudes pass through communities and age cohorts, this paper will provide a potent recipe for engagement.



152 Room 163 3:10-3:55 Panel 5

Ana Dechtiar

Ash Hartwell (Faculty Sponsor)

Department of Education, UMass Amherst, Amherst, MA, 01003

The Role of Spiritual Education in Socioeconomic Development

The goal of my research is to examine how and why development programs are often ineffective or unsustainable, have often failed and are still failing, and, most importantly, to explore new methods and approaches involving the use of moral education in empowering communities to change themselves. Through literature research and interviews, I first explored how theories on socioeconomic development have changed overtime, focusing in particular on the origins of the current movement towards small-scale, grassroots community. I asked questions like: What is the relationship between local initiative and agency and state policies and practice? Where change is initiated from within, what motivates a community/individuals within a community to recognize their problems and work towards solving them? I attempted to answer these questions by exploring a method of development based on the belief that effective change will occur if individuals in the community are equipped with virtues like honesty, integrity, generosity, faith, and love. I looked at the Baha'i approach to socioeconomic development and, more specifically, the use of moral education curriculums in development projects. My research uses three field research experiences as case studies. The first is a month-long project on the social, cultural, and economic causes of maternal mortality and morbidity in Bodo a rural village on the coast of Kenya. The second is a one-week trip to Port-au-Prince, Haiti in which I interviewed people involved in the earthquake relief efforts in order to discover the types of beliefs and virtues that lead to social action. The third is my experiences as teacher of a weekly Baha'i virtues/morals class for young adolescents in the family housing complex at UMass Amherst.



153 Room 803 2:15-3:00 Panel 4

Nicole Dezan

Patricia Gorman (Faculty Sponsor)

Department of Commonwealth Honors College, UMass Amherst, Amherst, MA, 01003

Institutionalization of Women: Houses of Hysteria, Nymphomania, and Moral Insanity

With the shift from imprisonment to moral treatment of the insane also came a change in the population of madness itself. As women struggled against traditional norms and gender roles in the late eighteenth and nineteenth centuries, former means of retaining social control began to dissolve. Medicalization of morality and social deviance provided a new groundwork for sexual and domestic governance, particularly under the gender-bound diagnoses of hysteria, nymphomania, moral insanity, and menstrual madness. Socially deviant women were seen as a threat to the foundational structure of the family, thereby deconstructing society from the bottom up; women were thus institutionalized in asylums and given the associated therapeutic surgical procedures both as a means of protecting them from society, and protecting society from women.



154 Room 803 1:20-2:05 Panel 3

Monica Gill

Patricia Gorman (Faculty Sponsor)

Department of Commonwealth Honors College, UMass Amherst, Amherst, MA, 01003

The Serpent and It's Symbolic Evolution as a Religious Icon

The evolution of the Serpent from a symbol of divinity to one of temptation occurred over time as societies of Neolithic Era transformed into today's patriarchal societies. During Neolithic times, worship of a supreme female deity such as The Serpent Goddess was accepted throughout the ancient Western civilization (current day Middle East, Africa, and Asia). These Goddesses were held sacred as ones who supplied divine revelation through the priestesses that served them and snakes were familiar inhabitants of these oracular shrines and temples. This worship spread from Egypt, Sumer, Babylon, and Crete to Canaan where it faced resistance from the Hebrew worship of Yahweh. In order to form a Hebrew state with enough power to face its competitors, it was necessary for the leaders to diminish the power of the Goddess and to focus more attention on politics than on sexual reproduction which was the basis of the Serpent Goddess Religion. The Goddess and her Serpent, which once represented creation, wisdom, advice and counsel slowly came to represent treachery, falsehood, temptation and, ultimately, sin and evil.



155 Room 803 3:10-3:55 Panel 5

Lindsay Glaser

Patricia Gorman (Faculty Sponsor)

Department of Commonwealth Honors College, UMass Amherst, Amherst, MA, 01003

The Transcendence of Beauty from Art to Society: Deconstructing Female Body Image and Aesthetics in Botticelli's Paintings

Sandro Botticelli's Birth of Venus, Primavera, and Mars and Venus represent a classic internalization of social and artistic beauty. His paintings of Venus are constructed by aesthetically pleasing characteristics that transcend art and become the ideal for real women. This transcendence of beauty from art to society complicates gender and creates unrealistic expectations for how the female body should look and behave. Furthermore, beauty becomes a manipulative ascetic when patriarchal societies dominate the production of art and place female image under constant surveillance. Art becomes a dangerous weapon as patriarchal societies paint women, and women paint themselves to appease men. Thus, women become decorative objects in an attempt to possess intangible beauty defined by art. Through exploring Botticelli's construction of beauty in Renaissance Italy and deconstructing how female body image and aesthetics are fundamentally used the same way in modern day America, we can further comprehend why women portray themselves as aesthetically pleasing spectacles and surmise a more realistic understanding of how beauty can be understood. The aim for this exploration is not to understand the religious or mythological significance of each painting, but rather to confront the invisible boundaries between nature and beauty, art and society, and women and men.



156 Room 803 3:10-3:55 Panel 5

Amanda Goncalves

Patricia Gorman (Faculty Sponsor)

Department of Commonwealth Honors College, UMass Amherst, Amherst, MA, 01003

Selling Women for a Price

Representations of the female body can be seen all over the world of advertising. Whether the ad is selling perfume or a car, it is likely that it will be paired with a woman's body, or at least a part of her body. The item may not be marketable to women, yet the images we see are of women's bodies selling the product. This objectification of the body, however, is not a new concept in our society today. Throughout history, the emphasis on the female body and its objectification has allowed for male-dominated societies to dehumanize women and treat them as property. Women are made subordinate and looked at as objects. This way of thinking has directly affected the way women have been treated in a male-dominated world. Women are bought and sold often as a source of income for the family, such as in order to pay their debts, or sold to work hard labor for their owners. They are quickly stripped of their dignity and any rights because they are considered less than human and therefore can be treated as such. More nude women are placed in ads than ever before. Transnational female sex trafficking and sex tourism have increased dramatically in recent years. The amount of money spent on the sex industry is exponentially increasing as time passes and it only reinforces the idea of the sexualized female. Without a change female representation, women will continue be considered property of their male counterparts.



157 Room 803 1:20-2:05 Panel 3

Natalie Goodwin

Patricia Gorman (Faculty Sponsor)

Department of Commonwealth Honors College, UMass Amherst, Amherst, MA, 01003

Helen of Troy: Villain or Victim?

The beauty and mystery surrounding Helen of Troy has captivated audiences for centuries. She has faced scorn and damnation since the time of the Homeric Bards and has gone down in history as not only the “Face That Launched a Thousand Ships,” but also as an adulteress whore. While people cast the blame for the Trojan War on her, they fail to notice that along with beauty both violence and rape follow Helen wherever she goes. Her historical companions within the texts of Homer and Euripides do not recognize Helen’s lack of power within the patriarchal social structure of Ancient Greece. This paper explores the use of Helen as a symbol of the dominance of the patriarchal society. As a semi-divine being she still must submit to her male suppressors. Despite her apparent lack of control over her experiences, Helen does appear to have her own power: the oppositional gaze. Her ability to look back at the patriarchal society as a highly charged entity, grants her a hidden source of power over those who suppress her. Thus while Helen is essentially a vilified-victim of the patriarchal society, she has the potential to surpass the constraints placed on her.



158 Room 803 3:10-3:55 Panel 5

Jennifer Iaconetti

Patricia Gorman (Faculty Sponsor)

Department of Commonwealth Honors College, UMass Amherst, Amherst, MA, 01003

Women's Roles as Determined by Patriarchy

The issue of equality and fair treatment of the sexes is of particular concern to the generation currently entering the workforce. More women are receiving educations and pursuing careers than ever before, and it is inevitable that they will face struggles and barriers similar to those that have plagued female workers for ages. There are many theories, myths, and assumptions surrounding the differences between the sexes in the home and in the workplace. The maternal tendencies of women serve to relegate her to domestic work and restrain her from becoming prominent in the public sphere. The reputed inferior characteristics of females that are ingrained in Western society are a product of the patriarchal powers that has maintained societal rule for centuries. The female gender's limited exposure to leadership has restricted their experience and, in turn, their access to the experiences necessary to unleash their intellectual potential. With fewer women in positions of importance, there is a lack of inspirational work for other women to learn from and strive to imitate. Specifically, the limiting effect of this masculine agenda on females in the workplace has a hindering effect on progress for women.



159 Room 803 3:10-3:55 Panel 5

Patricia Johnson

Patricia Gorman (Faculty Sponsor)

Department of Commonwealth Honors College, UMass Amherst, Amherst, MA, 01003

A Struggle for Self-Representation: The Silencing of Women in Media and New Voices in Self-Portraits

Gender, a fundamental aspect of identity, is a learned behavior shaped by a variety of cultural influences. Entertainment media is one of the most powerful sources of this gendered socialization due to its ubiquity in our culture. It highlights specific gender roles that greatly limit the ways in which we as individuals are able to explore and construct our own identities. Entertainment media is particularly restrictive for women as it lauds a limited set of submissive characteristics associated with femininity. These representations are a result of patriarchal economic and cultural structures that continue to subjugate women by suppressing their individual identities and experiences. Women artists, however, have the freedom to confront and challenge these gender roles in their art. Through self-portraits, women are able to represent their identities from their own perspective, thus reclaiming self-identity and freeing themselves from the confines of media gender roles.



160 Room 165 11:35-12:20 Panel 2
Catherine Lehtinen
Aline Gubrium (Faculty Sponsor)

Department of Public Health, UMass Amherst, Amherst, MA, 01003
Attitudes Regarding Menstruation and Menstrual Suppression

With a number of new contraceptive drugs being marketed to suppress menstruation, this study was conducted to investigate what college-aged women and their influential mentors— University faculty and health professionals—understand about these new drugs and what their own thoughts on menstruation and menstrual suppression are. Ten, semi-structured, informal interviews were done from a recruited convenience sample of University students, faculty, and medical professionals. During the interviews, I asked the participants to reflect on their own thoughts and feelings regarding menstruation, PMS, and menstrual suppression, particularly via hormonal contraception. Female participants were also asked about their own menstrual cycles and their relationship to them. The interview portion of the study took place over a period of two months and each one to two hour-long interview was audio recorded and transcribed verbatim using a pseudonym. I coded the interviews based on key phrases and themes, and analyzed them based on what I have encountered within a literature review of menstrual medicalization and menstrual suppression. Language was particularly focused on and compared to the types of language seen in the literature and within menstrual suppression arguments, suggesting that the language used in common arguments are reflected in these groups of people. A greater understanding of how menstruation and menstrual suppression are received by college-aged women, associated faculty, and University health professionals was obtained and has furthered the understanding of menstrual suppression arguments and the influence of societal portrayals of menstruation and menstrual suppression.



161 Room 165 10:40-11:25 Panel 1

Marissa McCabe

Joan Brenner (Faculty Sponsor)

Department of Interdisciplinary Studies/BDIC, Bunker Hill Community College,
Boston, MA, 02129

"Festivals of Atonement": The Atom Bomb in Visual Art

When the United States of America detonated the first nuclear weapons over Japan, the world was immediately and profoundly changed. Man suddenly possessed the means for his own destruction; and this newfound power initiated surges of powerful emotions. With the visual arts as a vehicle, the atom bomb also exploded into world consciousness. This project explores the psychological implications of the atomic bomb as they were expressed in works of film and photography. American and Japanese films produced in the '50s and '60s are examined, along with photographic accounts of nuclear testing. Through observation, analysis and interpretation of this art, we are able to feel the emotions of their creators and witness the nature of the nuclear sublime. Creation of such art was driven by, and likewise conveys, emotions of guilt, fear, anxiety, and shock concerning the consequences of an enormous power in the hands of imperfect beings. In claiming the divine power of destruction implied by the use of nuclear weapons, we are left with larger than life emotions; and so these works can be interpreted as Nietzsche's "festivals of atonement," serving to resolve these emotions and integrate them into the minds and cultures of men.



162 Room 163 3:10-3:55 Panel 5

J. Alexandria McLaren

Susan McPherson (Faculty Sponsor)

Department of English, Quinsigamond Community College, Worcester, MA,
01606

The Progressive Evolution of Shamanism: Shifting Spiritual Healing Traditions
Within Modern Neurotheological Paradigms

The basic principle of biocentrism challenges us to accept that life creates the universe and within such a foundation, reality exists only in our own consciousness. Breaking away from a meta-theological epistemology that subsisted within the earliest societies has imposed upon the world a parallel evolution of the mystic and the scientific. This presentation will propose that, as with any evolutionary process, the pathways must at some point, converge and re-emerge as concentric identities, with mystic and scientific spiraling in support of each other. Further discussion will include the traditional Shamanistic rituals as expressions of the Gaia while modern medicine combines science and technologies and operates on theoretical neurotheological beliefs, supported with doctrines of religions. The dividing line is our consciousness. Individuals choose which parallel to follow. What began as a healing wheel has been forged into an institutionalized cog and it is up to the new human to fill in the gaps on the gear mechanism as we will eventually cycle back to the roots of true consciousness and beyond.



163 Room 803 2:15-3:00 Panel 4

Jessica Potts

Patricia Gorman (Faculty Sponsor)

Department of Commonwealth Honors College, UMass Amherst, Amherst, MA, 01003

The Role of Patriarchal Definitions of Masculinity in Interpersonal and Social Problems

The feminist movement has shed light on the errors of the gender role assigned to women in patriarchal societies, with more limited attention on the definition masculinity. Though masculinity has been noted to inform the nature of female subordination, attention has not been paid to the impact of masculinity on men. Capable of being manipulated, emotions, a definite but malleable aspect of the human experience- are the basis for gender role differentiation. Men are seen as being stoic or emotionless and in turn rational/reasonable, making them better suited for positions of power in relationships, families and social realms. However, socialization theory forces further scrutinizing of the belief that there are inherent differences between the sexes by demonstrating that emotional expression is to a large extent a learned process. Looking to see the ways in which learned restricted emotionality may be connected to violence, a better understanding of the themes of masculinity seen in popular art (stoicism and violence), can be achieved. The failure of dominant definitions of masculinity to capture the nature of maleness, has a damaging effect on men, because in order to fulfill their role, they must give up an aspect of themselves. While women have been denied access to power in society, men of have been denied a space to express, process and understand their emotional selves. This practice, which has adverse interpersonal consequences, also has a surprising connection to many social problems.



164 Room 803 1:20-2:05 Panel 3

Caitlin Quinn

Patricia Gorman (Faculty Sponsor)

Department of Commonwealth Honors College, UMass Amherst, Amherst, MA, 01003

The Origins of Representations of the Virgin Mary in Pagan Mother Goddess Figures

Images of the Virgin Mary and cultural tradition surrounding her character are plentiful despite her lack of significance in the New Testament. This paper looks into representations of the Virgin Mary throughout history and the connections between these representations and those of the mother goddesses of ancient pagan religions. The connections reveal cultural attitudes relating to representations of the female, as well as the politics behind the Christian church's representations of the female in both biblical texts and later actions.



165 Room 803 2:15-3:00 Panel 4

Alon Rivel

Patricia Gorman (Faculty Sponsor)

Department of Commonwealth Honors College, UMass Amherst, Amherst, MA, 01003

Taught Homophobia: America Society in Crisis

What is the white heterosexual male agenda in American society and why is it targeted at women and homosexual men? Homosexuality is synonymous with femininity in American society. There is a lack of history for women and homosexual men that allowed the heterosexual male dominant culture to create and mold that history to its own advantage. Women and homosexual men have been silenced. Homosexual men, however, remain intolerable to American society and are the new target and scapegoat, therefore the new woman. The dominant white heterosexual culture that exists in America cannot allow for homosexual men to be equal or accepted because homosexuality poses a sexual threat to the heterosexual male agenda. That agenda is to maintain the patriarchal structure of the family through the subordination of both women and homosexual men with control and objectification.



166 Room 803 1:20-2:05 Panel 3

Uriel Rodriguez

Patricia Gorman (Faculty Sponsor)

Department of Commonwealth Honors College, UMass Amherst, Amherst, MA, 01003

From Chaos to Cosmos: Analysis on Beauty Within the Greek Warrior Culture

Since the creation of the universe from chaos, the Greeks have systematically created an ideology that strives to maintain balance. Through works ranging from Homer and Hesiod, to the vase paintings and to the playwrights, order and chaos are always the two opposing forces. The personifications of order and chaos are depicted using the male and female body. Taking this into account, beauty is often associated with men, and if it were ever associated with women, it would typically lead to suffering. Thus, while the male body is embraced and shown throughout Greece, the female body is suppressed within the various art forms for being too dangerous within the realm of the Greek warrior culture.



167 Room 803 1:20-2:05 Panel 3

Sarah Wells

Patricia Gorman (Faculty Sponsor)

Department of Commonwealth Honors College, UMass Amherst, Amherst, MA, 01003

Construction of a Gendered Hierarchy of Power

The patriarchal nature of the Western Christian tradition has been evident throughout history, especially in the selection of the female figures given the most attention. The legacies of these important figures were crafted to deliver certain value assessments on the role of women. Representations of the Virgin Mary and Mary Magdalene in particular will be discussed, as these have helped form the foundation of what it means to be female in the Christian tradition. Further, in looking at representations of rape in a biblical context, a better understanding of power dynamics can be gained. This complements the use of specific female figures in crafting the ideal, sexually pure woman and rejecting other forms of femaleness, which is inherently tied to the construction of a gendered hierarchy of power established in western Christianity. Although men too have sexual lives, only women have consistently been judged throughout written Christian history based on gender and sexual status.



International Studies

168 Room 911 3:10-3:55 Panel 5

Michael Brill

David Smailes (Faculty Sponsor)

Department of Political Science, Westfield State College, Westfield, MA,
01086

Dilemmas of Dominance: American Power in an Evolving World

This study examines several of the major issues pertaining to American foreign policy in 2009 and their implications for the years ahead. As the American military's direct combat role in Iraq neared its conclusion, President Barack Obama made the escalation of the war in Afghanistan and America's presence in Central Asia the centerpiece of his administration's foreign policy strategy. Also examined are the drone-strike campaign in Pakistan and American military involvement in that country, the return of U.S. Special Forces to Somalia, America's growing role in Yemen, the mounting pressure being placed on Iran, the Iraq War's legacy, and the strategic importance of Central Asia's energy reserves as a factor in the decision making process of policymakers. Drawing on books, scholarly texts, news articles, documentaries, and declassified documents, I will discuss the challenges facing American power in a world of greater multi-polarity. How the Obama administration has handled and continues to act in matters of foreign policy will have major implications for the United States and the world.



169 Room 911 3:10-3:55 Panel 5

Mimi Chan

Mohsin Habib (Faculty Sponsor)

Department of Management, UMass Boston, Boston, MA, 02125

An Examination of the Causal Factors of China's Economic Miracle

Since 1978, China's economy has grown significantly. Different perspectives have been given to analyze its growth. Many studies used one or two indicators but failed to completely reveal the causes. This paper covers a comprehensive set of indicators which will present a more inclusive illustration to the country's economic miracle. The relationship between China's GDP with its foreign direct investment, net exports, domestic consumption, education, technology development, infrastructure development, and government expenditure will be assessed and analyzed using the vector autoregression (VAR) Granger causality test. From the results, the most important indicator(s) for China's rapid growth between 1978 and 2008 will be identified. Based on that, policy recommendations for China and similar emerging economies will be discussed.



170 Room 911 3:10-3:55 Panel 5

Matthew Fricker

Avery Plaw (Faculty Sponsor)

Department of Political Science, UMass Dartmouth, N. Dartmouth, MA,
02747-2300

Sudden Justice? Evaluating The US Predator Drone Campaign in Pakistan

The night of Friday, June 18, 2004, was typical for most in Karikot, a village close to Wana, the capital of South Waziristan Agency. Pakistani Taliban leader Nek Mohammed was eating dinner in a courtyard with four colleagues. At 21:45, moments after ending a forty-five minute conversation on his satellite phone, Nek uttered his last words "Allah O Akbar" or "God is Great". Moments later, a 36 square foot crater belched smoke where he and his four colleagues had sat. With the killing of Mohammed, the US government began what would become its most extensive assassination campaign since Vietnam. In the ensuing five and a half years the US has carried out at least 112 Predator drone strikes in Northern Pakistan with a death toll of over 1200. After a slow and intermittent start from 2004 to 2007, the Predator campaign has accelerated rapidly. After annual totals of only 1, 2, 3 and 3 strikes during the first four years of the program (2004-7), total strikes rose sharply to 36 in 2008, and to 54 in 2009. At the same time, there has been a very perceptible shift from a primary focus on Al Qaeda and Afghan Taliban leadership (or "high value targets" (HVTs)) to an increasing pursuit of the Pakistani Taliban, including low level militants. The Obama administration then has not only continued the acceleration of Predator drone strikes initiated in the latter months of the Bush administration but has intensified it and expanded its scope, and the reasons are not far to find. The campaign has recorded some notable successes, does not endanger U.S. personnel, and as far as reaching the enemy across the Pakistani border is concerned, it's the only game in town. Moreover, with the rising insurgency in Afghanistan, the pressure on the Obama administration to destabilize Taliban command, control and support from across the border in Northern Pakistan is enormous and growing.



Japanese

171 Reading Room 2:15-3:00 Panel 4

Andrew DeFeo

Doris Bargaen (Faculty Sponsor)

Department of Japanese, UMass Amherst, Amherst, MA, 01003

Abandonment, Rebellion, and Loyalty

This paper explores the concepts of abandonment and rebellion in samurai culture. The question that is at the core of this research is: Did abandonment and rebellion on the part of samurai necessarily imply disloyalty or betrayal? To answer this question, a variety of both primary sources, such as Japanese plays, films, historical fiction, and eyewitness accounts as well as secondary sources, such as scholarly articles and books were consulted; some of these being required course materials and some discovered through independent research. My counterintuitive finding is that abandonment and rebellion are not “black and white” concepts. The motives and reasons behind such acts are complex and vary from situation to situation. It is possible, for example, for someone to abandon a loved one for the sake of abandoning the person. In the Western world, abandonment is viewed as a cruel and selfish act. This is true, for the most part, in Japan as well, whether samurai or non-samurai are concerned. However, some cases of abandonment demonstrate selflessness. In cases like these, the person who is abandoning someone is placing the wellbeing of the other person above his or her own. This unexpected, counterintuitive dynamic contributes to our understanding of samurai culture in particular and Japanese culture in general.



172 Reading Room 2:15-3:00 Panel 4

Rachel Goggin

Doris Bargaen (Faculty Sponsor)

Department of Japanese, UMass Amherst, Amherst, MA, 01003

Honor, Loyalty and Sacrifices of Women in Japan

Rachel Goggin This paper examines women, of all time periods and all classes, within the context of their exposure to the 700-year-long warrior-dominated culture in Japan. Whether they belonged to the samurai class or to other classes, how did they question, rebel against, or fit into the prevailing samurai ethos? Secondary sources such as Ikegami's *The Taming of the Samurai* provide the basis for my research which focuses on analyzing primary sources (in translation) written at about the time of the events depicted and literature and films set in the past. Many of these sources show women struggling to do what they feel is right in an oppressive situation, being as concerned with questions about honor and loyalty as men, although more circumscribed in their actions. The first half of the paper investigates women of the samurai class, their treatment by samurai men and their various reactions to that treatment. For example, in one film, a woman, her husband, and his father all chose loyalty to each other over loyalty to superiors. The second half focuses on women of other groups; peasant women managing to defy samurai and a young girl dying so that her brother can escape slavery. Although often oppressed by samurai, men and women of other classes still largely looked up to them and drew their morals and ideals from them. Finally, the paper analyzes sources not only from the modern period but about it, describing long-lasting effects of the culture of the samurai--with its emphasis on sacrifice and honor --on post-samurai Japan and its women.



173 Reading Room 2:15-3:00 Panel 4

Daniel Hall

Doris Bargaen (Faculty Sponsor)

Department of Japanese, UMass Amherst, Amherst, MA, 01003

Samurai Loyalty and Homoeroticism: The Many Sides of Japan's Honorific Soul

This paper investigates the reason behind the particularly fierce forms that samurai loyalty takes. Research on primary and secondary sources of samurai culture reveals a plethora of forms of loyalty combining feudal loyalties between lord and retainer, the intense relationship between teacher and student, and the powerful presence of homo-erotic relationships. The ideology that binds samurai to their lords and each other is defined by a hierarchy of rank and status within the samurai class. Remarkably, this ideology can be turned upside down in a crisis situation. Homoeroticism plays an especially important role in samurai culture, serving as a disruptive force as well as an intensified bond between lords, vassals and peers as well. The intense bonds, then tempered with homoerotic feelings, can lead to both fanatical devotion and intense jealousy.



174 Reading Room 3:10-3:55 Panel 5

Michaela Myers

Doris Bargaen (Faculty Sponsor)

Department of Japanese, UMass Amherst, Amherst, MA, 01003

Sacrifice and Devotion within the Japanese Society

The purpose of my thesis is to explore the dominating concepts of sacrifice and devotion within the early periods of Japanese history and to examine how these concepts change over time. The primary sources I use include a broad range of translated early Japanese literature as well as secondary sources by scholars who critique and analyze these concepts. On the basis of my research, I have concluded that the social interactions developed within the Warring States period between samurai lords and vassals were based on loyalty and devotion and allowed the Japanese people as a whole to accept suicide and sacrifice as a demonstration of samurai devotion. This acceptance by non-samurai of samurai values can be seen, though in somewhat warped fashion, from post-samurai times to modern-day Japan in that ordinary people frequently sacrifice in order to save face and show devotion. This evidence is crucial because, from the westerner's point of view, the idea of ritual suicide, sacrifice, and martyrdom offers a narrow definition that is associated purely with theology; however, in Japan these concepts are part of a group-oriented society that chooses honor and devotion for the group as a whole rather than the typical individualistic society we think of in the western world today.



175 Reading Room 3:10-3:55 Panel 5

Shao-Kang Shan

Doris Bargaen (Faculty Sponsor)

Department of Japanese, UMass Amherst, Amherst, MA, 01003

The Evolution of Samurai Social Position and the Code of Honor

How heavy is the weight of honor lying on the shoulders of human beings? Honor is rooted not only in a sense of individual self-esteem, but forms the ethical foundation of a social structure, an empire, and an entire country. The Japanese warrior class, the samurai, was a unique group of individuals who merged into a solid hegemonic social class that dominated Japan for over seven centuries. The samurai perception of honor changed over time in relation to acts of violence, disembowelment, suicide, and the tea ceremony. Samurai were forced to adjust themselves to various rules and values in new environments in order to maintain their social position. For instance, how could samurai, a group in control of and dependent on violence, obtain their code of honor during the great pacification in the Tokugawa period? The primary and secondary sources consulted for this research include historical fiction and documents, scholarly publications, and films. Although fiction and film may not be completely accurate and reliable sources compared to scholarly publications, they are extremely valuable for understanding the emotional nuances compelling characters to perform unusual acts in crisis. Samurai are separated from and highly respected by other social groups because they pursue honor without compromising. However, the code of honor is not fixed. Samurai must follow the tide of new values and be prepared to sacrifice their lives at any moment to maintain their social status. On the other hand, the rise of merchant status and rebellions by peasants had challenged the hegemony of samurai.



176 Reading Room 3:10-3:55 Panel 5

Eric Simmons

Doris Bargaen (Faculty Sponsor)

Department of Japanese, UMass Amherst, Amherst, MA, 01003

The Honorable Use of Deception in Japanese Culture

This paper will explore the honorable use of deception in Japanese culture. The focus of this paper will be the use of deception in warfare and society in samurai culture and among rebels and martyrs during the warring states period, the Tokugawa era, and the post modern era. The paper will also explore the use of deception among the lower classes of Japan. Deception was often used by rebels against the government as well as religious martyrs as a tactic to achieve their ends. Normally deceit is considered dishonorable, but under certain circumstances, it can be viewed as a non-taboo. To analyze the use of deception among samurai, this paper will look at many primary sources including the story of Yoshitsune in a Noh play, several Kurosawa films, and a novel exploring samurai ideals in the post modern era. In analyzing the use of deception among rebels this paper will examine the films concerning the rite of double suicide, a film about the tea master Rikyu, and a Noh play concerning mountain pilgrims. Among samurai, the honorable use of deception mostly concerned with donning the costumes of holymen such as Yoshitsune and his entourage and the character Kanbei in The Seven Samurai. For rebels deception was used to stay true to their ideologies. These cases show a complicated relationship between sacrifice, deception, rebellion, and honor.



177 Reading Room 3:10-3:55 Panel 5

Jing Xu

Doris Bargen (Faculty Sponsor)

Department of Japanese, UMass Amherst, Amherst, MA, 01003

Skeptical Perspective on the Justification of Ritual Suicide in Feudal Japan

In ancient Japan, the Japanese warrior class glorified death. Samurai were willing to sacrifice themselves to the lord or their clan in the ritual known as seppuku but in western culture such a act is usually considered a sin except under certain circumstances. Seppuku, or cutting open one's stomach, became so prominent that it turned into an epidemic. Forms of seppuku, such as following lord into death (junshi), were banned during the peaceful Edo period (1600-1868). Also during the Edo Period seppuku became a badge of honor for samurai who were punished for some offense or crime. It also spread far beyond the warrior class. Ritual suicide was strongly connected to the feudal Japanese belief of Buddhism and entry into nirvana by facing west and chanting an invocation of the Buddha while committing suicide. Therefore even those outside the warrior class committed ritual suicide as a way to demonstrate their loyalty to lord, family, lover, or as an act of defiance. However, as glorified as ritual suicide and death was in Japan, is killing oneself actually beneficial to one's clan or family, or is it even an honorable thing to do? During times of war samurai often took their own lives rather than continuing their fighting and many followed their lords into death even when the lord died of natural causes rather than on the battlefield. These warriors could have better served their lord and clan by staying alive and it begs the question whether ritual suicide is really the right choice in such situations.



Journalism

178 Room 162 2:15-3:00 Panel 4

Stephanie McPherson

James Walker (Faculty Sponsor)

Department of Biology, UMass Amherst, Amherst, MA, 01003

America's Origin: How Americans Believe Life Came to Be

One hundred and fifty years after Charles Darwin put forward the theory of natural selection in his groundbreaking work *On the Origin of Species*, strong objections to his proposal are still being made by proponents of creationism and the more recent theory of intelligent design. The virulence of the debate in the United States is marked by a number of court cases and the back-and-forth publication of books from all sides. Polls show that this continuing debate is fostered by beliefs and positions held by a majority of the American public. I am creating a documentary film focused on how the general population receives their information on intelligent design versus evolution, and I will discuss how they use that information to develop their opinions on this subject. The film will include the background of the history of this debate and how the major popular media, such as books and films, portray both sides' messages. Through discussions with experts, I will outline the history and major positions of both the evolution and the intelligent design sides. The documentary will rest heavily on person-in-the-street interviews, in which I will ask people: (1) What do you believe? (2) Why do you believe it? (3) Have you ever questioned this belief? and (4) Why do you not believe in the opposing theory? I aim to discover if people are willing to question what they have been taught, or if they instead use rhetoric and propaganda to support their beliefs.



Kinesiology

179 Room 172 1:20-2:05 Panel 3

Jennifer Rivero

Priscilla Clarkson (Faculty Sponsor)

Department of Kinesiology, UMass Amherst, Amherst, MA, 01003

Muscle Response After Strenuous Aerobic and Resistance Exercise

INTRODUCTION: Eccentric exercise results in muscle damage as evidenced by decreased range of motion (ROM), swelling, soreness, and strength loss. After eccentric exercise, inflammatory molecules aid in repair and recovery of the exercised muscle. The inflammatory response may contribute to the wide variability in markers of muscle damage observed in the response to eccentric exercise. This study will determine if altering the inflammatory response by performing aerobic exercise before eccentric exercise explains the variability. I hypothesize that performing strenuous aerobic exercise before eccentric exercise will result in prolonged loss of range of motion (ROM), reduced swelling, more soreness, and prolonged strength loss. METHODS: 16 men (18-35 yrs) will be studied. Five subjects have been tested to date. Baseline measures of resting arm angle (measure of ROM), arm circumference (swelling), muscle soreness, and strength were taken. Subjects were then placed in either the resting group or the aerobic exercise group. In the resting group, subjects performed just the eccentric exercise with one arm. In the aerobic exercise group, subjects performed a strenuous treadmill exercise followed by the eccentric arm exercise. The same measures were assessed at 1, 2, 3, 4, 7, and 10 days after the exercise. After a 7-10 day rest period, the subjects were placed in the opposite group (resting or aerobic exercise group) and performed the same protocol with the opposite arm. RESULTS: I pooled data from the 5 completed subjects. In response to eccentric exercise: arm angle was most acute immediately after (decrease of 8.7 degrees); arm circumference peaked 4 days after (increase of 6.1 mm); soreness was greatest 2 days after (4.0 on a scale of 1.0, no soreness, to 10.0, very, very sore); and strength loss was greatest immediately after (77% loss). DISCUSSION: Consistent with previous studies, the eccentric arm exercise was effective in inducing a decrease in range of motion, and an increase in swelling, muscle soreness, and strength loss. Therefore, I will be able to effectively test the hypothesis. The research is still in progress, and the data collection is projected to end on April 1, 2010.



Latin American Studies

180 Room 801 10:40-11:25 Panel 1

Samantha Balaban

Haivan Hoang (Faculty Sponsor)

Department of English, UMass Amherst, Amherst, MA, 01003

The Fair Trade Movement in Argentina; A Case Study: La Fundación Gran Chaco and Indigenous Artisans in Formosa

Fair Trade is an emerging theme in the world economy that has gained in importance and trajectory as it continues to raise social awareness about the potential benefits of a fair market for small producers in the third world. So far, fair trade practices have shown the potential to have a positive social and economic impact for participants and their communities by assuring fair prices for products such as coffee, tea, and artisan crafts. However, while fair trade is gaining presence globally, the movement in Argentina is still far behind the rest of the world. This paper will present a case-study for fair trade commercialization among a group of indigenous artisans in the northern Argentinean province of Formosa in order to see if it has resulted in any social or economic impacts. This research project was developed using a combination of print and online resources, interviews, and first-hand observations. The bulk of the research was conducted in Buenos Aires, Argentina and used to provide all of the information necessary to understanding the case-study. The interviews and observations took place in the province of Formosa. Interviews with the fair trade organization Fundación Gran Chaco took place in the city of Formosa. Interviews with the artisans who participate in the foundation took place in the town of Juarez and in the town of Vaca Perdida. The structure of the essay is divided into two parts: an introduction to the theme of fair trade with a focus on fair trade in Argentina, and the case study, which presents the aforementioned foundation, the communities and the indigenous artisans. Finally, the conclusion will present the findings that participation in fair trade commercialization through Fundación Gran Chaco has resulted in a positive social impact but very little economic impact for the artisans and their communities.



181 Room 801 10:40-11:25 Panel 1

Amanda Zac

Lisa Maya Knauer (Faculty Sponsor)

Department of Sociology, Anthropology, and Crime and Justice Studies,
UMass Dartmouth, N. Dartmouth, MA, 02747-2300

How American Tourism Affects Mayan Identity: San Jose, Peten

The trail of Mayan ruins that runs through Central America, known as 'La Ruta Maya' has brought a booming tourist industry along with many changes for indigenous Mayan peoples who live there. In some cases tourism has improved local economies, and has also produced resurgence in Mayan identity. This paper presents a case study of how the Maya in the Petén region of Guatemala are adapting their heritage to fit the desires of the tourist industry. The Petén is the northernmost and largest part of Guatemala, it is bordered by Belize and Mexico and was once the epicenter of Mayan activity, the ruins of which are scattered throughout the region. The people of the Petén have adapted their identity to attract more tourism, and in doing so, they are not only losing what is authentic in their heritage, but they are also losing tourists. Recently the changes made in San José, Petén in the wake of a prosperous economic period driven by tourism, have driven the tourists away. San José is located on the edge of Lake Petén Itzá, in what was once the heart of the ancient Mayan jungle. It was once touted as a hidden gem, authentic and pristine, off the beaten path. However, as more tourists came, it has turned into a concrete and pizza tourist attraction. San José is used as a case study of the impact of tourism development and its impact on Mayan identity. Drawing upon my visits to this small village over the past ten years, and interviews with the people who live there, this paper will examine its evolution from an almost hidden Mayan society to a struggling tourist stop along la Ruta Maya.



Legal Studies

182 Room 803 10:40-11:25 Panel 1

Matthew Vayda

Nina Siulc (Faculty Sponsor)

Department of Legal Studies, UMass Amherst, Amherst, MA, 01003

Decriminalization in Portugal: A New Drug Strategy

On July 1, 2001, Portugal legally decriminalized all drugs, even cocaine and heroine. This paper discusses the reasons for such a radical law and the implementation of its policies. In the 1990's Portugal had a major drug problem, usage rates and HIV rates were high. After decriminalization, these rates have dropped. The Portuguese government had realized that criminalization was actually exacerbating the problem and after extensive research found that decriminalization was the optimal strategy to combat the nation's growing drug problem. Imprisonment is no longer imposed but rather sanctions and treatment are used. There has been a focus on the elimination of the stigma that comes with drug use and treatment. Prevalence rates and mortality rates associated with drugs have declined and are some of the lowest in Europe and in the world. Decriminalization has been a great success in Portugal so far; usage rates have not gone up and the country has not become a drug trafficking Mecca. Europe meanwhile has taken on a harm reduction strategy to combat illegal drug use, and recently Mexico and Argentina have also decriminalized drugs. Statistical data suggests that decriminalization has worked in Portugal. This paper will compare US strategies to combat drug use to the more liberal ones in Portugal. The US has some of the strictest anti- drug policies yet some of the highest usage rates in the world. Implementing some of the more lenient Portuguese policies may have a positive effect in the US, as Portugal has stressed treatment and rates have gone down. This paper looks at the situation in Portugal, the legislation, the policies and the implementation, while taking into account the current problems in the US. Especially in a time of recession, the US and other countries should consider a more liberal approach to their drug policies. This paper stresses that methods in Portugal could be adopted and work elsewhere.



183 Room 803 10:40-11:25 Panel 1

Brian Zucco

Kathleen Brown-Perez (Faculty Sponsor)

Department of Commonwealth Honors College, UMass Amherst, Amherst, MA, 01003

State Killing: Its Justifications, Problems, and Reasons for Retention

The United States is the only Western state that employs capital punishment. In 2008, the US was fourth in the world in executions behind China, Iran, and Saudi Arabia and just ahead of Pakistan. Since the US was founded upon Western conceptions of liberty that value individual rights and limit the state's power to revoke those rights, its use of capital punishment merits investigation. This research concerns the contemporary state of capital punishment in the United States and employs numerous scholarly journal articles, academic books, and Supreme Court decisions. It begins by focusing on some of the common justifications for capital punishment such as deterrence, costs, and retribution, then examines problems with its application including wrongful convictions and racial discrimination. Public support for it is then ascertained through public opinion polls. Finally, this research attempts to answer why the American public and its government continue to support capital punishment. My research finds that all of the justifications for capital punishment are either invalid or unwise. Moreover, there is extensive evidence that many innocent people have been wrongfully convicted, and that its application is racially discriminatory. Why then, in light of this reality, is capital punishment still employed in the United States? The commonly proffered, and statistically valid, reason is that a majority of the public supports it. But this begs a further question: Why does the public support it? This paper shows that, despite any valid justification and evidence of wrongful convictions and racial discrimination, contemporary support for capital punishment is the result of a conservative and punitive shift in American society that began in the late 1960s and whose effects continue to reverberate.



Literature

184 Room 162 11:35-12:20 Panel 2

Shielding Cournoyer

Vanessa Diana (Faculty Sponsor)

Department of English, Westfield State College, Westfield, MA, 01086

Sherman Alexie's Flight, as seen through the Lens of DID

In this paper I use a psychological perspective to analyze Sherman Alexie's characterization of Michael (aka Zits), the teen narrator of the novel "Flight," in light of his experiences with childhood sexual abuse, his dissociation from his own identity, and the fragmentation of his persona throughout each of his time-traveling episodes. I highlight similarities between his experiences and the symptoms and treatment for Multiple Personality Disorder, more recently known as Dissociative Identity Disorder (DID). His experiences do not represent an accurate portrayal of DID as it actually occurs, and the purpose of this paper is not to imply that Sherman Alexie intended his character to be a realistic sufferer of DID. Rather, I will use the existing psychological condition in order to shed more light on the meaning of this fictional work of literature, looking at the development and purpose of a rare psychological disorder in real people as a means of connecting and explaining the meaning behind the seemingly random, unconnected episodes Alexie's character experiences. I show that Michael's abuse as a child and his near-homicidal plan forced him into a surreal defense mechanism that sought to separate him from his own identity. I suggest that Alexie structured Michael's journey as a healing process that enables him to reflect on the different aspects of his own personality and to understand how his past relates to his present actions.



185 Room 162 10:40-11:25 Panel 1

Jennifer Dulong

John McHale (Faculty Sponsor)

Department of English, Salem State College, Salem , MA, 01970

Tilting at Windmills

Dean Moriarty, star of Jack Kerouac's infamous novel *On the Road*, asks sidekick Sal Paradise, "What's your road, man?" (Kerouac, 351). Without giving Sal a chance to answer, he tells him, "It's an anywhere road for anybody anyhow." Sal nods his head in agreement, as any sidekick would, as they move towards the next adventure ahead of them. When writing *On the Road*, Kerouac imagined it to be a "picaresque "quest" novel echoing [Miguel de Cervantes's] *Don Quixote*" (Maher, 189). Don Quixote and Sancho Panza resemble Dean Moriarty and Sal Paradise in their search for an escape from the "forlorn rags of growing old" in pursuit of what Dean refers to as "IT" (Kerouac, 213). Each pair's version of IT differs from their own romanticized view of the past, always seen through the rose colored glasses of nostalgia. At the root of their individual pasts lies the "one thing that we yearn for in all our living days...the remembrance of some lost bliss that we probably experienced in the womb and can only be reproduced (though we hate to admit it) in death"(124). Essentially, this bliss exists only in the lack of responsibility for oneself and for others. Don Quixote and Dean Moriarty continue to chase after that lost bliss like naïve children. However, Sancho and Sal come to realize they are fighting a losing battle against Time, and as Carol Gottlieb Vopat states in her article *Jack Kerouac's On the Road: A Re-Evaluation*, "Time eventually captures even frantically speeding children". What is the end of the road for Dean and Don is the beginning for Sal and Sancho as it is not too late for them to confront reality.



186 Room 811 11:35-12:20 Panel 2

Devin Grass

Robert Dow (Faculty Sponsor)

Department of Commonwealth Honors College, UMass Amherst, Amherst, MA, 01003

Censorship in the Classroom

Abstract Title: Censorship in the Classroom Author: Devin Grass CE Type: Course Capstone Thesis Censorship of classic literature in the United States is a local phenomenon that is becoming increasingly problematic. Mark Twain's *Huckleberry Finn*, Ken Kesey's *One Flew Over the Cuckoo's Nest* and Joseph Heller's *Catch-22* are frequently challenged books despite their status as classics of American literature. Censors of these novels often object to specific passages without having an understanding of the how they apply within the theme of the novel as a whole. This paper will examine criticisms of these works and where they apply within the texts. It will look at the history of censorship in American high schools, and offer solutions to problems communities have with protecting freedom of speech. The way a text is taught is often more problematic than the text itself, which is why teachers must develop a comprehensive strategy before teaching works that contain potentially offensive material. The only way for society to move past censorship is to openly discuss what is problematic about the texts. A literary work may contain offensive material, but the content of the novel and its literary value is more important. High schools teach students how to read critically and think for themselves, which is why classic novels that may be potentially controversial should be on the shelves because the students can decide for themselves what is worth reading. Society must take steps to prevent censorship and ensure that great novels are available during every child's education.



187 Room 811 10:40-11:25 Panel 1

Stephanie Isaacs

Robert Dow (Faculty Sponsor)

Department of Commonwealth Honors College, UMass Amherst, Amherst, MA, 01003

The Claim That Isolates

Several novels of literary significance have chronicled women's struggle for equality in which the ownership of a woman's sexuality plays a pivotal role. Specifically, Hester Prynne of Nathaniel Hawthorne's *The Scarlet Letter*, Xuela Richardson of Jamaica Kincaid's *Autobiography of My Mother* and Nurse Ratched of Ken Kesey's *One Flew Over the Cuckoo's Nest* serve as examples of female characters who dare to claim ownership of their bodies and sexual identities while living in oppressed societies in which women lack the opportunity to do so. This paper will explore how Hester, Xuela and Nurse Ratched are subjugated by their respective societies and how each woman combats societal domination by taking possession of her body and sexuality. In addition this paper will illustrate how these women are able to transform the aspects of femininity that stand as symbols of weakness into instruments to attain the power and control typically reserved for males, and also how this claim of ownership leaves these women isolated from the communities to which they once belonged. Although Hester, Xuela and Nurse Ratched are fictional characters, their courageous struggles are representative of the actual struggles of their real life counterparts. For example, Melissa Febos, in her memoir "Whip Smart" describes her secret double life as a full time student and professional dominatrix. This paper illustrates how Febos' use of sexuality and a shockingly ascendant claim of ownership of her female form placed her in a position to dominate some of the most powerful men in New York City. As Febos gained power and authority in the same ways as her literary predecessors, Hester, Xuela and Nurse Ratched, she also suffers similar consequences. Essays from periodicals, both contemporary and historical, will be used in the examination of the progression of women's struggle for sexual autonomy and equality, highlighting the challenges women faced, illustrated by Hawthorne, Kincaid and Kesey, and described by Febos in her modern true life account.



Management

188 Room 174 2:15-3:00 Panel 4

Laura Fay

Jean-Pierre Kuilboer (Faculty Sponsor)

Department of Management, UMass Boston, Boston, MA, 02125

Into the Cloud: The Intersection of Cloud Computing, Open Source Software, and Security

In the current economic climate, companies are looking for ways to save money and improve their businesses. A common way to reduce spending is to shrink information technology expenditures, by using software and computing solutions that are available either for free or at lower cost. Two of these cost saving solutions include open source software (sometimes called freeware) and cloud computing. However, with the use of these lower cost solutions, businesses must be aware of the benefits and potential security risks associated with the adoption of such technologies. This study hopes to explore the role security plays in the adoption of open source software and cloud computing as well as what impact open source software has on the adoption of cloud computing solutions. This study will employ a mixed method approach with qualitative interviews supporting quantitative survey data. Preliminary interviews have indicated that the adoption of cloud computing raises an ethical question about using open source software in cloud environments for profit and its possibility to hurt the open source movement. However, it will be important to predict if open source software will be a positive or negative influence on the adoption of cloud computing environments.



189 Room 175 10:40-11:25 Panel 1

Glenn Holmes

Leah Ritchie (Faculty Sponsor)

Department of Management, Salem State College, Salem , MA, 01970

Ageism: Acceptance Levels between Two Birth Cohorts in the Workplace

Employees from different birth cohorts often have different views, attitudes, values, and habits. Because of this fact, there is likelihood in organizations with employees of various ages that animosity may grow and lead to conflict. This paper will show, based on survey data from twenty-three employees working in an office environment, that an organization's oldest and youngest employees are not as accepting of each other as their middle-aged employees are. Thus, organizations should take direct action to subvert any possible hostility between age groups before it adversely affects operations, even going so far as using their middle-aged employees as peacekeepers.



190 Room 174 11:35-12:20 Panel 2

Meagan Mulroy

Supriya Sarnikar (Faculty Sponsor)

Department of Economics, Westfield State College, Westfield, MA, 01086

U.S. Businesses Offshoring

The term offshoring is used to describe the relocation of some of a company's production, services or jobs to a different country. This study explores the main reasons a company may go offshore and associated problems in doing so. Interviews were conducted with executives at two separate corporations, OnProcess Technology and Hewlett Packard (HP). Both companies have chosen to outsource some parts of their business. This study investigates their reasons for doing so, the impact of this choice on their growth and financial success, and what difficulties, if any, they encountered in the process. The interview results, supplemented by a review of scholarly literature, suggest that there are several reasons that a business might go offshore. Some of these include reducing expenses such as labor costs, taking advantage of less strict labor regulations, and more favorable tax conditions. Findings suggest that a strategy of moving a business offshore can be the key to sustaining a competitive advantage in the marketplace. The results also suggest that offshoring is a complex decision with several potential pitfalls. This paper provides an outline of the steps that a business might follow to avoid these negative consequences and successfully manage the process of outsourcing. This study can, therefore, serve as a useful guide for students and managers interested in offshoring.



191 Room 174 3:10-3:55 Panel 5

Michael Powell

Michael Novak (Faculty Sponsor)

Department of Management, UMass Boston, Boston, MA, 02125

Managing Innovation Abstract

Innovation is one of the most important factors in successful business and in its applications to society. Even more important are the factors that contribute towards innovation and how innovation is managed. Managing innovation requires an intricate, complex operation that pushes a company towards achieving its goals. The purpose of this paper will be to identify organizational factors that foster innovation through an exploratory study of a publishing company. For the purposes of this paper and confidentiality, the company studied will be cited as Company A. In this study, data will be collected using semi-structured interviews on a number of employees at Company A. The interviewees will range from upper management to line employees and the questions will be specific to the interviewee and their position. The content of the questions will include some of the following: the company's strategic plan involving innovation, the development of past and present innovative products, the management of innovation through policies and procedures, employee motivations, and reward systems. The results should indicate whether or not the company is successful in fostering creativity and innovation within the company and what organizational factors contribute towards that success.



192 Room 174 4:05-4:50 Panel 6

Samuel Swartz

Benyamin Lichtenstein (Faculty Sponsor)

Department of Management, UMass Boston, Boston, MA, 02125

Resources in the National Football League

This study will take a look into the role that upper management can play in producing a world champion National Football League team. For an NFL team, management has the job of selecting players that will best fit the team and also how much to pay them. The NFL salary cap makes management's job more interesting as they must carefully allocate funds while still trying to obtain the best talent. At the same time, you need these well-paid players to perform well, week after week, in order to achieve team goals. Thus, my study will compare players' salaries with their actual on-field production. This will help determine which players provide the most "value" for their team. From a strategic perspective, these players with the most value – production for price – are the team's most "efficient" resources. By collecting public information on player salaries for each team, and calculating "on-field" production of each player compared to his same-position competition within the league, I can determine analytically whether the teams with the most efficient resources are the ones who are winning. This answer has important implications for the Resource-Based view of strategy, as well as for coaches and owners of NFL football teams.



193 Room 174 4:05-4:50 Panel 6

Adam Thomas

Benyamin Lichtenstein (Faculty Sponsor)

Department of Management, UMass Boston, Boston, MA, 02125

Interest Based Negotiation: An Analysis of Awareness, Frequency, Preference, and Other Contributing Factors to Implementation

Statement of Purpose: Our topic is Interest Based Negotiation (IBN), and evolved form of collective bargaining, centered around the achievement of mutually shared interests. Our research builds upon existing research conducted by Cutcher-Gershenfeld, Kochan, Ferguson and Barrett in 2007. We focus on 2003 survey data and compare it to 2010 case studies to assess changes in levels of awareness, preference, and usage frequency of IBN in the education industrial sector. Methodology: We employ a mixed method strategy. The survey data we review is a subset of a larger data population derived from three national surveys from 1996, 1999, and 2003. This data surveyed respondents about their awareness, use, and preference for IBN. We extract responses relative to education and identify the specific trends in place as of 2003. Next, we conduct in-depth case studies that identify their 2009-2010 rating for use, awareness, and preference. In addition our analysis of the selected case studies will seek to identify causation for any deviations from the previous 3 surveys as well as identify any other contributing factors specific to the bargaining unit or employer. Observations: Our research is ongoing however we believe that among other issues our findings may include: • IBN shows a declining trend of usage resulting from disconnect between union negotiating teams and union membership. • IBN poses a potential threat of changing negotiation leverage equations in the event that the parties abandon IBN negotiating and revert to distributive practices; Unions become irreparably distanced from their militant sub-cultures that historically provided leverage in distributive negotiations.



194 Room 174 4:05-4:50 Panel 6

Daniel Triano

Benyamin Lichtenstein (Faculty Sponsor)

Department of Management, UMass Boston, Boston, MA, 02125

Centralization: Adding Value to Large Corporations

Is centralizing specific business processes giving large corporations a competitive advantage? I will be doing a longitude case study to examine, under certain conditions, when centralization can be an effective strategy for improving efficiency in value added business processes. I will start by laying out the present theory on centralization and decentralization while defining each. Then I explore the prospects and outcomes of one centralization effort, through a longitudinal case study of Fresenius Medical Care NA (FMC-NA), a large healthcare corporation. FMC-NA, like many large corporations, has grown through an aggressive acquisitions and mergers strategy which created a matrix of decentralization in business process workflows. Prior to its recent move toward centralization, each of its six business units dealt independently with business functions like entering HR transactions. Recently FMC-NA centralized its new hire process. My analysis will test the proposition that centralization improves efficiency and effectiveness in work processes. In addition to some qualitative analysis, I shall examine data from before and after the centralization. My analysis is expected to show that centralization has made this process more efficient from a processing aspect as well as has added significant cost savings in staff. In addition, I will use various variables and statistical tests to pin point what key areas of the process have become more efficient. Finally, I will highlight any early indications of performance efficiencies or inefficiencies and give an overview of what direction should be taken going forward.



Marketing

195 Room 174 11:35-12:20 Panel 2

Sarah Ritchie

Mayuresh Kelkar (Faculty Sponsor)

Department of Marketing, Salem State College, Salem , MA, 01970

Similarities and Differences of Advertising Techniques Used in the United States and in Asia

Having a specific interest in print and commercial advertisements, as well as Asian culture, my Honors Thesis will be a thorough research of marketing and advertising techniques used in the United States and Asia. Through an extensive literary analysis, differences in approach used in the United States versus Asia will be visited and evaluated. This topic will connect to a comparison of traditional cultural aspects of both of these markets in modern history. Specific cases of advertisers targeting both markets will also be presented to reinforce material discovered in this research project.



Mathematics & Statistics

196 Room 175 2:15-3:00 Panel 4

Pagna Eam

Tom Grady (Faculty Sponsor)

Department of Mathematics & Statistics, Bristol Community College, Fall River, MA, 02720

Is a More Expensive House Really Better?

This presentation investigates comparative real estate transactions in Attleboro and North Attleboro, Massachusetts. Statistical analysis and probability theory are applied to a two-year period of housing sales (September 2005 to August 2006, and September 2008 to August 2009). A compare and contrast method was used to help reach a conclusion between the two respective annual reports of real estate transactions. Additional methods of analysis include: tabular and graphical forms; various measures of central tendency and variation; Chebyshev Theory (75% & 90%); Empirical Rule; and Modified box-and-whisker plots. Everyone is aware of the consequences of the recession affecting most of the United States. Foreclosures are way up, and many people have lost their homes. The data collected in the 2008-2009 cycle may, at least in part, reflect this trend. Potential homebuyers may find the benefit of these findings if they apply the methods used in this research of Attleboro and North Attleboro to two towns or cities they may be considering.



197 Room 168 11:35-12:20 Panel 2

Sidafa Conde

Zachary Grant

Sigal Gottlieb (Faculty Sponsor)

Department of Mathematics & Statistics, UMass Dartmouth, N. Dartmouth,
MA, 02747-2300

Adaptive Hybrid Trigonometric-Polynomial Reconstruction

Fourier Series approximations are well known for their spectral convergence on smooth and periodic functions. However, they fail to produce similar convergence when faced with discontinuous problems due to peculiar behavior near the discontinuities. Our work is to remedy this problem by using a hybrid method. In this method, polynomial approximation is used near the discontinuity and Fourier approximations are used on the other regions. We present numerical differences between our methods and other previous methods applied to similar popular problems. Moreover, we attempt to reduce the error caused by aliasing.



198 Room 175 2:15-3:00 Panel 4

Charles D Poole

Matt Huberman

Alfa Heryudono (Faculty Sponsor)

Department of Mathematics & Statistics, UMass Dartmouth, N. Dartmouth,
MA, 02747-2300

Randomized Spread of Information Using a Human Behavior Model

Randomized rumor spreading protocols are classically used to spread information across a network. Starting with the model proposed by Doerr-Huber-Levavi, the basic assumption, where each node must follow certain rules to maintain the robustness of a random protocol to insure against transmission failure, will be expanded upon. We extend the protocol to define more efficient methods for robust rumor spreading by including human behavior in the model. We will compare our model against the original method of rumor spreading to show increased efficiency.



199 Room 168 11:35-12:20 Panel 2

Ann Kimball

Gary Davis (Faculty Sponsor)

Department of Mathematics & Statistics, UMass Dartmouth, N. Dartmouth,
MA, 02747-2300

A Drunken Monkey Will Get as Many Bananas as He Wants if He Walks Long Enough

A classic result for random walks on an integer lattice in the plane is that to get a distance r from the start, the walk needs to be on average of length r^2 . We imagine a drunken monkey carrying out a random walk. At each step of the walk he has a probability of being told there is no banana for him at that spot, in which case he stays where he is. We simulated such random walks with rejection, for varying rejection probabilities. We discuss the dependence of the average distance traveled, the average number of bananas collected, and the average number of distinct sites visited, on the rejection probability. Simulations suggest strongly that for any rejection probability, p , the average distance from the start for a walk of length n is $A(p) \cdot n^{0.5}$ for some constant $A(p)$. We discuss the behavior of $A(p)$ as a function of p . The range of a random walk with rejection is the number of distinct sites the monkey visits. We examine the dependence of the range, and also the number of bananas the monkey collects, on the rejection probability p .



200 Room 168 11:35-12:20 Panel 2

Sidafa Conde

Charles Poole

Gary Davis (Faculty Sponsor)

Department of Mathematics & Statistics, UMass Dartmouth, N. Dartmouth,
MA, 02747-2300

Time Series Analysis of Unknown Keystrokes

Keyboarding text can be thought of as a process of making transitions from one state (letter or keyboard symbol) to another. Associated with each transition is a real number – the time taken to type the second symbol following the first symbol. Similarly, written text gives rise to a discrete time series of keyboard distances between successive symbols (including spaces). We will discuss how correlating the above two time series assists us in building a model of what is being typed from the time intervals between successive symbol pairs. Such a model is very useful in security issues, such as to decipher text through recorded time between successive key strokes, as in Secure Shell (SSH) data. Also of interest, and to be discussed, is whether different typing styles lead to a proportionate decrease or increase in keyboarding times across all letter pairs, or whether there are essentially different keyboarding styles, and, if so, how those styles can be determined from time series data. We examine whether the state transition times for keyboarding form a Markov chain.



Music

201 Reading Room 11:35-12:20 Panel 2

Ryoko Kokuba

Tom Grady (Faculty Sponsor)

Department of Music, Bristol Community College, Fall River, MA, 02720

[Youtube Orchestra](#)

Youtube Orchestra: A Postmodern Music Performance Youtube is no longer Youtube. The accessibility and affordability (free) of Youtube has attracted millions of daily viewers and aspiring artists from a variety of artistic disciplines, from Oscar winners to parents of obnoxious little children. But Youtube is no longer just a vehicle for sharing videos. In this workshop, I will explore the transformation of Youtube's function of watching art to turning it into an artistic instrument, "mashing up," a number of Youtube videos simultaneously to effectively transform them into individual musical instruments to create one coherent piece of music. By using pre-composed music as individual instruments, I am able to combine and transform my composition at any giving time. This raises postmodern questions about who is a composer? What is a composition? What is a musical instrument? I will also explore plurality and the boundaries of performer and audience by creating a performance space, a "Youtube Orchestra" with a series of laptops w/externals speakers and encouraging the audience to perform and orchestrate a mash up, turning each of them into a composer and instrument player.



202 Reading Room 11:35-12:20 Panel 2

Michael Pinheiro

Janet Polvino (Faculty Sponsor)

Department of Music, Holyoke Community College, Holyoke, MA, 01040

Opera's Role in Transforming Instrumental Music

When one thinks about opera, one of the first things that comes to mind is the image of a soprano singing on stage in an elaborate costume. Opera was one of the most important artistic movements of the Baroque Era (between 1600 and 1750). One fact that is not often explored is the influence of Baroque opera on the development of instrumental music. Several sources about the development of western music were analyzed. Books and musical scores from the Baroque Era were used to identify innovations in opera which would eventually be incorporated into concert music. Relevant information found in these sources was compiled and used as data for the research. The research revealed several links between opera and the development of instrumental music. Many trends and techniques which were to become standard in music were developed and introduced first in operatic settings. These included forms, textures, instrumentations, articulations and more. Research suggests that that Baroque opera was extremely important to the development of instrumental music. At this time, composers had freedom to experiment without restrictions previously imposed on them by the church. Also, patronage from wealthy aristocrats gave them the opportunity to innovate. While it is possible that new developments might have occurred eventually without opera, the dynamic impact of this new art form in Europe in the Baroque Era propelled music to new heights. It set the stage for many musical innovations that shaped music for centuries to come.



Nursing

203 Room 162 4:05-4:50 Panel 6

Shannon Barry

Cynthia Jacelon (Faculty Sponsor)

Department of Nursing, UMass Amherst, Amherst, MA, 01003

Dignity and Vulnerability: Do We Care Enough?

The concepts of dignity and vulnerability in older adults are widely spoken of in the health care field, yet their actual relationship had not been studied. The aim of this study was to determine how certain demographics affect the older adult's vulnerability and how dignity and vulnerability are related. Dignity has the ability to help with successful aging and increase self-value and self-esteem, while vulnerability is related to the idea that some are more susceptible to harm than others. Knowing more about vulnerability and the correlation between these two ideas would significantly help health care workers to provide better quality care to patients. A packet of questionnaires was made to give to those aged sixty five and above in senior centers across Western Massachusetts. In this packet were questionnaires to gain information on the client's demographics, a dignity scale, a vulnerability scale, and whether or not the client had been to a doctor's office in the past week. The results were then put into the computer and are still being analyzed. The results will show which demographics have an affect on vulnerability and if dignity and vulnerability are in fact related. By understanding more about vulnerability and its relationship to dignity through this study, nurses may be able to better affect a person's vulnerability.



204 Room 172 3:10-3:55 Panel 5

Allison Geissert

Dr. Juliette Shellman, Ph.D., APHN-BC (Faculty Sponsor)

Department of Nursing, UMass Lowell, Lowell, MA, 01854

Evaluation of the Effectiveness of an H1N1 Flu Vaccination Program at University of Massachusetts Lowell

Evaluation of the Effectiveness of an H1N1 Flu Vaccination Program At University of Massachusetts Lowell Allison C Geissert, BSN Honors Student, Nancy Quattrocchi MS, APRN, BC, & Juliette Shellman, Ph.D., APHN-BC University of Massachusetts Lowell In response to the influenza A H1N1 outbreak on college campuses, a vaccination campaign at University of Massachusetts Lowell was implemented to prevent an outbreak of the virus. The purpose of this research was to evaluate the effectiveness of the H1N1 flu vaccination clinics at the university, make recommendations for subsequent clinics based on the evaluation, and increase the number of students vaccinated. The university-wide campaign included an H1N1 educational program during residence life training in August, and subsequent prevention programs conducted throughout the campus in the fall, as well as, continual on-line information through the university website regarding hand washing and vaccination information. Evaluation data were collected using mixed research methods via a student-developed online survey, participant observations, and key informant interviews. An online student survey was administered to 9,600 students at University of Massachusetts Lowell by student emails and was used to assess student knowledge and attitudes regarding the H1N1 vaccine in November. Results from the respondents (N= 865) revealed over 50% of the respondents were not planning to get the vaccine because students felt "it was unnecessary" or had "concerns about vaccine safety". The major themes that emerged from the contextual data were fear, mixed messages, peer influence, and the unknown. Subsequently, a student-developed online H1N1 Myths vs. Facts education sheet was distributed university wide via daily campus announcements before holding additional H1N1 vaccination clinics. The importance of student-university collaborations for student health promotion and recommendations for future campus vaccination programs will be presented.



205 Room 162 4:05-4:50 Panel 6

Cory Zelas

Karen Plotkin (Faculty Sponsor)

Department of Nursing, UMass Amherst, Amherst, MA, 01003

The Lived Experience of Individuals at Midlife with Type II Diabetes

The prevalence of type II diabetes is increasing rapidly worldwide, and healthcare professionals will be faced with the challenges of caring for these individuals at rising rates accordingly (Karlsen & Bru, 2002). Type II diabetes affects 10.8% of all individuals 40-59 years of age, with 819,000 new cases in this age group every year (NIDDK & NIH, 2008). Diabetes is a chronic disease affecting every aspect of an individual's life including physical health, emotional health, family, social relationships, lifestyle and personal identity. The purpose of this study is to describe the experience of individuals at midlife with type 2 diabetes and to gain insight into how a diagnosis of diabetes may affect individual's lives. The study will involve adults aged 40-60 living in the community diagnosed with type II diabetes within the past five years. Interviews will be conducted using open-ended guiding questions. The interviews will be audio-taped, and the recordings will be secured in a password-protected computer file on a password-protected computer. All additional identifying and coding information will be locked in a separate computer file, and no identifying information will be utilized in the written research report. Data will be analyzed using narrative methodology. A composite narrative will be developed to describe the experience of individuals at midlife with type II diabetes. Potential results include an impact on the participants' lifestyles, professional careers, relationships with friends and family, physical health, emotional health and health practices as a result of their diagnosis of type II diabetes.



Nutrition & Food Science

206 Room 172 1:20-2:05 Panel 3

Charlotte Jones

Mary Kay Cordill (Faculty Sponsor)

Department of Sociology, Cape Cod Community College, West Barnstable, MA, 02668

Celiac Disease : Awareness is Key

Although Celiac Disease was discovered in the nineteenth century it has been very poorly understood, until the last two decades. Celiac disease is a digestive, autoimmune disorder that can emerge at any time throughout the lifespan. It is estimated that 97% of people who have the disease have yet to be diagnosed. This can be attributed to the outdated medical theory that Celiac is a rare or “childhood” disease, or misdiagnosis, even though a simple blood test can accurately detect Celiac Disease. Because of the medical profession’s lack of understanding, patients have a difficult time getting appropriate health care. In the meantime Celiac’s destructive presence can lead to more severe complications, including malnutrition, diabetes, and certain types of cancer. Education of the medical community is the only way to end this suffering. Alice Bast is the Founder and President of the National Foundation for Celiac Awareness. After her personal quest for a correct diagnosis she started the foundation in an effort to provide funding for much needed research. She has been able to collaborate with researchers, healthcare companies, and federal agencies, attempting to improve public awareness as well as the quality of life for those who are “lucky” enough to be diagnosed. This project summarizes steps she has taken to help enact legislation regarding product labeling, and to provide continued education for health care professionals. It also includes material from interviews with celiac disease specialists who contribute to area celiac support groups. Sharing this work can only further the cause; it could save someone’s life.



207 Room 172 1:20-2:05 Panel 3

Kristina Secinaro

Srimathi Kannan (Faculty Sponsor)

Department of Nutrition & Food Science, UMass Amherst, Amherst, MA, 01003

Creating a Website (Food Flash) Focused on the Use of Photography as an International Learning Tool for Nutrition Students

Creating a Website (Food Flash) Focused on the Use of Photography as an International Learning Tool for Nutrition Students. K. Secinaro¹, S. Kannan¹, L. Kinney²; ¹Nutrition Department, School of Public Health and Health, 209 Chenoweth Laboratory, University of Massachusetts, Amherst MA 01003, ²Hospitality and Tourism Department, University of Massachusetts, Amherst, MA Visual learning is a style which emphasizes learning from pictures, videos, and demonstrations. The goal of this project was to create a website (Food Flash) focused on the use of photography as a learning tool for students with an interest in participating in an abroad program. Photography was used to assess portion sizes in eateries across France, Germany, Italy, and Switzerland. Items photographed included all foods eaten while abroad at restaurants, bakeries, cafés, sandwich shops, farmer's markets and fast food chains. Pictures were organized into a slideshow using Photobucket according to the following information: name and description of food item, meal category, location, type of eatery, and evaluation of portion size. A website, Food Flash, was created as a place to display this slideshow and those created by future students. Food Flash represents one way to enhance the cultural competencies of nutrition students and practicing dietitians through the use of photography. The technological basis for this project makes it easily accessible to all students interested in learning about food culture and international nutrition, while the visual emphasis breaks down language barriers and familiarizes students with food and nutrition across the globe.



Philosophy

208 Room 165 10:40-11:25 Panel 1

Michael Demo

Jonathan Skolnik (Faculty Sponsor)

Department of German, UMass Amherst, Amherst, MA, 01003

The Term "Will" in Nietzsche's Will to Power

Nietzsche's concept of the will to power is one of the most compelling and historically consequential elements of his philosophy; it is also one of the most obscure. The objective of my research was to determine what Nietzsche means by the word "will" when he talks about the will to power. Through critical readings of Nietzsche's writings in German and an exhaustive assessment of German continental and American analytic scholarship on Nietzsche's "will to power," I have reached the following conclusions: (1) that any reading of the term "will" as Nietzsche uses it in this concept must avoid assigning the same meanings to the term that are indicated in neighboring contexts where Nietzsche criticizes concepts such as the traditional account of the free human will; (2) that the so-called "metaphysical reading" of the term "will" as synonymous with or analogous to that same term in Schopenhauer's philosophy is contraindicated by Nietzsche's choice to withhold draft material explicitly stating this meaning from his published works; (3) that the so-called "psychological interpretation" according to which "will" refers to a psychological drive or desire is contraindicated by the predominant use of the term "will to power" in the construction "life is will to power"; (4) that a correct reading of the term would account for the level of self-reflexivity perceived by Nietzsche in his presentation of the will to power, a presentation which he describes as an "expression" of that same will to power; (5) that a correct reading of the term would take into account Nietzsche's views on semantic meaning; (6) that in light of conclusions (1)-(5) the meaning of the term "will" in Nietzsche's concept of the will to power is correctly read as unfixed and as tracking the maximization of what I define as the "Macht-value" that is assigned to alternative readings of the use of the phrase "will to power" in a given context. In plain terms, the conclusion is that Nietzsche's use of the word "will" in discussing his concept of the will to power is misread by some analytic approaches, and correctly read in accordance with Nietzsche's own account of semantic meaning. In addition, the concept of the will to power is found to be more closely comparable to a dynamic fictional pseudo-concept than to a concept open to conventional analysis.



209 Room 801 10:40-11:25 Panel 1

Matthew Isaacs

Gary Matthews (Faculty Sponsor)

Department of Philosophy, UMass Amherst, Amherst, MA, 01003

Religious Epistemology in Palestinian National Identity

The interaction between religious epistemological systems and political institutions is as old as society itself. Despite a long history of attempts to integrate, or at least harmonize, religion and the state, the contemporary relationship between the two is at best tenuous and at worst extremely volatile. In no other area of the world is this interaction more relevant to peace and stability than in the Middle East, particularly in regions directly affected by the ongoing Israeli-Palestinian conflict. Focusing on the period from the First Intifada (1987-1993) to the present day, this thesis will examine the ways in which explicitly religious iconography and language have been used by Palestinian political institutions such as the Islamic Jihad Movement in Palestine, the Islamic Resistance Movement (Hamas), and the Palestine Liberation Organization (specifically the Fatah party) and the extent to which this epistemology informs a universalized political philosophy and determines Palestinian national identity. Through this examination, it will be shown that explicit Islamic language and iconography is adopted instrumentally for its universalizing and self-objectifying qualities towards the development of a cohesive political identity among the Palestinian people. This phenomenon will then be analyzed within the framework of Benedict Anderson's theory of nationalism to arrive at an understanding of religion in the special context of the Palestinian Territories, as well as an appreciation of the general position of religious epistemology in forming political identity and the harm that can be done to political theory if one adopts a strict religious-secular dualism.



210 Room 172 2:15-3:00 Panel 4

Sam Kirsch

Henry Theriault (Faculty Sponsor)

Department of Philosophy, Worcester State College, Worcester, MA, 01602

Death By Your Hand: Personal Responsibility and the Death Penalty

There are many individuals in the United States who support the practice of capital punishment, especially when dealing with particularly heinous crimes. Whereas they may find their intentions to be pure and their view based on sound reasoning, an important question arises regarding the consistency of the reasoning of many people who support the death penalty. If it is morally right – even morally obligatory – that some convicted criminals be executed, then it follows that it is morally acceptable for some individuals to be the executioners. This paper considers the question of whether moral consistency requires those who hold that it is morally right to execute some convicted criminals to also be willing to serve as executioners themselves.



211 Room 165 10:40-11:25 Panel 1

Michael Murphy

Henry Theriault (Faculty Sponsor)

Department of Philosophy, Worcester State College, Worcester, MA, 01602

Defining Genocide: The Problem of Intent in the U.N. Genocide Definition

The U.N. Convention on the Prevention and Punishment of the Crime of Genocide made an important step forward in the hope of ending genocide in the future. The convention officially defined the criteria that must be met for an act or set of acts to be considered genocide and for a person committing the acts to be guilty of genocide. The definition has serious problems, however. It was a political agreement among sovereign states and was ratified only after a series of compromises. In addition, the definition contains vague elements that make enforcement difficult. Most notably, the definition stipulates that genocide occurs only as the result of the “intent to destroy” a target group. This raises problems for cases of apparent genocide in which there was no specific “intent to destroy” at the highest levels, but instead a process of destruction pursued on the ground. The example used in this investigation is the 1937-38 massacre of Chinese people in Nanjing by Japanese soldiers. This paper uses the Nanjing case to argue that the notion of “intent” in the U.N. Convention should be reinterpreted or rethought in order to make the Convention more effective in preventing and punishing genocide.



Physics

212 Room 175 3:10-3:55 Panel 5

Michael Boehm

Chandra Yelleswarapu (Faculty Sponsor)

Department of Physics, UMass Boston, Boston, MA, 02125

Nonlinear Optical Characterization of Clay Nanomaterials

The third-order nonlinear optical parameters of materials are responsible for the variation of refractive and absorptive properties of media. The measurement of these parameters is important for many practical applications including optical switching, optical data processing and biomedical imaging. Among several methods of analysis, the Z-scan technique is relatively simple and offers high sensitivity in measuring the absorption coefficient and nonlinear coefficient of refraction. This method is utilized to determine the complex third-order susceptibility of the clay nanomaterials. A frequency doubled Nd:YAG laser producing 532 nm wavelength laser pulses of 3 ns pulse width is used to attain the high energy densities necessary to elicit the nonlinear response. The laser is focused onto the sample using a 20 cm focal length lens. The sample is mounted on an automated translation stage and is translated along the beam through the focal point. Transmitted intensity at each position is recorded and normalized to its far-field value. Both the "closed" and "open" aperture Z-scan experiments are performed and their respective data is obtained. The "open" aperture Z-scan depicts only those losses due to the linear and nonlinear absorptions of the sample whereas the "closed" aperture Z-scan reflects the effects of both absorption and scattering. This data is then fit to a curve to obtain the nonlinear absorption coefficient and nonlinear coefficient of refraction. Specialized software for the Z-scan technique has been coded in the LabView development environment in order to automate and expedite sample analysis and computation. Due to their nontoxicity, inertness and rapid biodegradation, these clay nanomaterials may find applications in the biomedical field similar to synthetic nanomaterials like carbon nanotubes.



213 Room 175 3:10-3:55 Panel 5

Justin McKennon

Gaurav Khanna (Faculty Sponsor)

Department of Physics, UMass Dartmouth, N. Dartmouth, MA, 02747-2300

A Comparative Examination of CUDA and OpenCL for a Gravitational Wave Source Modelling Application

In recent times, there has been a considerable rise in numerical computer simulations in nearly every area of science and engineering. Many of these applications are very resource demanding and require powerful compute hardware to perform. As CPU clock speeds stall out around 3 GHz, many processor manufacturers have switched to multicore systems to increase performance. But even these styles have their limitations (power consumption, heat dissipation). By making use of GPU programming languages (OpenCL, CUDA), one can harness the power of hardware already contained in a desktop system, and obtain over an order of magnitude gains in performance, all things considered. In my work I will apply these aforementioned programming techniques to illustrate their power in a Gravitational Wave Source Modelling Application.



Political Science

214 Room 163 11:35-12:20 Panel 2

Jillian Aberdale

Paula Stamps (Faculty Sponsor)

Department of Public Health, UMass Amherst, Amherst, MA, 01003

United States Presidents and Biological Warfare: Policy Decision and Presidential Impacts

ABSTRACT Title: United States Presidents and Biological Warfare: Policy Decision and Presidential Impacts Author: Jillian Aberdale, Middle Eastern Studies CE Type: Course Capstone Thesis Approved By: Paula Stamps, Public Health Dept The United States' current position on bioterrorism and biological warfare dates back to President Nixon's announcement on November 25, 1969 that the United States would renounce an offensive biological warfare program and keep only a defensive research and development program. Nixon's assertive decision marked the first time a major world power had renounced an entire category of weapons and warfare, and though there have been no abrupt policy changes in this area since his decision, various presidents have implemented their own budgets and policies in the area of biological warfare. The purpose of this paper is to examine the bioterrorism and biological warfare policies of three presidents, Presidents Richard Nixon, William Clinton, and George W. Bush, and to examine how these policies came into effect. Declassified government documents, newspaper articles, and historical and political papers and journal articles written about the presidents and domestic and international events occurring during their presidencies will be used in order to determine how and why these policy decisions came about. Through critical analysis, these sources will be examined to determine what steps were taken by the presidents to arrive at their policy decisions, and whether these were well-informed decisions or whether the presidents were influenced by other factors such as personal biases or members of their staffs. This paper will demonstrate that the presidents' policy decisions were influenced by both internal politics within their administrations as well as international events that created a particular political atmosphere. It will further show that the presidents' personal opinions largely influenced these policy decisions.



215 Reading Room 10:40-11:25 Panel 1

Alexandra Bonazoli

Jillian Schwedler (Faculty Sponsor)

Department of Political Science, UMass Amherst, Amherst, MA, 01003

Re-Imagining the Murals of Northern Ireland: Can Tools of Division be Reoriented to Promote Unity?

In 1998, with the signing of the Good Friday Agreement, thirty years of violent sectarian conflict in Northern Ireland came to an end. Since then the government and people of Northern Ireland have faced a difficult task in maintaining peace and healing the deep rifts left over from the Troubles. Although it is undeniable that progress has been made, highly visible messages of lingering divisions still stare out from city wall: murals painted by members of the two opposing communities containing messages promoting sectarianism and terrorism. My research intends to explore whether Northern Ireland's mural tradition can be reconciled with its continued pursuit of peace and community integration, and through what means this might be possible. In pursuing answers to these questions, I have turned principally to existing literature on the history of the Northern Ireland conflict and peace process, the history of mural painting in Northern Ireland, and the theory of conflict resolution and reconciliation processes. This was supplemented by primary sources: photographs of murals in Belfast and other towns throughout the North, and news paper articles covering recent developments in mural painting. I hope to demonstrate that symbols of identity, in this case murals, can be oriented as tools to promote reconciliation and unity, even in those places where they have previously been used to divide and intimidate.



216 Room 172 11:35-12:20 Panel 2

Matthew Costa

Robert Darst (Faculty Sponsor)

Department of History, UMass Dartmouth, N. Dartmouth, MA, 02747-2300

Moving Beyond Race: Why Ethnicity, Nationality and Civilization Are More Significant to Political and Social Discourse

Nobody would claim that race is inconsequential in today's society. However, most people cannot define race because its full meaning is unclear. The idea of race is not a new one, but the idea of replacing race is. The purpose of this study is to demonstrate the historical and contemporary significance of race and to propose a new system to understand the variation between different peoples. The research consists of analyzing literature on race from a scientific, political and social standpoint. Literature dealing with other methods of dividing human groups was also utilized, in particular Samuel P. Huntington's *The Clash of Civilizations and the Remaking of World Order*. The results of the study are that a new system of ethnicity, nationality and civilization can replace race. This is a far more useful framework for understanding the differences between unique groups of people and how they fit into society and politics. The findings of the study are important because they could put an end to hundreds of years of ignorance and racism based on false assumptions. If society were able to rethink its understanding of race it could possibly move beyond the discrimination that has marked humanity for over four-hundred years.



217 Room 803 10:40-11:25 Panel 1

Jennifer Egan

Elizabeth Bussiere (Faculty Sponsor)

Department of Political Science, UMass Boston, Boston, MA, 02125

Native American Sovereignty and the Law

Native American sovereignty has been a long contested issue in the United States by both the government and Native American Tribes. The general public has little understanding and pays little acknowledgment of the concept of Native American Sovereignty, and the myth of the “vanishing Indian” has pervaded modern culture. Today tribes can gain the federal government’s recognition to become, to some extent, sovereign independent nations. However, there are clear contradictions embedded in the issue of Native American sovereignty, especially regarding the constitution and the laws of the United States government. One can look in competing ways at the sovereignty of Native Peoples, namely, as either as part of the constitution or as being “extra-constitutional,” i.e., as falling outside the U.S. constitution, laws, and treaties. My argument is that, because Native American Sovereignty actually predates the arrival of Europeans, Native Americans are not bound by the constitution, and they have an inherent right to exercise their sovereignty. To support my argument I will analyze relevant Supreme Court decisions such as the Marshall decisions (i.e. Worcester v. Georgia or Cherokee V. Georgia), Ex Parte Crow Dog (1883), Talton v. Mayes (1896), Johnson V. McIntosh, and Morton V. Mancari, among others. I will also use evidence from the U.N. Declaration of Indigenous Rights, the American Indian Religious Freedom Act (AIRFA), the Indian Child Welfare Act (ICWA), and other policies from both the United States and the International Community.



218 Room 163 4:05-4:50 Panel 6

Ana Carolina Gomez-Marchena

Paul Watanabe (Faculty Sponsor)

Department of Political Science, UMass Boston, Boston, MA, 02125

Immigrant Student Activism in the United States

In the last decade, a social movement for immigrant rights has become a prominent force pushing for immigration reform. Recently, a new kind of activism within this movement has developed. Students have organized around a piece of legislation called the DREAM Act (Development, Relief and Education for Alien Minors Act). The act, if passed, would offer a 6-year path to legalization for undocumented youth who came to the United States before they were 16 years old. Different versions of the bill have been considered since 2001. The fight to pass the Dream Act has produced a stream of immigrant youth activists, who have become politically engaged through their high schools, colleges, national coalitions, the Internet and blogs. What is remarkable about this new group of activists is that those who form the leadership positions within the organizations are undocumented students themselves. In this paper, I will examine this immigrant student activism by focusing upon immigrant student organizations in Florida (Students Working for Equal Rights), New York (Youth Leadership Council), Indiana (Latino Youth Collective), and Massachusetts (Student Immigrant Movement). Interviews with student leaders of these organizations will be conducted to explore the following components: the organizations' outreach, demographic makeup, governing structure, and the responses to their activism. The United We Dream Coalition, based in Washington D.C., will also be examined. This coalition serves as a central structure for the various local organizations across the nation. I argue that these youth activists, despite the limitations of their undocumented status, are creating a national social movement that could have a tangible impact on legislation. Perhaps more importantly, this movement suggests how political activism can overcome and indeed build upon those who have traditionally been regarded as unpromising activists- the young and the undocumented.



219 Room 163 11:35-12:20 Panel 2

Russell Hall

Frederick Lewis (Faculty Sponsor)

Department of Political Science, UMass Lowell, Lowell, MA, 01854

The American Primary and Caucus System: The Eliminating Power of States That Have the Initial Vote in the Primary Elections

I have researched the reform movement that introduced the Presidential primary system in the early twentieth century and studied the results of the last two decades of primary elections. I have concluded that although the primary system was promoted as a means to advance democracy and weaken the influence of the machine politics that was dominant at the time, it has had an unintended result. A few States, often small and unrepresentative of the nation as a whole, that hold their primaries/or caucuses early in the year, are now able to shape the results of the entire election by eliminating candidates who do not gain sufficient momentum before the vast majority of Americans even have the chance to vote. Furthermore, States that attempt to gain a greater voice by moving their elections to an earlier date risk being ostracized by the major political parties.



220 Room 165 3:10-3:55 Panel 5

Azeen Khanmalek

Jillian Schwedler (Faculty Sponsor)

Department of Political Science, UMass Amherst, Amherst, MA, 01003

Building American Identity in Los Angeles

Why was Los Angeles built in such a sprawling, expansive manner? I will answer this question by studying the urban form and built environment of Los Angeles, to explain that visions of the ideal American life were the root of Los Angeles' form, as it came to function as and symbolize the American dream. The anomaly of Los Angeles' form is attributed most often to the fact that Los Angeles rose with the popularization of the automobile, causing the layout to conform to the nature of individual vehicle travel. While no doubt exists that the popularization of the automobile is a major factor in the urban form of Los Angeles, I posit that several trends in the conception of American life and identity are evident in Los Angeles' form and layout. Los Angeles encapsulates several conceptions of American lifestyle and identity in its balkanized suburban nature such as the trends towards pastoralism and country living evident in the writings of such figures as Thomas Jefferson, as well as the romantic and transcendental writers. Through research into the thoughts, designs, and lives of major figures in Los Angeles, such as land owners, developers, or architects and designers, as well as research into housing styles and trends in Los Angeles, and how they reflect popular conceptions of American life, I will show that that the urban form of Los Angeles has developed because it was an articulation of various trends in the ideal American way of living, including an emphasis on anti-urban attitudes and pastoralism, home ownership, and family life as the pinnacle of being American. I will show that these trends were built in Los Angeles, and sold to Americans as the incarnation of ideal America, a place where they can live out their hopes and dreams.



221 Room 163 11:35-12:20 Panel 2

Caroline Koch

Jesse Rhodes (Faculty Sponsor)

Department of Political Science, UMass Amherst, Amherst, MA, 01003

Drawing A Parallel: Education and Health Care Policies within the Clinton and Bush Administrations

Presidents Bill Clinton and George W. Bush both considered passing significant legislation in the realm of education and health care during their respective presidencies. However, while education policies changed dramatically during both presidencies, health care policies experienced far fewer profound changes. This is evident by the two major pieces of legislation Clinton passed within education: Goals 2000: Educate America Act and the Improving America's Schools Act, in contrast with his failure to pass a universal health care plan. Subsequently, Bush expanded Clinton's education policies by implementing the No Child Left Behind Act, and then made much smaller strides in reforming the health care system by enacting the Medicare Prescription, Improvement, and Modernization Act. How, then, are the varied paths of federal policy in education and health care explained? My study attempts to answer this question by examining the major interests groups who have shaped education and health care policies. Given the fact that there were similar conditions during each presidency (e.g. party control of government, the economy, and presidential popularity), interest groups have provided to be the underlying cause for the major divergence in the two policy areas because of their varying behaviors across both policy areas. Specifically, I assert that the relative levels of opposition and support from interest groups who are targets of regulation played a crucial role in changing the outcome of the education and health care policies in both administrations. In assessing the powerful influence of interest groups on policy outcome, specifically in the education and health care sectors, I conclude that President Barack Obama as well as future American Presidents must pay heed to the engaged and disengaged citizens who shape the domestic policies of the American political system.



222 Room 165 3:10-3:55 Panel 5

Natasha Ludwig

Phillip Zampini (Faculty Sponsor)

Department of Political Science, Westfield State College, Westfield, MA,
01086

The United States 2050: The Hispanic Majority

This study attempts to determine whether or not the population increase predictions made by the U.S. Census Bureau about the rising numbers of Hispanics in the U.S. are supported by other sources and if so, what effect this new potential majority may have on politics and government in the United States. Demographic trend data from the U.S. Census Bureau and Pew Hispanic Research Center, along with other scholarly peer-reviewed resources, are used to determine that the Hispanic population will almost certainly become a majority by the year 2050. In addition public opinion poll results from the Pew Hispanic Research Center are used to determine the current political and social values of Hispanics residing in the United States. Further research sheds light on the number of Hispanics elected to state office, serving in the U.S. Congress and appointed to the federal courts. We attempt to determine future trends in Hispanic office-holding and political participation. This research is then used to determine how increased Hispanic participation might affect public policies in the areas of public education, affirmative action, and abortion. Results of this study will challenge the misconceptions that many Americans have about the Hispanic population and perhaps serve to reduce the anxieties of those who are fearful of a dominant Hispanic majority.



223 Room 163 1:20-2:05 Panel 3

Jorge Morales-Lopez

Dr. Jeffrey Gerson (Faculty Sponsor)

Department of Political Science, UMass Lowell, Lowell, MA, 01854

The West Campus Farming Initiative

The West Campus Farming Initiative is the repurposing of the University of Massachusetts Lowell West Campus, from its former use as an academic campus to the site of a model urban farm. In Lowell, the demands for locally grown and culturally appropriate foods are at an all time high. This demand has led to an increased need for urban farm space. The University of Massachusetts Lowell can support local agricultural ventures in Lowell and surrounding communities, by turning an unused and at present unproductive campus into a model urban farm. West Campus made up of 34 acres and is a mix of multipurpose hardscapes, undeveloped green space and former academic buildings. The Campus once housed the University's Graduate School of Education until it was moved in the spring of 2003 and at present is vacant. The project involves a complete environmental study and site analysis of west campus, with a focus on future agricultural use. A complete environmental and developmental history of the Campus and immediate area are also part of the initial research. The research and project are currently in progress and ongoing. The project's goals are: 1. To identify current local agricultural programs within the community in need of urban farm space. 2. To work closely with local farmers to develop agriculturally appropriate farming ventures for west campus. 3. To create and foster a relationship with the University of Massachusetts Lowell and the local farming community. 4. To engage local farmers and University to create and further develop local agriculturally based economies.



224 Reading Room 10:40-11:25 Panel 1

Kiersten Rooke

Frederic Schaffer (Faculty Sponsor)

Department of Political Science, UMass Amherst, Amherst, MA, 01003

Marabout Leadership and Electoral Politics in Senegal

In the West African nation of Senegal, the history of the state has been closely linked with the history of the major Sufi Muslim brotherhoods that dominate Senegalese religious life. The leaders of these brotherhoods, called marabouts, have long enjoyed considerable influence over political life in the country, despite the staunchly secular nature of the state according to its constitution. This religio-political relationship has changed, however, as the marabout leadership has evolved. The end of the twentieth century saw the transition of leadership from the sons of the founders of the brotherhoods to their grandsons, a much larger pool of younger men with spiritual inheritances vying for the same number of adherents. The purpose of this paper is to compare political activity, especially as it relates to elections, between the generation of the sons and the generation of the grandsons. A specific look at the followers targeted and with what doctrine, the methods of organizing those followers, and the willingness of marabouts to endorse political candidates has revealed a greater boldness among marabouts making political statements, though this has been accompanied by the growing perception among Senegalese Muslim voters that these statements are not binding on the votes of the followers. This has resulted in an increased politicization of the religious leadership, but in a way that has also increased political competition. These trends, while questionable in their implications in the separation of "mosque and state," seem to be favorable overall to health of Senegalese democracy.



Psychology

225 Room 163 4:05-4:50 Panel 6

Levi Adelman

Nilanjana Dasgupta (Faculty Sponsor)

Department of Psychology, UMass Amherst, Amherst, MA, 01003

Where Multiculturalism Ends and Biases Begin: Expressions of Ethnic Identification Can Negatively Impact Intergroup Relations

With societies around the world becoming increasingly multicultural, it is critical to seek a clear understanding of the psychological factors that promote intergroup harmony and the inclusion of diverse social groups within a larger superordinate group. Although there has been much ideological debate on the costs and benefits of implementing assimilationist vs. multicultural policies, there has been less empirical work on the conditions under which people embrace or shun ethnic minority individuals who exemplify these competing ideologies. The current research attempts to fill this gap in the literature by examining how majority group members perceive ethnic minority individuals (specifically Native Americans) who embrace their distinct subgroup identity either in a public manner (i.e. whose ethnic expressions are visible to others in public spheres) or in a private manner (i.e. whose ethnic expressions are confined to the home). Using both implicit and explicit measures of prejudice and inclusion, results revealed that White majority group members perceive Native Americans to be less authentically American when they express an allegiance to their ethnic subgroup in public spheres, but not when such identification was maintained at home. Similarly, results revealed that Whites show greater prejudice (both implicitly and explicitly) toward Native Americans who publicly express their ethnic identification, but not when such ethnic identification is maintained at home. Additional findings and implications will be discussed.



226 Room 809 11:35-12:20 Panel 2

Andrea Broverman

Martha Yoder (Faculty Sponsor)

Department of Commonwealth Honors College, UMass Amherst, Amherst, MA, 01003

Living the American Way: A Cross-Cultural Examination of Mental Illness in Immigrants

The prevalence of mental illness is not evenly distributed across different ethnic groups within the United States. The immigrant paradox phenomenon illustrates this disparity, stating that immigrants upon arriving in the United States experience lower rates of mental illness than individuals born in this country. As immigrants live longer in the United States and become acculturated to American lifestyles, the risk of developing these disorders increases. Past research has focused on Latino immigrant experiences, but this paper will argue that a similar pattern occurs among black Caribbean immigrants as well. Furthermore, this occurrence is not limited solely to immigrants. African American groups also experience higher rates of mental illnesses than do non-Hispanic whites. Across different groups, some factors may be more prominent than others in determining mental health outcomes. This paper will analyze how income and economic stress faced by many recent immigrants may increase their risk of facing poor mental health. It will also look at family and community supports and how these may provide a buffer against the development of mental disorders for immigrant families. Lastly, the effects of racialization and the stress of being a minority will be studied in relation to their impact on mental health in African Americans. This paper proposes that different factors will be more prominent for Latino versus Caribbean immigrants and African Americans in determining their risk for mental illness. Through a thorough examination of how the immigrant paradox plays out in different ethnic groups, a deeper understanding of important factors that contribute to and protect against this occurrence can be found.



227 Room 163 4:05-4:50 Panel 6

Alison Eccleston

Nilanjana Dasgupta (Faculty Sponsor)

Department of Psychology, UMass Amherst, Amherst, MA, 01003

The Effects of Ethnic Identification on the Psychological Inclusion of Minorities in the Nation State

With increased migration of different social groups around the world, many countries have become increasingly diverse. In the United States, for example, nearly a third of its population is comprised of ethnic minorities. With increased diversity has come contentious debate over whether these diverse groups should shed aspects of their ethnic identities and assimilate into mainstream society or simultaneously embrace both their ethnic and national identities in order to be included in the national fold. Our research examines whether exposure to both White and non-White ethnic group members (Polish vs. Chinese Americans) who express their distinct cultural identities impact the extent to which their ethnic group is included or excluded from the nation state. Specifically, the present research distinguishes between ethnic identity that is privately maintained in the confines of one's home and ethnic identity that is publicly acknowledged outside of one's home. Using implicit and explicit measures of psychological inclusion, results revealed that participants perceive both White and non-White ethnic groups as less American when they expressed their ethnic identification in the public sphere (relative to when such ethnic identification was privately maintained), but only when such sentiments were consciously assessed through self-report measures. By contrast, when such sentiments were assessed indirectly, seeing ethnic minorities who publicly expressed their ethnic identities decreased the extent to which their group as a whole was perceived as American, while exposure to equivalent Whites had no impact on the extent to which their ethnic group was perceived as American. In other words, at an implicit level, participants' responses revealed a double standard in the degree to which they thought it was appropriate for White vs. non-White individuals to be publicly ethnic.



228 Room 168 1:20-2:05 Panel 3

Vanessa Gentleman

Joanna Gonsalves (Faculty Sponsor)

Department of Psychology, Salem State College, Salem , MA, 01970

Origins of Erotic Transference in the Borderline Personality

This paper addresses the etiology and components of Borderline Personality Disorder (BPD) that result in the formation of an erotic transference in the dynamics of the psychotherapeutic relationship. Considerations are based upon the research of those from the psychoanalytic and psychodynamic traditions such as Otto Kernberg, John Bowlby, and Glen Gabbard, and their theories surrounding attachment theory and object relations. Specific forms of attachment patterns and relationship styles are discussed, as well as the utilization and mobilization of related defense mechanisms in the psychotherapeutic relationship. Finally, implications and recommendations for treatment are addressed.



229 Room 168 1:20-2:05 Panel 3

Lisa Hermann

Joseph Camilleri (Faculty Sponsor)

Department of Psychology, Westfield State College, Westfield, MA, 01086

The Effects of Perceived Cuckoldry Risk on Partner Rape Propensity and Future Discounting

In this study we are extending research on partner rape by examining the immediate psychological effects of perceived cuckoldry risk (i.e., infidelity risk). Using quasi-experimental designs, Camilleri and Quinsey (2009) found that cuckoldry risk was related to partner rape in both community and forensic samples. In the present study we experimentally manipulated cuckoldry risk by randomly assigning participants to read either stories depicting partner infidelity or stories depicting consensual sex, then measured their self-reported propensity to engage in partner sexual coercion. We also measured participants on future discounting to examine how perceived cuckoldry risk might influence impulsive decision-making. Our results on the effects of cuckoldry risk on partner rape cognition and future discounting will be discussed.



230 Room 165 11:35-12:20 Panel 2

Liane Ledger

Virginia Powers-Lagac (Faculty Sponsor)

Department of Psychology, Westfield State College, Westfield, MA, 01086

Marijuana: How Safe is It?

There is currently much debate in the United States over the legal status of marijuana. It is the most popular illicit drug in the U.S. While there are both positive and negative consequences of using marijuana, many people consider it to be relatively safe. There is a lack of awareness of the potential for severe side effects, both physically and psychologically, associated with regular, long-term, and even short-term, usage. This presentation reviews research found in medical and psychological literature about the adverse effects of marijuana usage and summarizes the results. Marijuana usage has been linked to poorer academic performance, lung disease, cancer, and circulatory problems. Infants exposed to the drug during pregnancy have been found to have an increased risk of health and behavioral problems. Marijuana use has been shown to have a negative impact on a number of psychological conditions, such as schizophrenia, bipolar disorder, and substance dependency. The positive results of marijuana usage found in scientific research and literature, such as its use in alleviating certain cancer-related pain, are more well-known than the negative results and thus I do not address these issues in my presentation. It is my hope that this presentation will increase understanding of the potential negative consequences of marijuana usage.



231 Room 165 11:35-12:20 Panel 2

Nicholas Morrison

Michael Constantino (Faculty Sponsor)

Department of Psychology, UMass Amherst, Amherst, MA, 01003

The Therapeutic Alliance: Expert and Student Perspectives on Current and Ideal Training Practices

The therapeutic alliance has consistently emerged as a transtheoretical, empirically-supported element of successful psychotherapy. However, despite the clinical importance of the alliance, virtually no literature exists on the degree to which training programs incorporate alliance-fostering components into their curricula and clinical practica. The aim of the current study is to uncover an operational definition of gold standard alliance training by examining qualitatively expert and student perspectives. Data will derive from 10 interview transcripts of the proceedings of 2 semi-structured, alliance-based discussion groups conducted at separate professional psychotherapy conferences, and will be analyzed according to the Consensual Qualitative Research paradigm.



232 Room 168 2:15-3:00 Panel 4

Matthew Neville

Marcus Patterson (Faculty Sponsor)

Department of Psychology, UMass Boston, Boston, MA, 02125

The Connection Between Attachment and Childhood Punishment

The principal investigator (Milburn) has been exploring hypotheses derived from Affect Displacement Theory for over 10 years. In particular, Milburn and colleagues have found a consistent and significant link between childhood punishment and important aspects of adult cognition, e.g. hostile attributions, authoritarianism, and political beliefs and behaviors. This research has been limited because the link between early punishment and later cognition has not been thoroughly explored, nor has a model of affect displacement mechanisms involving cognition and political beliefs been provided. The current study is designed to address these limitations. In particular, we will explore the role of attachment and empathy and their place in a structural model that permits a fuller demonstration of the Affect Displacement hypothesis that Milburn has proposed in prior studies. This study is also designed to expand the participant pool to include individuals who hold a broader range of political views, especially those views that bear directly on this research, specifically individuals in the military. We currently have 54 participants and expect to recruit up to 300 individuals. Success in expanding our sample will help distinguish the relationship between variables while also providing a stronger foundation for future research.



233 Room 168 2:15-3:00 Panel 4

Christina Sanon

Joan Brenner (Faculty Sponsor)

Department of Psychology, Bunker Hill Community College, Boston, MA,
02129

Treatments of Developmentally Disabled persons: Then and Now 1960 to
2009-2010

Individuals who suffer from developmental disabilities are everywhere, part of our society. This study was implemented to dig deep into the reality of how individuals who suffered from mental disabilities was treated around 1950's,60's 70's and to analyze current treatments of these individuals. The research strategies consumed for this project was investigating current facilities that treat and care for persons with developmental disabilities. Websites on the Internet were BHCC.com website (college library website) google.com and books. This research is to show the evolution of how individuals who in the past was labeled "mentally retarded" was treated unreasonably to now people with "developmental disabilities" are treated with dignity. This project is to insinuate continued efforts to better these individuals lives and to see how research was done to come to that very conclusion.



234 Room 163 2:15-3:00 Panel 4

Agnes Stasiewicz

Bridgett Perry-Galvin (Faculty Sponsor)

Department of Psychology, Framingham State College, Framingham, MA,
01702

Media Influence on Female Body Image and Self-Esteem

The media has immense influence on how people perceive the world. Increasingly, the media impacts the standards and ideas of reality. Beauty standards are one major aspect that is influenced, even distorted, by the media. Movies, television, and magazines have set the standards for defining beauty that women strive to achieve. Although these values may be set subconsciously, the affects are seen overtly. As a result of these images, body image and self-esteem issues are becoming increasingly troubling problems, especially among females. This paper examines the influence of both printed and electronic media on the female self-image from a developmental perspective, childhood to adulthood. Images in both printed and digital media for the last five years were reviewed and analyzed for the messages regarding beauty standards they send to females across the lifespan. Results are discussed in terms of the changing impact the media has on female self image.



Public Health

235 Room 162 4:05-4:50 Panel 6

Gillian S Murphy

Elizabeth Garlo

Mansoureh Tajik (Faculty Sponsor)

Department of Public Health, UMass Lowell, Lowell, MA, 01854

Video Production and Service Learning: Ways to Enhance Learning

Objective: We evaluated how producing health promotion videos as part of a service learning project could enhance student learning and educational experiences in an undergraduate health promotion course. Specifically, we explored the impacts on students' critical thinking and media literacy skills. Methods: Two identical focus groups were conducted with a sample of 12-14 students randomly selected from among 57 students who had completed a health promotion course at UMass Lowell and produced health promotion videos as part of course requirements. The focus group guidelines were designed based on three critical components of the engagement theory that: 1) learning occurs in a social context (Relate), 2) course work should be hands-on and project-based (Create), and 3) the project should have an authentic outside non-academic focus (Donate). Results: Students' communication and time management skills were strongly affected as a result of team and collaborative works with peers, media center staff, and local community organizations (Relate). Production process was viewed as difficult and intense but extremely rewarding and purposeful (Create). Community focus of the videos and their regular use by collaborating organizations provided an authentic use of what students produced (Donate). Conclusion: Including course-relevant video production and service learning projects could greatly enhance student learning and their educational experiences as well as improve education and training of current and future public health professionals especially as it relates to digital media. As a suggestion for improvement, a more explicit linkage must be made between the course material and the actual video production process for an improved understanding of the core course concepts.



236 Room 809 2:15-3:00 Panel 4

Elizabeth Lepore

Martha Yoder (Faculty Sponsor)

Department of Commonwealth Honors College, UMass Amherst, Amherst, MA, 01003

The Lost Generation: How Institutions have Shaped the Health of Foster Children in China and the United States

On any given day there are over 510,000 children and youth in foster care in the United States alone. The majority of these children have already experienced abuse and neglect and come from families with the fewest psychosocial and financial resources. In China these problems are even more drastic due to the large population and strict family planning policy. Not only do the children within these welfare systems often carry a predisposition for physical, mental, and developmental health problems, but they are also subject to poor institutional conditions during infancy and early childhood, the most critical periods in which characteristics such as trust, self-esteem, and focused learning are developed. This thesis seeks to examine the different institutions available as placement settings in the United States and China and the lasting effects they have had on the physical and emotional health of children in foster care. Several social, economic, and political factors have shaped the way that child welfare systems operate today. By focusing on the history of orphanages and foster families in both of these countries, this paper will explore these changing factors, the cultural values that accompany them, and the resulting implications for the healthcare of foster children.



237 Room 809 11:35-12:20 Panel 2

Kelly McGovern

Martha Yoder (Faculty Sponsor)

Department of Commonwealth Honors College, UMass Amherst, Amherst, MA, 01003

Big Farms and Big People: How Factory Farming Fuels Discrimination in the United States

The past fifty years have brought significant changes to the United States food industry. Rather than growing their own food or buying from local farmers, Americans have become the victims of large corporations and factory farms. Michael Pollan has asserted that “nutritionism,” and the common misconceptions that accompany it, combined with the change in America’s food system, has led to a decline in the overall health of United States citizens. The most visible consequence of the industrialization of the food industry has been the obesity epidemic that has spread among America’s youth and adults. This paper asserts that the industrialization of the United States food industry has created a new form of prejudice in the form of obesity discrimination.



238 Room 809 3:10-3:55 Panel 5

Nicholas Milano

Martha Yoder (Faculty Sponsor)

Department of Commonwealth Honors College, UMass Amherst, Amherst, MA, 01003

A Veteran's War: How Film has Impacted Combat Veterans' Lives at Home

War's impact on the human mind can never be overstated. When combat veterans return home, they are often reintroduced into a society that neither understands the psychological complexities of war nor how to treat such invisible wounds. American soldiers have served admirably in seven different wars and have seen combat in various other deployments over the last 100 years. Though their physical injuries might be clearly visible, for some the psychological toll is even more overwhelming. Close to 31 percent of Vietnam veterans and nearly 17 percent of Iraq War veterans are estimated to have struggled with post-traumatic stress disorder, or PTSD. This paper will examine the historical development and official recognition of PTSD. Its main focus will be the connection between the media's representation of combat veterans and the perceptions that the greater American society has of these men and women. Conclusions will show that these stereotypes are greatly exaggerated and have seriously hampered veterans' transitions back to everyday lives.



239 Room 172 3:10-3:55 Panel 5

Adanma Osakwe

Janis Kapler (Faculty Sponsor)

Department of Economics, UMass Boston, Boston, MA, 02125

Patents and Compulsory Licensing in the Pharmaceutical Industry in Thailand

The pharmaceutical industry is one of the most productive and profitable industrial sectors. The relationship between patient care, patents, pharmaceuticals, and intellectual property rights is fundamental. The pharmaceutical industry argues that it is dependent upon adequate patent protection. Patent protection serves as a medium through which drug companies generate sufficient revenues to compensate for the research and development necessary for the introduction of new drugs. Patents protect pharmaceutical company's investment in research and development by providing "exclusive rights of sale," disallowing competitors from marketing "generic" versions of the same pharmaceutical. However, does patent protection result in higher prices and fewer choices for patients with debilitating or life-threatening illnesses and if so does that serve the common good? In addition, should the same practices be applied across-the-board despite fundamental inequities between developed and under-developed countries? For example, should the Thai government be required to enforce patent protection where the AIDS virus affects the quality of life of millions of people and a majority of the population cannot afford treatment? The United States government has actively pursued patent protection. Analyzed in this paper are the complex mechanisms of patent protection and human rights. In particular, the examiner focuses on the government of Thailand, the issuance of compulsory licenses, pricing of drugs for pandemics, especially HIV/AIDS in Thailand.



240 Room 809 10:40-11:25 Panel 1

Rima Patel

Martha Yoder (Faculty Sponsor)

Department of Commonwealth Honors College, UMass Amherst, Amherst, MA, 01003

Microbe Mania: America's Quest for an Aseptic Life and its Impact on Immune System Integrity

From 1880 to 1900, a revolution occurred which profoundly changed the way Americans think about microbes and germs. Following the work of Louis Pasteur and German scientist Robert Koch, it is now common knowledge that microscopic organisms can cause disease in humans. In recent years, Americans have taken this knowledge and developed extreme behaviors such as the overuse and reliance on antibacterial household cleaning agents and hand sanitizers. This research will seek to link these contemporary behaviors to public health campaigns of the twentieth century through media sources such as posters, newspaper, and magazine advertisements. After establishing such a connection, this thesis will focus on the negative immunological health effects, as evidenced by current microbiology research, of decreased germ exposure. Additionally, recommendations will be made on how to alter American perceptions and behavior to reestablish immunological health integrity.



241 Room 809 11:35-12:20 Panel 2

Caitlin Saia

Martha Yoder (Faculty Sponsor)

Department of Commonwealth Honors College, UMass Amherst, Amherst, MA, 01003

Universal Health Care: The Nature of Resistance

Increasing numbers of Americans are struggling or simply unable to afford the rising cost of health insurance, placing health care reform, once again, on the political agenda. Over the course of the last century, attempts to implement national health insurance have repeatedly failed. The health care system in the United States is unique among other developed industrialized nations in its absence of a government-sponsored insurance plan available to the general public. Fears and concerns regarding health care reform are not new; the majority of the current discourse had emerged by the mid 1900s. This paper attempts to identify the roots of opposition to national health insurance and to determine the reasons responsible for continued resistance. Three predominant issues are discussed in detail: economic efficiency, quality of care, and the role of government. For each of these concerns, the influence and interplay of relevant political, cultural, social, and economic factors are analyzed. In addition, the circumstances that have led other nations to adopt different methods of financing health care are discussed, primarily using Great Britain as an example. I assert that continued failure to establish universal coverage in the United States is a complex issue, and emphasize that a multitude of factors must be taken into account. However, I argue that propaganda, by playing off American values and fears, has had a major influence in shaping the beliefs and sentiments that continue to impact attitudes towards health care reform.



242 Room 172 3:10-3:55 Panel 5

Caitlin Webb

Teresa Fitts (Faculty Sponsor)

Department of Kinesiology, Westfield State College, Westfield, MA, 01086

V.E.T.: Veterans Exercise Training Program - A Service Learning Project

The purpose of this project was to explore the participation, immediate effects and struggles associated with implementing a short project advocating increased physical activity among veterans. Researchers have found that an estimated 70% of veterans are overweight compared to 64% of the general population, hence reflecting a need for increased activity levels among the veteran population. Researchers have also determined that a focus on physical activity alone is more important and more effective than focusing on the weight and body mass index. The assignment, which was required for an honors class focusing on the physical inactivity crisis, was to create an advocacy project which promoted regular, consistent exercise. The V.E.T. project is an activity-based program at the Veterans Administration Hospital (VA) in Leeds, MA. VA members completed a series of activities designed to improve overall health and wellbeing. The success of the project was determined by the number of veterans who participated in the event and the veterans' expressed enjoyment of the activities. This advocacy project has provided veterans an opportunity and means to exercise. The V.E.T. Program has also served as a leadership and planning experience for those involved in the collaboration efforts. The project is a change from the traditional classroom requirements and allows students to have hands-on interaction with members of the community.



Radio-Television-Film

243 Room 162 2:15-3:00 Panel 4

Stephen T Troy

Joe Marine

Michael Bober

Michael "Zak" Lee (Faculty Sponsor)

Department of Communication, Fitchburg State College, Fitchburg, MA,
01420

Short Film: Sounds of Blades in Rotation

Our thesis project consists of the production of a short film. During the fall semester (our "research" phase) we wrote and prepared for production; the spring semester (the "writing" portion of the project) has been spent filming and editing the footage. Last fall writer/producer Michael Bober wrote a short script, tentatively titled "Sounds of Blades of Rotation." Director Stephen Troy, Director of Photography Joseph Marine and writer/producer Michael Bober collaborated during the preproduction process on things such as tweaking the script, casting actors, and securing locations. The story follows a young man, Ray, after he's accidentally hit a dog with his car. Along with his friend Laura, they attempt to find the dog's owner. The script was shot over two days in January, utilizing the 7D camera and its HD capabilities. The film in its present form has been edited by Stephen Troy and Joe Marine, and is awaiting a score created specifically for the film from the Pacific Northwest Film Scoring Program in Seattle, with whom director Stephen Troy is working closely. The group will present their current version of the film and seek feedback.



244 Room 163 10:40-11:25 Panel 1

Joshua Botvin

Tom Grady (Faculty Sponsor)

Department of Radio-Television-Film, Bristol Community College, Fall River, MA, 02720

Once Upon a Time...In Nazi Occupied France

This shot by shot analysis of the opening chapter from Quentin Tarantino's "Inglorious Basterds" will use screen captures to illustrate the writer/director's use of mise en scene, camera angles, character expressions, tone, mood, color, etc. Also, this analysis will apply auteur theory to explore those traits the director is known for, including scenes of lengthy, witty dialogue, dark humor, and homages to other movies, demonstrating his vast knowledge and love of movies. A section of the project will examine the historical accuracies of the scene, questioning how much deviation, if any, there is from the actual historical events.



245 Room 163 2:15-3:00 Panel 4

Alden Dalia

Joseph Moser (Faculty Sponsor)

Department of English, Fitchburg State College, Fitchburg, MA, 01420

Androgynous Gender Identities and Environmentalism from Miyazaki's Princess Mononoke to Cameron's Avatar

Susan Napier, in *Anime: From Akira to Princess Mononoke*, writes that, "anime may be the perfect medium to capture what is perhaps the overriding issue of our day, the shifting nature of identity in a constantly changing society." One film that fits into this mold is Hayao Miyazaki's epic, *Princess Mononoke* (1997) as it questions traditional conceptions of gender identity and the role of humans in environmental change. The overall goal of my presentation is to delve deeply into the film *Princess Mononoke*. I will examine writer-director, Hayao Miyazaki's unique representations of gender. Miyazaki's female characters are fierce as well as maternal, while his main male character is a mediator and peacemaker between humans and nature. These figures are not set in simplistic "masculine" and "feminine," "good" and "bad", or "black vs. white" archetypes; he focuses on the "gray" ambiguity of reality. Moving away from the characters, the presentation will delve into the environmentalist message of the film. Miyazaki's innovative viewpoint applies traditional Japanese mythology to understand the contemporary conflict between human development and environmental degradation. And if this premise sounds at all like a recent blue-themed film, the comparisons between *Princess Mononoke* and James Cameron's *Avatar* are quite uncanny. I will explore parallels between the two films in the final part of my presentation.



246 Room 163 10:40-11:25 Panel 1

Kristen Mientka

Maddy Cahill (Faculty Sponsor)

Department of Communication, Westfield State College, Westfield, MA,
01086

Transitions: The Cinema of Eastern Europe

This study was conducted to find important themes in the cinema of Eastern Europe. The paper was researched through viewings of 16 significant films from Poland, Czechoslovakia, Hungary, Romania, Ukraine, and Russia. The films were analyzed for content and style. Readings on the history of Eastern Europe were also vital in understanding the region's cinema. The results of the comparative film analyses indicated several patterns within the major themes of Eastern European films. The most significant theme was the conflict between old traditions and newer "Western" values. While it is frequently omitted from film courses and discussions of the world cinema "canon," the film of Eastern Europe has a rich artistic heritage connected to the region's long and often tragic history.



Social Thought and Political Economy

247 Room 809 1:20-2:05 Panel 3

Erin Carden

Martha Yoder (Faculty Sponsor)

Department of Commonwealth Honors College, UMass Amherst, Amherst, MA, 01003

Nurture Over Nature: How Housing Discrimination Can Determine Health

Throughout the twentieth century, the U.S. federal government made countless race-defining moves by channeling resources and opportunities to whites and away from nonwhites, resulting in an enormous wealth gap that persists today. Jim Crow laws may be a thing of the past, but the basic concept and its implications live on through the current racial division of home equity distribution and geographical segregation. This is directly related to the nation's physical well being since socioeconomic status is the greatest determinant of health. This report examines the relationship among race, fair housing policies, and health in the United States. It asserts that geographical segregation and the unequal distribution of home equity along racial lines are crucial determinants of an individual's overall health and life expectancy. The existing research generally analyzes racial disparities in 'life chances' in terms of educational and economic opportunities. Also published are numerous studies that prove the high level of influence that socioeconomic status has on health. This paper expands upon both areas of study by directly linking racial disparities in housing opportunities with a more literal meaning of 'life' chances: the general health and mortality rates of the United States.



248 Room 168 2:15-3:00 Panel 4

Dan Meegan

Mary Kay Cordill (Faculty Sponsor)

Department of Sociology, Cape Cod Community College, West Barnstable, MA, 02668

Dorothea Dix: A Crusade For The Disabled

The Disability Movement is often overlooked as a part of American history, just as people with disabilities are often overlooked if not seen as inferior or a burden to our society. Starting in the late 1840's people with many forms of disability were forced to live in institutions, causing them to lose their independence and control over their lives. Also, as recently as 1983 fifteen states had laws requiring the sterilization of people with disabilities, as well as preventing people with disabilities from marrying or moving to this country. Finally in 1990, with the realization that there needed to be a social movement, the government passed the Americans with Disabilities Act, which provided reforms for people with disabilities to have equal rights for resources such as employment, state and local government services, public accommodations, commercial facilities, transportation, and education. This act helped to create communication services such as telecaptioners, TTY devices for telephones, voice-recognition systems, screen readers, and computers. After visiting a prison on March 28, 1841 and seeing disabled men and women chained to walls and locked into pens "naked, filthy, brutalized, underfed, given no heat, sleeping on stone floors," Dorothea Dix embarked on a crusade to aid the mentally ill. Dix's lobbying led to the first mental asylums and hospitals in six states. This research project will explore the social injustices that were faced by people with disabilities, the reforms that were put into motion, as well as Dix's efforts to aid the poverty stricken mentally ill.



249 Room 801 1:20-2:05 Panel 3

Nathana Sfeir

Mary Kay Cordill (Faculty Sponsor)

Department of Sociology, Cape Cod Community College, West Barnstable, MA, 02668

Mountain Top Removal: America's Dirty Little Secret

Eighty percent of the electricity in the United States is generated from the use of fossil fuels, nearly fifty percent of which comes from coal. The process of coal extraction known as Mountain Top Removal or strip mining is a process in which mountains are blown up to retrieve the veins of coal beneath the surface. Part of the process dumps the debris from the mountain such as flora and fauna into the valleys. So far over 500 mountains have been destroyed along with 2000 miles of streams, while many more are slated for execution. This coal mining region is home to the United State's most bio-diverse forest and according to the Clean Water Act established by Congress, the practice of this sort of coal extraction is illegal, due to the resulting pollution. Grassroots movements opposing these practices have developed both through out the Appalachian region and the U.S. involving ordinary people such as Marie Gunnoe who challenge us to rethink our relationship with electricity and our dependency on coal. The purpose of this paper is to inform and create awareness about the needless and devastating impact of coal usage as an energy resource and explores the potential of carbon neutral energy sources. It also serves to illustrate the efforts of those who have dedicated their lives for the purpose of changing this practice and those who refuse to leave this unnecessary plundering of natural resources as a legacy for future generations.



Sociology

250 Room 803 11:35-12:20 Panel 2

Bethany Doane

Mark Cote (Faculty Sponsor)

Department of Sociology, North Shore Community College, Danvers, MA,
01923

Facebook: Friend or Foe?

Facebook is possibly the most popular Social Networking Site for individuals with internet access around the world. A Social Networking Site (SNS) is a web site created for the purpose of allowing family, friends, and acquaintances to share ideas, photos, movies, and current accounts of their lives with one another. Though there are many good qualities about a SNS like Facebook, new issues are beginning to arise about the negative drawbacks and other complications associated with the use of a personal SNS. Facebook especially has the potential to make its users vulnerable to unfavorable circumstances. Facebook is widely accepted as a means of social interaction, but, just like any personal interactions, the exchanges between individuals are not guaranteed to be pleasant, straight-forward, or well meaning. Members using Facebook are not always aware of the amount of personal content that is available for others to view, even if they try to keep their information as private as possible. As Facebook becomes more common among all age groups, and also among groups of professionals, users may be at risk for being misrepresented and misunderstood should a supervisor or disciplinarian gain access to their online data. In other cases, a member may become the subject of abuse or bullying via their account. Despite its resourcefulness and other good qualities, Facebook users should also know about the consequences they may encounter in the present and in the future due to their affiliation with the web organization.



251 Room 809 2:15-3:00 Panel 4

Ruth Muellejans

Martha Yoder (Faculty Sponsor)

Department of Commonwealth Honors College, UMass Amherst, Amherst, MA, 01003

The Invisible Ones: Post-Traumatic Stress Disorder in Homeless Children

Each year there are over 1.5 million children who experience homelessness and by the age of eight, one in three of these children has a major mental disorder. Homeless children are increasingly likely to have experienced multiple, consecutive traumas at an early age, compared to their non-homeless counterparts. These can range from abandonment, to displacement from parental care, to physical, emotional, or sexual abuse, to witnessing domestic violence. Without the proper care and treatment, a homeless child who has experienced multiple traumas is at high risk of developing post-traumatic stress disorder (PTSD). PTSD was not formally recognized by the Diagnostic and Statistical Manual of Mental Disorders (DSM) until 1980, and even then it was believed to be only an adult disorder. Later research began to contradict this assumption, proving an increased susceptibility and risk of children to PTSD. However, there is still much that has yet to be discovered about PTSD and its long-term effects on children. This paper seeks to explore the increased vulnerability of homeless children to PTSD due to their high-risk probability of experiencing multiple traumatic events, and the decreased likelihood of receiving adequate support and treatment because of the instability of their lives. If left unaddressed, the impact that trauma has on a child's developing brain can permanently alter its internal biochemistry, resulting in life-long, detrimental effects. Therefore, there needs to be an increased effort in support services for homeless children in order to prevent the debilitating effects of trauma in this underserved population.



252 Room 175 10:40-11:25 Panel 1

Marvin Quinones

Lisa Maya Knauer (Faculty Sponsor)

Department of Sociology, Anthropology, and Crime and Justice Studies,
UMass Dartmouth, N. Dartmouth, MA, 02747-2300

Puerto Rican Immigration in Western Massachusetts

This presentation will offer findings from my preliminary research and introduce plans for a much larger project on the Puerto Rican community in Holyoke, Massachusetts. There has been substantial research on Puerto Ricans in places like New York, Chicago and even Boston, including works by Padilla, Sanchez-Korrol, Ramos-Zayas, Dávila and others. However, there has yet to be a study conducted upon the Puerto Rican community in Western Massachusetts. My project will hone in on the growing population of Puerto Ricans living in this area, especially in Holyoke. Holyoke has a population of 40,000 people. Since the great migration in the 1950's, the Latino population has grown and now 42% of Holyoke's resident are Latino. Puerto Ricans comprise 36.5% out of this population and are the largest group of Latinos in the area. These numbers make it interesting to look at how Puerto Rican identity is constructed in relationship to other Latino groups in Holyoke and its surrounding areas. This study would be a valuable contribution to the ever-growing research on Latino immigration and cultural studies. My research will consist of analyzing census data and determining when Puerto Ricans migrated to Western Massachusetts. It will also look at the scale of this migration and its effects on Holyoke. Since the history of Puerto Rican migration in this area is practically undocumented, I will be conducting interviews with Puerto Rican residents of Holyoke to gain a better insight to this history. These interviews will include group discussions as well as individual conversations. These findings will later be included in full-length study of the Puerto Rican community in Western Massachusetts.



253 Room 175 10:40-11:25 Panel 1

John Stewart

Kate Martin (Faculty Sponsor)

Department of History, Cape Cod Community College, West Barnstable, MA, 02668

Age-Long Ageism

Ageism is any form of intolerance or prejudicial stereotyping against any particular age group; this project will be focusing on the injustice affecting the elderly. With the number of age discrimination complaints being filed with the Equal Employment Opportunity Commission (EEOC) hitting a record high of 19,992 back in 2002, ageism is still a major social problem that needs attention in the United States. Previously, the Age Discrimination in Employment Act (ADEA) was passed after a Labor Department Report was released in 1967 confirming age discrimination in the workplace, making it the first piece of legislation which protected the elderly in the U.S. Under the ADEA, it is unlawful to discriminate against a person because of his or her age with respect to employment, including hiring, firing, promotion, compensation, and benefits; unfortunately, this alone cannot change America's perceptions of the elderly. Currently, the AARP, Grey Panthers, and International Longevity Center are fighting the American cultural beliefs, attitudes, norms, and values, that give birth to bigotry based on age through the courts, legislature, awareness, and support groups. Gerontologist and Pulitzer Prize winner Robert N. Butler M.D. is one of the leading figureheads representing the elderly worldwide and is fighting for their equality among the masses. This paper will be looking at Butler's roles and motivations for becoming a leader in the social movement against ageism.



254 Room 163 1:20-2:05 Panel 3

Caleb Stone

Colin Adams (Faculty Sponsor)

Department of Sociology, Berkshire Community College, Pittsfield, MA, 01201

An Exploratory Study on the Decline of Volunteer Firefighters in Two Small Towns in Western Massachusetts

A volunteer firefighter is any person that performs fire suppression and other related emergency services for no monetary gain. Many rural towns rely on these volunteers to provide emergency services for their citizens. However, a greater number of volunteer fire departments are seeing a decline in their ranks. The purpose of this research is to discover what issues are causing this decline. Conducted research includes, a self-administered questionnaire and secondary data collected from firehouses in two small rural western Massachusetts. The data showed that 89 percent of the current firefighters agreed that the amount of training placed on volunteers was a hindrance to attracting new recruits. They spent an average of 284 hours devoted to their fire fighting a year and 171 of those hours training. The average age was 46 years with some more than 65 years old. Education levels were also surveyed and should that all but two of the 19 respondents had an associated degree of less. The findings show that large number of older volunteer firefighters are leaving thus creating a gap between the younger generations. In addition, education levels among the respondents could contribute to the resentment to learn new training. Solutions that were suggested by the volunteers included adding more community days to incorporate the fire department into the community and adding a stipend to the volunteers. Technological changes in society have influenced the level of skills required by traditional volunteer activities such as fire fighting. The levels of civic engagement in this area appeared to have suffered as a result.



255 Room 811 10:40-11:25 Panel 1

Kirsten Swenson

Robert Dow (Faculty Sponsor)

Department of Commonwealth Honors College, UMass Amherst, Amherst, MA, 01003

Self-love's Impact on Interpersonal Relationships

What is love? This is a question that's been long debated by philosophers, biologists, scientists, poets, sociologists, psychologists, and musicians, not to mention by your parents, your grandparents, your roommates and your closest friends. At one point or another, everyone questions what it means to be "in love." Though a daunting, broad and undeniably complicated topic to take apart and analyze, this paper will focus broadly on how our upbringing and culture shapes our perception of love, but more specifically on how love of self is paramount in the success of any other form of love. Views of self-love (how much is appropriate, how much is not) are different depending on one's upbringing and cultural leanings, and of course, historical context is also a factor. The paper will be broken into three parts: the first will examine different forms of romantic love in abstract forms, as well as self-love, which is at the basis of my argument. The second will take a look at fraternal love, and the third will examine familial love. Using research from Irving Singer's "Philosophy of Love," John Cowburn's "Love" and Alan Soble's "The Philosophy of Sex and Love," I will then examine these concepts in literary works "The Scarlet Letter," "The Autobiography of My Mother" and "Tuesdays with Morrie."



256 Room 809 3:10-3:55 Panel 5

Josh Swiecicki

Martha Yoder (Faculty Sponsor)

Department of Commonwealth Honors College, UMass Amherst, Amherst, MA, 01003

How Have Outside Forces Impacted the NFL's Attitude on Concussions Since 2007?

Bumps, bruises, and broken bones are all common injuries that Americans have come to associate with the National Football League. Sadly, dementia and depression have entered this category as well. In 2007 media outlets first reported new scientific data that links NFL players who have suffered multiple concussions over the course of their careers to these psychological diseases. Football-related concussions is one of the most talked about subjects in popular culture today due to the American public's infatuation with the NFL and the frightening realization that playing professional football could result in life-threatening mental impairment down the road. In response to this widespread attention, the United States Congress has monitored the NFL in recent months to ensure that the appropriate steps are being taken to limit the odds of a player sustaining a concussion. This paper will look at how outside forces have impacted the NFL's attitude on concussions since 2007. Along with examining the up to date information concerning how a player may suffer and treat a concussion, this paper will look at the NFL's failure to independently resolve this conundrum prior to 2007. Most importantly, this paper will review how and why the NFL has strengthened their awareness regarding concussions over the past three years. These findings should arguably portray the notion that the NFL would never have addressed their concussion epidemic if it were not for the influence of outside forces such as the mainstream media, Congress, and private research organizations.

Spanish

257 Room 801 11:35-12:20 Panel 2

Melodie Reynolds

Luis Alonso-Ovalle (Faculty Sponsor)

Department of Spanish, UMass Boston, Boston, MA, 02125

Negative Concord and Preposed Negation Questions in the Spanish Language

Negative Concord (NC) languages, like Spanish, allow a sentence containing multiple negative words to be interpreted as a single negation (Ladusaw 1997) as in (1). Negative concord in Spanish is non-strict (Penka 2004): a postverbal 'n-word' (Laka 1990) such as *nadie* ('no one') requires a preceding marker of negation such as *no* (1a) while a preverbal n-word excludes such a marker (2a). Interpreting NC remains enigmatic because it is unclear whether n-words are always semantically negative (Giannakidou 2002). Non-strict varieties are particularly confounding because the syntactic position of n-words seems to affect their semantic contribution. Ladusaw (2004), Zannutini (1991, 1996), and Haegeman (1995) have proposed that n-words do not express negation directly but instead depend on an abstract unpronounced negation. 'Yes/no' questions (Y/N Q) with preposed negation (3) provide a unique framework in which to explore this hypothesis. A preposed negative word indicates the speaker's bias toward a positive answer (Romero & Han 2004). In (3a) and (3b) such a bias is present; i.e. the speaker thinks that John smokes, while in (3c) and (3d) the bias is absent. This study aims to determine experimentally if preposed n-words as in (4) trigger the same bias. If they do, we could conclude that the source of the bias is an abstract preposed negation of the type proposed in the NC literature (Ladusaw (2004), Zannutini (1991, 1996), and Haegeman (1995)). Note: (*) indicates that sentence is ungrammatical. (1) a. *No vino nadie.* NEG came n-person. b. 'No one came.' c. NOT: *'No one did not come.' (= 'Someone came.') (2) a. *Nadie vino.* n-person came. 'No one came.' (3) a. Doesn't John smoke? b. ¿No fuma Juan? NEG smokes Juan? c. Does John not smoke? d. ¿Juan no fuma? Juan NEG smokes? (4) a. ¿Nadie fuma? n-person smokes? b. ¿No fuma nadie?



Women's Studies

258 Room 809 10:40-11:25 Panel 1

Lindsey Cushing

Martha Yoder (Faculty Sponsor)

Department of Commonwealth Honors College, UMass Amherst, Amherst, MA, 01003

To Donate or Not to Donate

The use of Assisted Reproductive Technologies has exploded in the last three decades, enabling not only infertile couples, but also single mothers and same-sex couples to become parents. Further, the use of human eggs has enabled innovations in therapeutic cloning and stem-cell research. These new technologies, however, are not without controversy or concern. The social, ethical and medical implications egg collection poses to women's reproductive rights and health are unique and widely contested. While much attention tends to be focused on the risks facing infertile women undergoing IVF and other infertility treatments, egg donors are at an even higher risk of coercion and exploitation. The goal of this thesis is to explore the impact of egg donation on the status and wellbeing of egg donors in order to evaluate whether increasing regulation in the United States is necessary, or would instead infringe upon women's reproductive freedoms. This research will begin with an evaluation of the scientific literature surrounding the physical and psychological risks of ovarian stimulation and egg retrieval and move on to a comparison of the potential harms facing women who donate for research versus those who donate for reproduction. Finally, this thesis will conclude with a historical evaluation of reproductive autonomy relational to egg donation within a Constitutional framework and explore current U.S. and international regulations of egg donation to establish a precedent of regulation or deregulation.



Accounting

259 Room 101 10:45-11:45 Board 52

Scott Davis

Benyamin Lichtenstein (Faculty Sponsor)

Department of Management, UMass Boston, Boston, MA, 02125

Evaluating the Sarbanes-Oxley Act: A Benford's Law Application

Previous studies in accounting (Carlsaw 1988; Thomas 1989) show that companies tend to round-up reported earnings, a tendency of managers known as "earnings management." Unethical behavior from corporate managers and accounting firms led to the Sarbanes-Oxley Act of 2002, setting stricter financial reporting laws. There has been much debate on whether the Sarbanes-Oxley Act has increased the quality of financial reporting. In order to explore that question, I use a technique of comparing an expected distribution of significant digits (known as the Benford distribution) to an actual distribution of financial data from a sample of publicly traded U.S. companies' earnings statements. My sample spans a range of five years prior to and five years after the implementation of the Sarbanes-Oxley Act of 2002. By comparing the sample's level of deviation from the expected results, I am able to provide quantifiable analysis on the effectiveness of the Sarbanes-Oxley Act on financial reporting quality.



260 Room 101 10:45-11:45 Board 53

William Floyd

Richard Simpson (Faculty Sponsor)

Department of Accounting, UMass Amherst, Amherst, MA, 01003

A Critical Look at Current Fair Value Accounting Rules

The recent financial crisis, involving massive reported losses at major financial institutions, has brought fair value accounting into the spotlight and ignited a debate over whether fair value accounting does more harm than good. Some argue that the accounting rules forced banks to take excessive losses and exacerbated the crisis; others argue that the rules simply held banks accountable for their investments in poor quality assets. This paper takes a critical look at the recent history of fair value accounting by financial institutions with FAS 115 and FAS 157, highlighting the advantages to users of financial statements that each rule brought about, but also discussing the flaws and shortcomings of each rule. Criticisms are supported with examples from the financial statements of Goldman Sachs and JPMorgan Chase. This paper then examines the role of fair value accounting in the financial crisis and the debate surrounding its usage. Following this analysis, it is concluded that fair value accounting's role in the financial crisis is a testament to its importance, rather than an indication of its fallibility, due to the increased transparency it provided. Lastly, two suggested rule changes are presented for the FASB to remedy the flaws noted in this paper and improve fair value accounting by financial institutions going forward.



Animal Sciences

261 Auditorium 2:35-3:35 Board 35

Joseph Malatos

Kimberly Tremblay (Faculty Sponsor)

Department of Animal Sciences, UMass Amherst, Amherst, MA, 01003

Testing the Efficacy of Concentration-Dependent Tamoxifen-induced Cre Excision in the Liver Bud Using the FoxA2 mcm allele

The liver plays vital exocrine and endocrine roles in the human body; detoxifying blood and secreting serum factors, as well as the secretion and production of bile in the intestines are just some of the liver functions. However, little is known about the early development of the liver, and thus there is a need to better understand the formation of the liver with the mouse as a model. The main objective of my research will be to determine a method for labeling single liver-bud cells. The entire liver bud can be labeled by providing genetically altered embryos with the maximum dose of tamoxifen (TM) via oral gavage of their pregnant mothers. The genetic alterations allow for the embryonic endoderm cells to respond to TM by activating the beta-galactosidase gene in cells and their descendants. Because the number of cells activated by TM is directly related to the concentration of TM administered, we hypothesize that a minimal dose of TM required to activate the beta-galactosidase in single liver bud cells of 9.0 dpc embryos can be found. The short-term goal of this project is to determine the lowest dosage of TM that reproducibly generates marked descendants arising from a single cell. Once the correct dosage is determined, this information can then be used to determine the potential of single liver bud cells and will be used to directly test the hypothesis that a single progenitor cell gives rise to both mature liver cell types- hepatocytes and cholangiocytes.



262 Auditorium 2:35-3:35 Board 34

Joshua Munro

Sam Black (Faculty Sponsor)

Department of Animal Sciences, UMass Amherst, Amherst, MA, 01003

T. brucei VSG Specific Monoclonal Antibody Production

Hybridoma cells capable of continually synthesizing specific antibodies against known antigens are useful tools in the study of immunology. These hybridomas are made by fusing a tumor cell with a B-lymphocyte from an infected animal, creating a colony of cells that has the growth potential of a tumor cell and the antibody generating potential of the lymphocyte. The goal of this experiment was to make a hybridoma cell line secreting monoclonal antibodies against the surface coat of the protozoan parasite *Trypanosoma brucei*. This parasite causes sleeping sickness in humans and a wasting disease in cattle. Splenic lymphocytes were harvested from mice infected with the parasites and were fused with X63 mouse tumor cells, creating hybridomas, which were subsequently cloned by limiting dilution cloning. To identify hybridomas that secrete antibody specific for the parasites, cultures supernatants from each hybridoma clone were incubated with formalin-fixed trypanosomes and the parasites subsequently washed in buffer and stained with fluorescein conjugated anti-mouse immunoglobulin. The stained cells were then examined by immunofluorescent flow cytometry. Antibody-bound trypanosomes fluoresce brighter than trypanosomes incubated with non-reactive hybridoma supernatant. Once a hybridoma producing trypanosome surface coat specific antibody is identified, future experiments will be directed at studying the antibody and trypanosome interactions.



263 Auditorium 2:35-3:35 Board 36

Sarah Snow

Beverly Army Williams (Faculty Sponsor)

Department of English, Westfield State College, Westfield, MA, 01086

Animal Testing-Right or Wrong?

Animal testing has become an increasingly prominent issue around the world, especially in the United States. To try to determine whether using animals for testing purposes is a valid research tool, I investigated several arguments about the issue, using surveys, articles, results from experiments, and reference sources, all from within the United States. My paper evaluates some of the most important facets of the use of animal testing, both for and against, and reveals that there is no easy answer to whether or not testing is a legitimate tool. From the research, however, I was able to determine that although animal testing may have medical and educational benefits for humans, it can be an abusive method of research because it can be harmful, unnecessary, and unreliable.



Art

264 Auditorium 3:50-4:50 Board 13

Kristen Anderson

Lance Hidy (Faculty Sponsor)

Department of Art, Northern Essex Community College, Haverhill, MA, 01830

Branding: Emmaus, Inc.

This project developed from a desire to participate in volunteer effort. The opportunity to work with Emmaus presented itself via the service learning efforts of Northern Essex Community College. Emmaus is a non-profit organization located in Haverhill, MA. It is best described as a community based housing development organization. Emmaus is currently using a variety of publications to educate the surrounding communities about the organization, including a newsletter, brochures and business cards highlighting fundraising events. Their desire was to improve their publications to present a more professional image. Thus, the branding project. Branding is a plan used by designers that employs design tools: logo, color palette, typeface, format, images and language. These design tools are applied to every communication vehicle, conveying the brand identity. A brand identity facilitates instant recognition and comprehension of a product, or, in this case, an organization. The current Emmaus publications were lacking in some key design components. The goal of my project was to redesign the Emmaus publications in order to present a more professional, unified image for the organization. I utilized my knowledge of the Adobe publication software InDesign, as well as the professional graphic design direction of my faculty mentor, Professor Lance Hidy. Through this project I strengthened my graphic design skills, and was able to improve communication skills as well. Another key component to the branding project was to meet with representatives from Emmaus to discuss their goals, and to continue to meet at developmental phases to gather feedback about the changes that I was making. The experience of communicating my objectives to a variety of personalities was a valuable asset. The culmination of the branding project was presenting the finished publications to Emmaus. The Branding of Emmaus was a success, in that I was able to create a unified body of publications that conveyed a professional image of Emmaus to the community. An improved image will aid in communicating the mission of Emmaus to clients, patrons and volunteers in the surrounding communities.



265 Auditorium 3:50-4:50 Board 11

Heather Mellish

Robert Darst (Faculty Sponsor)

Department of History, UMass Dartmouth, N. Dartmouth, MA, 02747-2300

Interactivity in Storytelling

My project involves the fluid blending of storytelling elements with game programming and design. This thesis makes great use of characters, story elements, and other ideas that I have been creating and improving upon for many years. It blends these story elements of my own personal design with those of an interactive story. You, the player, have been apprenticed to my character Ookami, along with his other apprentice Velkyr. As you begin your training as a Traveler (explained in-game), you are drawn into an increasingly complex mission that requires you to find clues and solve puzzles to reach the end. In addition, throughout many parts of the game, the player will be given different choices for how to act and what to say. These choices can cause different events to occur in the game, depending on what you select. This visual novel style game also depicts my understanding of character and background design, programming, animation, and typography, blending a number of important skills from my chosen major together into one. As the designer, I am creating a variety of background images (such as temples, training rooms, and more) that blend smoothly with text-boxes and dialogue. I am also creating a variety of character designs that are eye-catching but not overpowering to help the story move along, introduce the player to other characters and game elements, and provide help when the player is stuck. Ideally, this thesis will be best presented with a demonstration of its interactive aspects. Viewers will be invited to play a chosen section of the game, or I will play through a section myself while allowing others to watch. A poster with screenshots will also be presented in order to display parts of the game that cannot be played due to time constraints.



266 Auditorium 3:50-4:50 Board 12

Tyrone Smith

Tom Grady (Faculty Sponsor)

Department of Art, Bristol Community College, Fall River, MA, 02720

Coping Through Art

How can a certain event in one's life be transformed in to three separate pieces of art that assist an artist's journey toward self expression? These works act as coping methods for something that may not be so easy to say out loud. Tyrone Smith's experiences in Iraq have led him to create a personal essay, a monologue, and visual art that have helped him cope with remembering the everyday ordeals of his environment in Baghdad for 16 months. His research extends to that of others who have experienced trauma or life altering moments who may express themselves through their artwork. This presentation will show the correlation between the ability to use many forms of art as a coping method and, how this art may be presented.



Art History

267 Auditorium 3:50-4:50 Board 14

Jacqueline Lamontagne

Colin Root (Faculty Sponsor)

Department of Art History, UMass Dartmouth, N. Dartmouth, MA, 02747-2300

European Influence on Thomas Cole's "Voyage of Life" Series

Many pieces of nineteenth-century American art seek to define the artist and the art as American. While Romantic painter Thomas Cole, like many other American painters of the nineteenth century, does not break completely from the technique, styles, themes, and allegories of the European tradition, he does help to define a nationalist form of American art. Initially, the subject matter seems very traditional, drawing heavily on the Romantic literature of Keats, Coleridge, and Blake - a man going through his journey of life. And while the man sometimes questions his faith as he travels from innocence to experience, his guardian angel guides the way. Regardless of the traditional Christian message and the obvious impact of European Romantic ideals, Cole is creating an allegorical story that is easy for a middle-class audience to understand, as American viewers are able to see their homeland in Cole's series. Above all, he is highlighting the pureness, simplicity, and sensibility of the American landscape and American religion. Cole's romanticism draws not from something imagined, but rather, on the awe-inspiring natural world and man's place within it. By engaging European Romantic ideas and putting them into a truly American context, Cole helped to define the genre of American Romantic landscape painting.



Biochemistry

268 Room 101 1:20-2:20 Board 49

Tatiana Achildiev

Marianna Torok (Faculty Sponsor)

Department of Chemistry, UMass Boston, Boston, MA, 02125

Inhibition of Acetylcholinesterase by Small Organic Molecules

Alzheimer's disease (AD) is one of the most common forms of dementia. This has been linked to the deficiency in the brain neurotransmitter acetylcholine based on observations that are related to the cholinergic system abnormalities. According to the cholinergic theory, reduction of the acetylcholine (ACh) in specific areas of the brain may also aggravate AD. Acetylcholine is hydrolyzed by its metabolic enzyme the acetylcholinesterase (AChE). Using Ellman's spectrophotometric method, a variety of new small molecule inhibitors were tested in the hydrolysis of acetylthiocholine catalyzed by AChE. Based on their structures and physical properties, a systematic study was carried out to gain more insight into the mechanistic details of the process involved.



269 Room 101 1:20-2:20 Board 38

Michael Buckner

Alejandro Heuck (Faculty Sponsor)

Department of Biochemistry, UMass Amherst, Amherst, MA, 01003

Seeing the Invisible: Fluorescence Spectroscopy Visualizes the Membrane Topology of PopD, a Bacterial Translocator Protein Involved in Toxin Injection into Host Cells

Pseudomonas aeruginosa is a major agent of infection in immunocompromised individuals, as well as the major cause of fatality for patients with chronic respiratory infections such as cystic fibrosis. Like many other Gram-negative bacteria, *P. aeruginosa* utilizes a type 3 secretion system (T3SS) to inject its toxins/effectors directly into the host cytoplasm. The T3SS is a needle like complex that is responsible for transporting the toxins/effectors through the bacterial membranes and across the host plasma membrane. The T3SS consists of two major units: the basal body anchored to the bacterial membranes, and a hollow needle-like filament responsible for transporting the effectors. Attached to this needle is a proteinaceous pore forming complex, called the translocon, that accepts effectors from the hollow filament and passes them through the host membrane and into the host cytoplasm. Based on current research two *P. aeruginosa* proteins are responsible for forming the proteinaceous pore: PopD and PopB. In the Heuck laboratory, we are currently trying to understand the mechanism by which PopD and PopB forms pores in lipid membranes. Using bioinformatic tools and close analysis of the PopD primary amino acid structure, we identified an amphipathic segment that could possibly interact with membranes. This segment comprises amino acids between L213 and V231, and if alpha helical, will adopt an amphiphilic conformation making it a good candidate to cross the lipid membrane. Using site directed mutagenesis, unique cysteine residues were introduced into this segment of wild type PopD. This unique cysteine residue is labeled with the environmentally sensitive fluorophore NBD, covalently attaching the probe to the cysteine residue. Using various fluorescence spectroscopy techniques, including fluorescence lifetimes, emission spectra, and fluorescence quenching, we can determine the location of the probe in model membranes. By creating additional PopD mutants with different unique cysteine residues, we can build a model for the orientation of the putative membrane-interacting segment in lipid membranes.



270 Concourse 10:45-11:45 Board 71

Amanda Clouser

Lila Gierasch (Faculty Sponsor)

Department of Biochemistry, UMass Amherst, Amherst, MA, 01003

Analysis of Aggregation-Prone Regions in a Model β -sheet Protein Using Prediction Algorithms and PEGylation Experiments

Protein aggregation is implicated in numerous human diseases, particularly neurodegenerative diseases such as Alzheimer's and Parkinson's, and is a major concern in the production and administration of biopharmaceuticals. The Gierasch Lab uses cellular retinoic acid binding protein I (CRABP I) as a model protein for studying the fundamental mechanisms of aggregation *in vivo* to better understand the pathology of these diseases. CRABP I forms amyloid-like aggregates, characterized by a repetitive cross β -sheet structure dependent upon a core sequence. The aggregation propensity algorithms AGGRESCAN [1] and TANGO [2] consistently predict aggregation-prone regions in the CRABP I sequence at residues 118-122 and 129-133, located in two neighboring β -strands in the second β -sheet. Mutations to less hydrophobic residues within these regions eliminate the aggregation "hot spots" in the models, specifically I119E, I119Q, I132E, and I132Q substitutions. In order to determine if either of these regions is involved in forming an amyloid-like core, chemical modification is used to determine the accessibility of different regions of the sequence. PEGmal (methoxy-polyethylene glycol maleimide) reacts with exposed cysteines in a protein, acting as a mass-tag detectable by SDS-PAGE. The native cysteines in CRABP I at positions 81, 95, and 129 are examined individually, in addition to novel cysteine substitutions near the predicted aggregation-prone regions. *In vivo* and *in vitro* aggregates are purified and PEGylated to determine the availability of a single cysteine within a given region of the protein. If cysteines in or near the proposed aggregation prone regions are not PEGylated, then the region is buried in the aggregate and might serve as a core sequence in the formation of amyloid-like aggregates. The cysteine availability of *in vivo* and *in vitro* aggregates formed by several CRABP I mutants are compared to determine if the same regions of the protein are buried or exposed in different types of aggregates.

References [1] Oscar Conchillo-Solé, Natalia S de Groot, Francesc X Avilés, et al. 2007. AGGRESCAN: a server for the prediction and evaluation of "hot spots" of aggregation in polypeptides. *BMC Bioinformatics* 8:65 [2] Fernandez-Escamilla AM, Rousseau F, Schymkowitz J, Serrano L 2004. Prediction of sequence-dependent and mutational effects on the aggregation of peptides and proteins. *Nat Biotechnol.* 22:1302-6



271 Concourse 10:45-11:45 Board 70
Christopher Demopoulos
Igor Kaltashov (Faculty Sponsor)
Department of Chemistry, UMass Amherst, Amherst, MA, 01003

Disulfide Mapping in Cysteine Rich Protein Segments

In the expanding field of biopharmaceuticals there is a growing need to quickly verify higher order structure of recombinant proteins. The vast majority of biopharmaceutical products have multiple disulfide bonds which are a major contributor to the conformational structure of proteins. In protein segments with high cysteine density, the standard method of enzymatic digestion followed by LC-MS/MS is often not sufficient to deduce cysteine connectivity patterns. A novel method of disulfide mapping in cysteine rich domains will be assessed for the protein α -glucocerebrosidase (GCB), an Enzyme Replacement Therapy (ERT) for the genetic disorder Gaucher's disease. Disulfide mapping of GCB is complicated by a cysteine rich segment on the N-terminal peptide. To purify the peptide, the protein was alkylated in denaturing buffer, digested by Lys-C, then deglycosylated by PNGase F. The N-terminal peptide will be separated and collected using a Reverse Phase HPLC. The purified sample will then be lyophilized and subjected to partial reduction experiments. The partially reduced peptides are fragmented by Collision Activated Dissociation (CAD) and analyzed by a hybrid quadrupole Time-of-Flight MS.



272 Room 101 1:20-2:20 Board 39

Caroline Duffy

Jennifer Normanly (Faculty Sponsor)

Department of Biochemistry, UMass Amherst, Amherst, MA, 01003

IAA Biosynthesis in Brachypodium Distachyon

The grass *Brachypodium distachyon* has been identified as a model system to study energy crops for the production of cellulosic ethanol. *Brachypodium*'s small genome has recently been fully sequenced to further understand its biology. By profiling the auxin, indole-3-acetic acid (IAA), in *Brachypodium*, we are trying to establish growth conditions in which we can detect quantifiable differences in IAA levels. Comparing IAA levels with transcript levels for putative *Brachypodium* orthologs (functionally similar genes from difference species) to predicted *Arabidopsis thaliana* IAA biosynthetic genes will then provide evidence for or against specific *Brachypodium* genes being involved in IAA synthesis. The *Brachypodium* genome database has been mined using the BLAST bioinformatics algorithm to identify potential orthologs to a number of *Arabidopsis* IAA biosynthetic genes. *Brachypodium* wildtype tissue has been grown under full and etiolated (dark) light conditions, and IAA levels determined at various stages of root and shoot development through the use of solid phase extraction (SPE) and gas chromatograph-mass spectrometry (GC-MS) methods. Preliminary results show differences in IAA levels between root and shoot tissue. Previous work on IAA biosynthetic pathways in *Arabidopsis* shows that IAA is derived from the amino acid tryptophan (Trp) during early stages of development. With these tentative differences in mind, the goals of this project will focus on two research objectives. First, pulse-labeling experiments using stable-isotope labeled Trp and anthranilate will be conducted to determine if a similar Trp-dependent pathway is observed in *Brachypodium*. Second, once significant differences between growth conditions and IAA levels are observed, RNA from *Brachypodium* will be extracted, converted to cDNA via reverse transcription and applied to a microarray chip containing the *Brachypodium* genome to quantify differences in transcript expression between the two growth conditions in order to identify genes potentially involved in IAA biosynthesis. Progress on these goals will be reported on at the Massachusetts Undergraduate Research Conference in April.



273 Concourse 10:45-11:45 Board 72

Nick Hathaway

James Chambers (Faculty Sponsor)

Department of Chemistry, UMass Amherst, Amherst, MA, 01003

Protein Structure Determination by NMR Spectroscopy from Eukaryotic Cells

NMR spectroscopy is one of several techniques used to determine the structure of proteins. This is typically done using proteins made with isotopically-labeled amino acids produced by having bacterial overexpression of the protein of interest while supplying the bacteria the isotope-labeled amino acids. NMR with eukaryotic cells has been hampered by the lack of efficient delivery methods of isotopically-labelled amino acids into the cells. We have converted the amino acid lysine into a non-charged molecule by chemically neutralizing the charged atoms of the amino acid so that it can pass through the membrane of the cell. Two different enzymatically-cleavable groups have been used to mask the acid and amines. These groups are attached in such a way that after the modified amino acid crosses the cell membrane, enzymes produced by the cell remove them, thus returning the amino acid to its original state allowing it to be incorporated into newly-synthesized proteins. This will enable isotopically-labeled amino acids to be generated in eukaryotic cells.



274 Room 101 1:20-2:20 Board 48

Lynn Liu

Jennifer Ross (Faculty Sponsor)

Department of Physics, UMass Amherst, Amherst, MA, 01003

Microtubule Self Organization in Crowded Conditions

Microtubules serve as a “highway” for the cell along with molecular motor proteins that can carry cargo and travel along the filament. Kinesin is one of these “motor proteins.” In a filament gliding assay motors are attached to a cover slip and microtubules are placed on top. Upon activating with ATP, the motor action produces forces that cause the microtubules to move in a gliding motion. This gliding is visualized with a microscope by fluorescently labeling the microtubules. A regular gliding assay contains very dilute quantities of microtubules so that individual filaments interact minimally. To determine how microtubules will interact when the solution is dense, we use high concentrations of microtubules. Our experiments show that when the concentration is increased, microtubules self organize into patterns of motion that include synchronized gliding, cross-roads, and circular “traps.” These patterns that self organize while gliding over motor proteins, could be indicative of the properties of the motors such as step length (distance traveled per ATP) and processivity (distance traveled before falling off). In the future, this can be used to determine properties of various motors quickly.



275 Concourse 10:45-11:45 Board 74
Ericca Lucht
Eihab Jaber (Faculty Sponsor)
Department of Chemistry, Worcester State College, Worcester, MA, 01602

Confirmation Analysis of Heme in Hemoglobin via Computation Methods

Hemoglobin is a protein that binds and transports oxygen throughout the body. Contained within the protein chain are prosthetic groups called heme where dioxygen binds to an iron ion. The surrounding amino acid ligands directly influence the shape of the porphyrin ring as well as the energy of reactivity and the function of the iron center in electron transfer (3). This study compared the active site of heme derived from experimental (Protein Data Bank) methods and from ab initio (PubChem) methods. The stability of the molecule was calculated using DFT and a series of basis sets with Gaussian 03W. The active site of each molecule was visualized by comparing HOMO and LUMO diagrams. The heme molecule derived from experimental methods was shown to portray the characteristics that heme is known to have.



276 Room 101 1:20-2:20 Board 47

Kaitlyn Miklinevich

Karsten Theis (Faculty Sponsor)

Department of Biochemistry, UMass Amherst, Amherst, MA, 01003

Understanding DNA Repair Protein Recruitment

DNA damage is a fact of life for all organisms. In healthy individuals, multiple pathways exist to repair most of the damage before it leads to mutations or cell death. We study transcription-coupled DNA repair, which targets damaged DNA coding for expressed genes by a) removing transcription complexes stalled on DNA damage and b) recruiting DNA repair proteins. The bacterial transcription-repair coupling factor Mfd is a DNA motor protein that removes RNA polymerase from damaged DNA and recruits the DNA repair proteins UvrA and UvrB. Mfd has an open and a closed conformation. In the closed conformation the UvrA binding domain is occluded. We have extensive structural knowledge of the individual proteins involved in transcription-coupled repair but which complexes they form as intermediates is not clear. Here, we attempt to trap and characterize the binary UvrA:Mfd and the ternary UvrA:Mfd:damaged DNA complex. Through pulldown and gel-shift assays using different constructs of Mfd available in the lab we can determine when and how in the transcription-coupled repair process the repair complex is recruited. These available constructs include wild-type Mfd and Mfd with a point mutation in the interface between the binding and motor domains which frees the UvrA interaction site by constitutively opening the protein. These studies will allow us to analyze how DNA repair proteins interact and whether Mfd and UvrA bind DNA cooperatively, and can direct future studies on the repair process.



277 Room 101 1:20-2:20 Board 37

Ervin Pejo

Lila Gierasch (Faculty Sponsor)

Department of Biochemistry, UMass Amherst, Amherst, MA, 01003

Role of Crossing Helices During DnaK Bacterial Molecular Chaperone
Allosteric Cycle

Hsp70 molecular chaperones facilitate essential cellular processes such as preventing protein aggregation, promoting folding to the native state and refolding of aggregated proteins. Hsp70 is composed of two linked domains: a substrate binding domain recognizes extended hydrophobic polypeptides and an actin-like ATPase domain regulates affinity for these substrate proteins. In bi-directional interdomain allostery, ATP binding decreases affinity for substrate and substrate binding stimulates ATP hydrolysis through a poorly understood mechanism. Recent work in our laboratory has shown that the interdomain linker participates directly in interdomain communication by binding to a cleft formed by crossing helices in the ATPase domain. This interaction stimulates ATPase activity and occurs at an allosteric site that is conserved in actin. Here, the complex interdomain allosteric communication between the two domains of a bacterial Hsp70, DnaK, is studied by mutating residues located in the ATPase domain's crossing helices and characterizing DnaK's biophysical properties in different allosteric states. Measurement of ATPase activity, fluorescence dependent on interdomain docking, and NMR chemical shift analysis allow us to characterize the specific roles of sites within the crossing helices for propagating allosteric changes between Hsp70 domains.



278 Concourse 10:45-11:45 Board 73

Nematullah Sharaf

Alejandro Heuck (Faculty Sponsor)

Department of Biochemistry, UMass Amherst, Amherst, MA, 01003

Characterization of the Cholesterol-Dependent Binding of Perfringolysin O:
Contribution of Hydrophobic Residues

Perfringolysin O (PFO) a cholesterol-dependent cytolysin (CDC) only binds to membranes containing substantial amounts of cholesterol. A C-terminal region of PFO (domain 4) is responsible for the initial binding to the membrane, triggering conformational alterations that lead to pore formation into the target cell. However, specific mutations in domains 3 and 4 have been shown to alter PFO's ability to bind to cholesterol, as well as its ability to create pores. The molecular basis for these variations is not yet properly understood. Since domain 4 of PFO is responsible for its initial binding to membranes, we will analyze the role hydrophobic residues located in this region have on the cholesterol-dependent binding of the toxin. Amino acids located on the tip of Domain 4 will be replaced in order to increase or decrease the total hydrophobicity of the membrane interacting surface. Their cholesterol binding properties will be analyzed using steady-state fluorescence and liposomal membranes composed of varying concentrations of cholesterol. The ultimate goal of our project is to develop molecular probes to sense cholesterol level variations in cell membranes, creating a useful tool to study the role of cholesterol in cardiovascular disease.



Bioengineering

279 Room 101 1:20-2:20 Board 41

Justin Dondero

Luke Salisbury (Faculty Sponsor)

Department of Literature, Bunker Hill Community College, Boston, MA,
02129

Sampling the Fruit of the Tree of Life - Evaluating Man's Pursuit of Immortality

Today, humans are on the verge of greatly enhancing human capability through genetic and computer research. With our knowledge of the human genome, mankind may have the ability to create the "perfect" human in the near future. The power of the mind, synthesized with microchips and artificial intelligence, could attain new cognitive abilities that modern man cannot even fathom. But history has proven that humans have consistently displayed a disturbing willingness to destroy each other with the knowledge gained through science. Are mortals ready or competent enough to wield powers that can be considered divine in nature? This project seeks to understand and evaluate the possible moral implications that could follow the synthetic evolution of man. Through research into historical documents, fiction, and scientific journals, a conclusion will be reached that focuses on the interaction between conscience, perspicacity and capability in humans.



280 Room 101 1:20-2:20 Board 40

Lara Kabbani

Joan Brenner (Faculty Sponsor)

Department of Bioengineering, Bunker Hill Community College, Boston, MA, 02129

Control of Science and its Possible Misuse

We cannot imagine our lives without science, but also if we stop and think how much harm it could cause, we would be astonished. Science is a weapon with two edges. It can make our lives evolve toward the better if it is focused in that direction, but on the other hand it can cause devastation if misused. Examples of the misuse of biological research are biological weapons developed by countries, stockpiles of extinct disease, and stockpiles of current fatal diseases. So the questions that arise are who controls scientific research? And how can the results of scientific research be better controlled in our world?

Biology

281 Reading Room 1:20-2:20 Board 42

Kwadwo Ansong

Adan Colon-Carmona (Faculty Sponsor)

Department of Biology, UMass Boston, Boston, MA, 02125

Transforming Human Aryl Hydrocarbon Nuclear Translocator into Yeast

The aryl hydrocarbon receptor (AhR), a ligand-activated transcription factor and a member of the bHLH-PAS family, is found in humans and other vertebrates. Studies have shown that this receptor detects toxic and carcinogenic pollutants, such as dioxin and polycyclic aromatic hydrocarbons, and subsequently up-regulates detoxification pathways. To function, AhR must bind to the aryl hydrocarbon nuclear translocator (ARNT), also of the bHLH-PAS family. The heterodimer binds to the xenobiotic response element (XRE) of DNA and regulates transcription of target genes. AhR and ARNT were cloned into *Saccharomyces cerevisiae* (yeast) to construct practical biosensors. A plasmid with human ARNT was used in a PCR. The product was cloned into a galactose-inducible yeast expression vector and transformed into DH5 α *E. coli* cells. Plasmids containing the ARNT gene were extracted from *E. coli* and transformed into yeast. Colonies of yeast were used in a PCR with ARNT primers and the product sequenced. Results from sequencing matched nucleotides of human ARNT. To determine whether the ARNT transgenic construct is functional, we are currently performing a galactose induction assay followed by RT-PCR.



282 Concourse 10:45-11:45 Board 69
Marcos Bachman
Thomas Schoenfeld (Faculty Sponsor)
Department of Biology, Fitchburg State College, Fitchburg, MA, 01420

Persistent Neurogenesis in Adult Mouse Olfactory Epithelium

Olfactory receptor neurons (ORNs) reside in the epithelial lining of the nasal cavity and extend neural connections to the olfactory bulb of the brain, subserving the sense of smell. The olfactory epithelium of adult mice and many other adult animals shows evidence of active neurogenesis that persists throughout life. It is expected that the regulation of the ongoing development and turnover of these neuronal circuits may be critical to maintaining the fidelity of this sensory mechanism in the adult. However, it is unclear whether this persistent proliferation drives true turnover of all ORNs, or merely provides for a wellspring of young neurons ready to replace mature ORNs that occasionally die. To learn more about the relationship between active neurogenesis and existing populations of ORNs, premitotic precursor cells in the basal compartment of mouse olfactory epithelium were tagged with the nucleotide bromodeoxyuridine (BrdU) and detected by immunocytochemistry. Stereological analysis of the intensity of the BrdU immunolabeling and the linear density of labeled cells with respect to the thickness of the epithelium was pursued with a Leica DMR microscope and MicroBrightField's Stereo Investigator software. Our analysis will examine the hypothesis that the density and intensity of labeling will vary inversely with the size of the local population of ORNs.



283 Concourse 2:35-3:35 Board 72

Nabil Benhayoun

Wei-Lih Lee (Faculty Sponsor)

Department of Biology, UMass Amherst, Amherst, MA, 01003

Characterization of a Novel Gene, YJR008W, Involved in the Dynein Pathway in Budding Yeast

In the budding yeast *Saccharomyces Cerevisiae*, a complex dynein-mediated mechanism is responsible for nuclear segregation during mitosis. Due to the sequential nature of this dynein pathway it involves a large number of proteins, some of which may not have been discovered yet. One of these potential components is the gene YJR008W. Interestingly, a phylogenetic analysis of YJR008W shows that it is highly conserved across phyla and that it is the yeast homologue of the human gene Memo1. Understanding YJR008W's role in yeast could have a direct impact on our understanding of cellular cytoskeletal dynamics and would further our knowledge of the yeast dynein pathway. In order to answer this question I first determined Yjr008w localization by propagating a plasmid (met3-YJR008W-3mCherry) into wildtype yeast cells. The results showed that it is heavily localized at the nucleus and partially in the cytosol as aggregations that appear to be mitochondrial. As a follow up I analyzed Ndl1 and Pac1, two dynein pathway components that also localize at the nucleus, in *yjr008w* Δ strains. The results showed that the absence of Yjr008w does not compromise their nuclear localization. A growth assay was performed and revealed that *yjr008w* Δ and wildtype cells grow at similar paces. Also, a cold spindle positioning assay, which uses a dynein mutant as a standard for other protein defects showed that *yjr008w* Δ and wildtype cells had 0-2% misaligned spindles whereas *dyn1* Δ was above 60%. Further experiments are required to discover the YJR008W phenotype such as focusing on its localization at endogenous levels and its potential interactions with mitochondria.



284 Auditorium 2:35-3:35 Board 3

Alyssa Benson

Patricia Wadsworth (Faculty Sponsor)

Department of Biology, UMass Amherst, Amherst, MA, 01003

Kinesin Eg5 and Spindle Elongation

To segregate the genetic material into two daughter cells, mammalian cells undergo cell division, also known as mitosis. Mitosis involves many motor proteins in order to separate the chromosomes properly. One such motor protein is a member of the Kinesin 5 family, called Eg5. It has been shown to be involved in the sliding of antiparallel microtubules between the centrosomes, causing them to separate from each other during prophase and prometaphase. There is also another hypothesis that this protein acts as a brake for the sliding of antiparallel microtubules, thereby slowing down or stopping the spindle-pole separation during anaphase. I will observe LLCpk1 cells from metaphase through cytokinesis using phase contrast and fluorescence microscopy. First, control cells will be imaged in order to measure the average length of the spindle between the centrosomes at the completion of anaphase. Monastrol, an inhibitor of Eg5, induces monopolar spindle formation when added prior to metaphase. I will add monastrol to cells at the beginning of anaphase, in order to determine if pole-to-pole elongation in anaphase is altered. A decrease in elongation would indicate that Eg5 slides antiparallel microtubules in anaphase. An increase in elongation would indicate the Eg5 acts as a brake, stopping the spindle-pole separation. The extent and rate of elongation of the inhibited cells will be compared to the controls in order to determine the function of the motor protein Kinesin Eg5.



285 Room 101 1:20-2:20 Board 53

Denise Butler

Adan Colon-Carmona (Faculty Sponsor)

Department of Biology, UMass Boston, Boston, MA, 02125

The Effects of a Loss of Function CENP-E Mutation on the Fertility and Embryonic Development of *Arabidopsis thaliana*

The purpose of this project is to investigate the function of the motor protein Centromere Associated Protein E (CENP-E) in the process of cell division, gametogenesis, and development of *Arabidopsis thaliana*, a model plant species. CENP-E is a kinesin that moves on microtubules in cells, and associates to centromeres of chromosomes. Phenotypic analysis of pollen containing a loss-of-function CENP-E mutation was utilized to understand the role of CENP-E in meiosis. The haploid microspore products of cell division after the second meiotic event are necessary for this analysis, therefore the segregation and phenotype of the CENP-E loss-of-function mutation in a QUARTET (QRT) mutant background, which keeps all haploid cells together, facilitates the study of meiosis in both male and female gametogenesis. By studying QRT/CENP-E double mutants, the determination of the contribution of CENP-E to segregating genetic material during gametogenesis is facilitated. As a result of current research, it is hypothesized that normal gametophytic development has been altered by the mutation. Of 4893 tetrads of heterozygous plants analyzed, a 2:2 segregation ratio was observed in which 65.05% of the total population had 2 viable and 2 aborted pollen grains, which suggests that the mutation affects gametophytic development. Reciprocal crosses using heterozygous plants with the QRT/CENP-E double mutation, have shown that defective female gametophytic development is a cause of the reduction in pollen viability, as the population of ovules resulting from a reciprocal cross in which mutant plants were crossed as females to wildtype (WT) plants had decreased fertility. Subsequently, to determine if the loss-of-function mutation also results in chromosome misalignments within meiotic events, karyotyping of meiotic chromosomes by way of meiotic chromosome squashes will facilitate further understanding of the CENP-E mutation.



286 Concourse 2:35-3:35 Board 70

Abby Duffy

Michael Shiaris (Faculty Sponsor)

Department of Biology, UMass Boston, Boston, MA, 02125

Differences in Adhesion to Sediment Particles by Environmental Escherichia coli Strains

Bacterial adhesion to particles in a water column draws cells to the bottom allowing for protection from solar radiation and for exposure to higher nutrient levels thereby aiding cells' survival. Bacterial species interaction has been shown to increase adhesion in biofilm formation, though *E. coli* has not been studied for such interactions. *Escherichia coli*, is a fecal input indicator in natural fresh water. The objective of this study is to test the hypothesis that strains of *E. coli* will exhibit different adhesion abilities to sediment particles in mixed populations. Adhesion assays using two of three strains (M3-1, M3-3, and M7-7) isolated from river sediments to settling sterile quartz sand were performed in a 20-cm tall cylinder. Cells adhered to sand were separated by Waring blending and enumerated on agar plates. Strain ratios were estimated by PCR-amplification of strain polymorphic lengths of the 16S-23S rDNA intergenic spacer. Strain ratio, M3-3:M7-7, separated from sand was not significantly different from the ratio in the overlying water column ($p=0.26$), indicating that adhesion of these strains was not different. Strains M3-1 and M3-3 were not successfully separated from sand in a mixed strain adhesion assay, though cells were microscopically seen adhered to sand grains. The same strains were successfully separated from sand in single strain adhesion assays. Biofilm formation as measured by crystal violet density was significantly higher for M3-1 ($OD_{600}=0.19$) compared to M3-3 ($OD_{600}=0.035$) and M7-7 ($OD_{600}=0.076$) ($p<0.05$), though M3-3 and M7-7 showed no significant difference ($p=0.13$). Results indicate that, for *E. coli* bacterium, higher adhesion ability of one strain increases the overall adhesion for combined strains.



287 Concourse 2:35-3:35 Board 58

Nicole Eckart

Ana Caicedo (Faculty Sponsor)

Department of Biology, UMass Amherst, Amherst, MA, 01003

Genetic and Phenotypic Diversity in the New Model Species, *Brachypodium Distachyon*

Brachypodium distachyon is a species of grass native to Eurasia, which has recently gained status as a new plant model species. The study of *B. distachyon* is of particular interest because of the potential information it can provide about the genetic basis of traits important in temperate crop grasses such as wheat, barley, and rye, and for use of grasses as biofuels. To understand more about the population structure of *B. distachyon*, I characterized genetic and phenotypic variation in a geographically diverse sample of individuals. Particular attention was paid to differentiation between the diploid and polyploid forms of the species. I quantified various aspects of phenotypic diversity by observing physical traits during plants growth. I also extracted DNA and, using primers based on STS (sequenced tagged sites) loci in *O. sativa*, amplified regions of interest by polymerase chain reaction (PCR) and carried out DNA sequencing. It appears that some statistically significant distinctions can be made between diploid and polyploid traits. For example, polyploids have less biomass, but grow taller. The genotype data show little genetic diversity among homologous fragments, with an average nucleotide diversity value of 0.0014. Compared to other well studied plants, especially wild species, this represents low levels of nucleotide variation.



288 Auditorium 2:35-3:35 Board 8

Jessica Faraci

Patricia Wadsworth (Faculty Sponsor)

Department of Biology, UMass Amherst, Amherst, MA, 01003

Spindle Positioning in LLC-PK cells

The mitotic spindle is responsible for distributing DNA equally between two daughter cells during mitosis. The orientation of the spindle in the cell is important for determining the site of contractile ring formation, and thus the size and shape of the resulting daughter cells. It is widely believed that when the mitotic spindle is asymmetrically positioned, asymmetric division occurs, but recent observations have revealed symmetrically dividing cells with asymmetrically positioned spindles. Using phase contrast light microscopy I observed LLC-PK (pig kidney epithelium) cells and recorded spindle behavior. I observed that the mitotic spindle in these cells is remarkably dynamic, moving along the cell's long axis and even rotating within the cell. I hypothesize that cytoskeletal elements are important for spindle positioning. To test this hypothesis I will add nocodazole, to inhibit microtubules, and latrunculin B, to inhibit F-actin, to the cells after the onset of anaphase. The results will show if astral microtubules and the actin cortex are necessary for proper positioning of the mitotic spindle.



289 Concourse 2:35-3:35 Board 66

La'Kesha Francis

Joan Brenner (Faculty Sponsor)

Department of Biology, Bunker Hill Community College, Boston, MA, 02129

Phenotypic Characterization of Arabidopsis Mutants that Suppress Tryptophan

In Arabidopsis, the amino acid tryptophan can be synthesized into three important secondary metabolites: indolic glucosinolates and camalexin, which are anti-herbivory and anti bacterial and fungal compounds, respectively and auxin, which is needed for plant growth. Mutations in the synthesis pathway of tryptophan can dramatically affect the levels of secondary metabolites produced. The last step in producing tryptophan is catalyzed by the enzyme tryptophan synthase. This enzyme is a heterotetramer complex comprised of alpha-beta-beta-alpha subunits. In this process indole is made in the alpha subunit, then is quickly shuttled to the beta subunit and is attached to serine to form tryptophan. Specifically, trp 3 causes a mutation in the alpha subunit of trp synthase and trp 2 causes a mutation in the beta subunit. The mutations, trp 3 and trp 2 both cause tryptophan to be produced at a slower rate. Previous findings show that when the mutation trp 3 is grown at high light (60-70 μ E m⁻²s⁻¹) its phenotypical appearance is auxotrophic when compared to wild type Columbia, but the indolic glucosinolate levels are significantly higher. Therefore, our lab performed a suppressor screen to determine if a second mutation would cause the phenotype and secondary metabolite production to change. It was found that the suppressors had a better phenotypical appearance compared to trp 3 and similar elevated indolic glucosinolate and decreased camalexin levels. The glucosinolate and camalexin levels for the suppressors were higher than wild type. Future experiments include: a) determining the identity of the mutant gene and b) finding the reason as to why the phenotype and the secondary metabolisms vary. Crossing the suppressor strains to wild type will allow our group to identify the identity of the genes involved in the synthesis of tryptophan.



290 Concourse 10:45-11:45 Board 66
Hannah Freeman
David Christensen (Faculty Sponsor)
Department of Biology, Westfield State College, Westfield, MA, 01086

Evaluating Phytoplankton Abundance, Productivity and Phosphorus Cycling in Hammond Pond, Goshen, MA

We evaluated chemical, physical and biological parameters of Hammond Pond, Goshen, MA during the 2009 growing season. Characteristics including Secchi depth, dissolved oxygen, total phosphorus, nitrates, temperature, specific conductivity, and pH were measured. Phytoplankton (suspended algae) and zooplankton were also collected and analyzed. Because pond dynamics may be complicated it was necessary to measure multiple parameters in order to obtain the “entire picture” of annual lake water quality. Long-term data collection and analysis are necessary to capture pond variability from year to year. Wet and cool weather patterns dominated much of 2009, possibly making the results presented here unique as to a “typical” growing season. In particular, we wished to identify possible links between water quality parameters and phytoplankton (particularly blue-green algae) since algae can often have a significant influence on water clarity and may become a health concern. We did not observe blue-green algae in the pond during 2009. However, microstratification and internal phosphorus cycling may influence blue-green abundance in “normal” years. In general, conditions in the pond were good during 2009.



291 Room 101 1:20-2:20 Board 55

Victoria Hall

John Nambu (Faculty Sponsor)

Department of Biology, UMass Amherst, Amherst, MA, 01003

Analysis of Dichaete and Sox Gene Expression in Drosophila Midgut Stem Cells

Sox (SRY Box) proteins all share a high mobility group (HMG) DNA binding domain that is very similar in sequence to the HMG domain of SRY, the male sex-determining factor in mammals. There exist over 20 different Sox proteins that exhibit expression in a wide range of tissues and are important in many different developmental processes. In vertebrates, this includes sex determination, development of the nervous system, development of the gut, and development and differentiation of stem cells. The goal of this project is to analyze the potential role of several Drosophila Sox genes: Dichaete, SoxNeuro, Sox21a, and Sox21b, in the development of a novel set of intestinal stem cells (ISCs) found in the adult posterior midgut. Preliminary results using RT/PCR approaches have revealed that mRNAs for all four of these genes are expressed in the fly midgut. To determine if these genes exhibit expression specifically in the ISCs or their progeny, immunostaining experiments will be performed on fixed tissues to visualize the expression patterns of the corresponding proteins. These studies in Drosophila may provide a useful model for studying conserved properties of Sox proteins in stem cell biology.



292 Room 101 1:20-2:20 Board 56

Erik Holzwanger

Alan Christian (Faculty Sponsor)

Department of Biology, UMass Boston, Boston, MA, 02125

Kinship Analysis of the Eastern Lampmussel Freshwater Mussel [*Lampsilis radiata* (Gmelin, 1791)] of a Northeastern Coastal Zone Pond

Freshwater mussels are considered one of the most threatened groups of animals in the world and 70% of the 300 North American species are endangered, threatened, or extinct. Mussels are relatively sessile and have a complex life cycle in which they are required to live on a host fish for a short period of time before transforming into juveniles and adults. However, little is known about the relatedness and reproductive biology of mussels. The goal of this project is to determine the relatedness of the freshwater mussel species *Lampsilis radiata* in Tispaquin Pond near Middleborough, Massachusetts. To do so, we sampled mussels from a 400 m² area on a monthly basis using timed visual searches. After timed searches were completed, each mussel was identified to species, measured for length, width, depth and mass, marked with a unique identification code on its shell, recorded for an X and Y location, non-lethally sampled for mantle tissue, and returned to its initial location. To date, we have extracted total genomic DNA from 32 individuals and have conducted microsatellite (n=4 loci) analysis on 25 individuals. In addition to reporting on the relationship between spatial position and relatedness, we will also compare our *L. radiata* results to a companion study on *Elliptio complanata*. Because an individual fish is likely to be the host for a large number of glochidia from an individual female mussel and that transformed glochidia are likely to fall off a fish in nearby locations, we expect to find that individuals closer in spatial proximity are more related than those that are more spatially separated. There hasn't been much work done with *L. radiata* reproductive biology, thus this project will help fill in possible unknowns of *L. radiata*, and freshwater mussels in general, in terms of relatedness and reproductive consequences of relatedness and will be useful in conservation efforts.



293 Auditorium 2:35-3:35 Board 5

Abraham Khorasani

Patricia Wadsworth (Faculty Sponsor)

Department of Biology, UMass Amherst, Amherst, MA, 01003

Prospindle Formation as a Conserved Mitotic Spindle Assembly Mechanism in Animal Cells

In mammalian cells, which contain centrosomes, it was long thought that the mitotic spindle was formed from centrosome-nucleated microtubules. However, in cells lacking centrosomes, spindle microtubules are nucleated at the chromosomes. It has been shown that this kinetochore-mediated mechanism is conserved in centrosomal mammalian cells. Plant cells, which are also acentrosomal, display a third mechanism for spindle assembly. Microtubules are nucleated by and radiate from the nuclear envelope. Upon entry, the microtubules rearrange tangentially around the nuclear envelope, forming a structure called the prophase spindle or prospindle. We propose that this mechanism is conserved in centrosomal cells. To observe this, we will treat LLC-Pk1 pig kidney epithelial cells with nocodazole and observe prophase cells via fluorescence imaging as they are released from arrest. The protein TPX2 has been shown to be required for kinetochore-associated microtubule formation in animal cells and prospindle formation in plant cells. We predict that knockdown of TPX2 with siRNA will inhibit prospindle formation. The motor protein dynein localizes to the nuclear envelope in prophase and has been shown to transport microtubules in animal cells. We hypothesize that dynein is required to rearrange the nuclear envelope-associated microtubules into the prospindle apparatus.



294 Room 101 1:20-2:20 Board 52

Paulina Kocjan

Alan Christian (Faculty Sponsor)

Department of Biology, UMass Boston, Boston, MA, 02125

Relatedness Analysis of the Eastern Elliptio [Elliptio complanata (Lightfoot, 1786)] in an Northeastern Coastal Zone Pond

Freshwater mussels are considered one of the most threatened groups of animals in the world and 70 percent of the 300 North American species are endangered, threatened, or extinct. Mussels are relatively sessile and have a complex life cycle in which they are required to live on a host fish for a short period of time before transforming into juveniles and adults. The goal of project is to understanding the relationship between spatial patterns of adults and kinship (i.e. relatedness) of Tispaquin Pond, Massachusetts Elliptio complanata. To do so, we sampled mussels from a 400 m² area on a monthly basis using timed visual searches. After timed searches were completed, each mussel was identified to species, measured for length, width, depth and mass, marked with a unique identification code on its shell, recorded for an X and Y location, non-lethally sampled for mantle tissue, and returned to its initial location. To date, we have extracted total genomic DNA from 92 individuals and have conducted microsatellite (n=4 loci) analysis on 25 individuals. In addition to reporting on the relationship between spatial position and relatedness, we will also compare our E. complanata results to a companion study on Lampsilis radiata. Because an individual fish is likely to be the host for a large number of glochidia from an individual female mussel and that transformed glochidia are likely to fall off a fish in nearby locations, we expect to find that individuals closer in spatial proximity are more related than those that are more spatially separated.



295 Concourse 2:35-3:35 Board 60

Rebecca Lamothe

Samuel Hazen (Faculty Sponsor)

Department of Biology, UMass Amherst, Amherst, MA, 01003

Non-Coding RNA Control of Plant Cell Wall Biosynthesis and Biofuel Properties

The synthesis of secondary cell walls is an important process in vascular plants. Walls not only make up the vascular system necessary to transport water and nutrients, they also act as a barrier against various predators and other environmental insults. While these abilities are vital to the survival of plants, they also make them difficult to process as feedstock for biofuel production. There are many genes that regulate the secondary cell wall biosynthesis, particularly the formation of one of its components: lignin, including microRNAs (miRNAs). As their name implies, miRNAs are short RNA transcripts; however, unlike mRNAs, they are not translated into proteins, but play critical roles in gene regulation through their interactions with other transcripts. In the model plant *Arabidopsis*, the miRNA, MIR397B, is predicted to play a role in the degradation of a laccase gene (LAC4) which is hypothesized to play a role in lignin formation. In order to functionally characterize MIR397B, the miRNA was cloned into a series of vectors and transformed using the bacterium *Agrobacterium tumefaciens* into *Arabidopsis*. We will characterize LAC4 gene expression as well as the cell wall phenotype of mutant plants, including their biofuel feedstock quality. We will also screen for transcription factor proteins that interact with the MIR397B promoter using a yeast one-hybrid assay. If MIR397B does indeed play a role in LAC4 stability, there should be an observable vascular development defect and altered lignin content perhaps resulting in a plant more amenable to conversion to biofuels.



296 Concourse 2:35-3:35 Board 59

Scott Lee

Samuel Hazen (Faculty Sponsor)

Department of Biology, UMass Amherst, Amherst, MA, 01003

Development of a High Throughput Translational Bioassay to Plant Biofuel Properties

Using the well-developed microbial system, *Clostridium phytofermentans*, we have developed a robust bioassay for biomass digestibility and conversion to biofuels. The bioassay can be used to measure the impact of plant genetic diversity on digestibility, and thereby determine the potential effects of altered energy crop traits. Moreover, the use of *C. phytofermentans* takes into consideration specific organismal interactions, which will be critical in single stage fermentation or consolidated bioprocessing. In order to develop a baseline for our bioassay, we utilized two well characterized lignin mutants of sorghum, brown midrib-6 (*bmr-6*) and brown midrib-12 (*bmr-12*) and the double mutant (*bmr-6/bmr-12*). Lignin, a component of secondary cell walls, is strongly associated with making plant tissue recalcitrant to conversion to biofuels. These mutants exhibit a significant reduction in total lignin content and are therefore more digestible. Whole field grown, de-grained plants were ground to a fine powder and used as a substrate for *C. phytofermentans* growth. We detected significant differences in ethanol production among the sorghum genotypes by HPLC analysis of three day old anaerobic cultures. We also measured significant genetic variation among different accessions of *Arabidopsis*. By using *C. phytofermentans* as an indicator of feedstock quality we can observe differences both between and among species, as well as take into account specific plant-microbe interactions. Further modifications to this assay will include reducing reaction volume to increase throughput. Ultimately, we will use this assay to study the genetics of plant biofuel properties.



297 Room 101 1:20-2:20 Board 50

Katharine Masterjohn

Brad Bryan (Faculty Sponsor)

Department of Biology, Worcester State College, Worcester, MA, 01602

Pharmacological Inhibition of Rho-kinase Signaling Enhances Cisplatin Resistance in Neuroblastoma Cells

The role of the RhoA signaling pathway in cell survival remains a very controversial issue, with activation of the Rho effector, ROCK, being pro-apoptotic in many cell types and anti-apoptotic in others. Previous studies in our lab and others have demonstrated that ROCK inhibition with the specific pharmacological inhibitor Y27632 leads to a decrease in tumor formation in *in vivo* models. To test if ROCK protein inhibition contributes to tumor cell survival or death following chemotherapeutic treatment with the platinating agent cisplatin, we treated cisplatin damaged human SK-N-SH, SHEP, and NGP neuroblastoma cells with Y27632 or sham and monitored both short term and long term cell survival. Moreover, we assayed if ROCK inhibition led to alterations in the expression of genes known to be involved in cisplatin resistance. Our studies indicate that Y27632 treatment results in increased cell survival and alterations in the expression of cisplatin resistance genes in favor of chemoresistance. These findings suggest that Y27632 treatment in combination with cisplatin chemotherapy may lead to enhanced tumor chemoresistance.



298 Auditorium 2:35-3:35 Board 6

Dominick Matos

Patricia Wadsworth (Faculty Sponsor)

Department of Biology, UMass Amherst, Amherst, MA, 01003

Lk6 Analysis in Early Development

In *Drosophila melanogaster*, the Lk6 gene codes for an important protein that is involved in multiple biological processes including microtubule-based processing, regulation of cell growth, and stress response. Although this gene has been studied in aging and stress, it has not been studied in early development. Because of this, this study's focus was to observe the effects of Lk6 on the nervous system of fly embryos. The research centered on staining the nervous system of developing embryos using immunocytochemistry techniques and the Bp102 primary antibody, which stains the axons of the embryo's central nervous system. To demonstrate that background mutations were not responsible for the observed defects, embryos were stained that resulted from deficiency crosses with Lk6 mutants. The results showed that when the Lk6 gene is mutated, severe defects of the nervous system occur during embryonic development. Axonal connections between neuronal cells were absent, and an absence of order in the system was observed. In some cases, the axons of the brain lobe were quite discombobulated all around the upper region of the embryo. Although the study has brought insight of Lk6's effects on nervous system development, further study is needed to see the full extent of the gene's impact. Most likely the use of different antibodies that stain other components of the nervous system will be employed. It now appears that Lk6 may play an important role in early development of the *Drosophila Melanogaster*.



299 Room 101 1:20-2:20 Board 51

Allison McNulty

Eugene Muller (Faculty Sponsor)

Department of Biology, Framingham State College, Framingham, MA, 01702

Searching for the Cause of the 1918 Influenza Pandemic

Identifying the cause of a disease provides scientists with vital clues for understanding how to cure or prevent that disease. Scientists once believed *Haemophilus influenzae*, a bacillus, caused influenza. When an influenza pandemic swept the world from 1918-1919 scientists began to question what they knew about the disease. Usually victims recovered after a few weeks and only the very old or young died. From March 1918 through the spring of 1919 a new strain of influenza targeted those aged 15-34. More than 50 million people worldwide are estimated to have died, 675,000 of them were Americans; for historical context, WWI (1914-1918) is estimated to have killed 8.5 million soldiers worldwide. Despite beginning the search in 1918, the causative agent remained elusive until some 80 years after the outbreak. This paper is an analysis of the search for the cause of the 1918 pandemic. The research methods included using historical and current documents including scientific experiments from 1918 up through the present and first hand accounts of the pandemic, as well as Census Bureau data to examine how scientists discovered the cause of the 1918 pandemic. In addition, this paper studied the effects of such a cataclysmic pandemic on daily life in American cities and towns including, but not limited to, citizens' responses to the pandemic and the scientific research of the day.



300 Concourse 2:35-3:35 Board 71

Lauren Mullin

Rick Kesseli (Faculty Sponsor)

Department of Biology, UMass Boston, Boston, MA, 02125

Analysis of Microbial Communities of the *Arabidopsis thaliana* Rhizosphere in Soils Treated with Fungicides Mancozeb and Terraclor

Microbes in the soil are known to have a close association with the roots of plants in what has been termed the rhizosphere. These interactions have been shown to impact many life history traits of a plant species, including growth and reproductive fitness. Here I investigate the effects of fungicide applications on microbial communities in the rhizosphere of *Arabidopsis thaliana*, and on plant reproduction and growth. Different ecotypes of *A. thaliana* are known to harbor unique rhizobacterial communities. Although *A. thaliana* cultivates no commensal mycorrhizal fungal communities, fungi and bacteria interact with one another in natural soil. Therefore, we anticipate that fungicide applications will alter the existing bacterial community in both the soil and rhizosphere. I grew two ecotypes of *A. thaliana*, Ler and Col, in both non-sterilized and sterilized soils and applied commercial fungicides Mancozeb and Terraclor at three distinct application levels. After seven weeks of growth, we recorded plant biomass, inflorescence height, and fruit number, characterized microbial communities with Biolog Ecoplates (which measure carbon substrate usage), and quantified microbial community richness using DNA fingerprinting T-RFLP analysis. We predict that the different fungicides and each sequential fungicide applications will generate unique soil bacterial community profiles for both ecotypes, and impact plant biomass and reproduction. Changes in microbial ecology can affect plant success; therefore understanding the soil community impacts of widely used fungicides has important implications for agriculture, plant invasion research, restoration ecology, and the field of plant-microbe interactions.



301 Concourse 2:35-3:35 Board 69

Khanh Pham

John Nambu (Faculty Sponsor)

Department of Biology, UMass Amherst, Amherst, MA, 01003

Characterization of Antisera Against Drosophila Dichaete and Other Sox Proteins

Sox transcription factors all contain an evolutionarily conserved DNA-binding HMG domain. In *Drosophila* there are 8 different Sox proteins including Dichaete, SoxN, Sox21a, and Sox21b, whose HMG domains each share ~90% identity. Previous studies have shown that Dichaete and SoxN are both critical for early embryonic central nervous system (CNS) development and that Sox21a and Sox21b also exhibit embryonic expression. In the first part of this study, we tested the specificity of a rabbit antiserum generated against the NH₂+HMG domain of Dichaete. Based on sequence similarity, we predicted that anti-Dichaete would cross-react with other *Drosophila* Sox proteins and perhaps even the related mammalian Sox-2 protein. Applied techniques included collecting virgins, setting up genetic crosses, performing immunochemistry, and mounting tissues on slides for analysis. Results showed that our initial hypothesis was correct. Anti-D serum cross-reacted with both SoxN and Sox2. In the second part of this study, the purpose was to generate anti-Sox21a and anti-SoxN sera. This experiment utilized PCR to amplify portions of the coding regions of these genes that do not correspond to the conserved HMG domain. Other techniques included transforming Sox21a and SoxN cDNA clones, performing electrophoresis, and purifying DNA. In the final steps, the expressed proteins (e.g. Sox21a-tag, SoxN-tag) will be expressed in *E. coli* and purified via affinity chromatography. After the specific tagged proteins are purified, they will be given to the UMASS Antibody Facility to immunize rabbits and generate antisera for future studies.



302 Concourse 2:35-3:35 Board 57

Abby L Genovese, Anna Borowik, Erika Prouty , David Christensen (Faculty Sponsor)

Department of Biology, Westfield State College, Westfield, MA, 01086

Protocol for Identifying the Presence of Nonnative Macrophytes in Hammond Pond, Goshen, MA

Maintaining local biodiversity is critical, specifically in times when invasive species are frequently disrupting native habitats. This is largely true in aquatic ecosystems that are used for many human needs such as recreation. It is critical to protect areas that have not yet been impacted by invasive species and help to recover those that have been affected. We developed a sampling protocol to estimate the macrophyte composition of Hammond Pond, Goshen, MA, 2009. In particular, this protocol was designed to detect the presence of nonnative macrophyte species before they become a problem. We sampled the pond systematically with seven separate integrated transects focused on the shallower portion of the pond where macrophytes were most abundant. We did not detect the presence of nonnative macrophyte species in Hammond Pond. The most dominate macrophyte was bladderwort (*Utricularis* spp.). We also found in moderate abundance: water bulrush (*Scirpus subterminalis*), common bur-reed (*Sparganium eurycarpum*), floating-leaf pondweed (*Potamogeton natans*), and watershield (*Brasenia schreberi*). We recommend applying this protocol on a biannual basis as a preventative measure to ensure native biodiversity and to detect the presence of nonnative species. Management plans could be established to prevent introductions and to control established nonnative macrophytes.



303 Concourse 2:35-3:35 Board 65

Bibiana Quiasua

Joan Brenner (Faculty Sponsor)

Department of Biology, Bunker Hill Community College, Boston, MA, 02129

Conventional Medicine vs. Palliative Care

The proximity to death makes people with advanced cancer more vulnerable to experience physical, psychological and psychiatric complications related to the disease. From all this emerges the need for palliative care. According to WHO, palliative care is the total active care of patients whose illnesses do not respond to curative treatment. It is also, the control of pain, social and spiritual problems. The main objective is to achieve better quality of life. However, what if the taken treatments cannot prolong life without incriminating health itself? The fact that the patient is terminally ill is proof that he has already undergone through serious body damages. Furthermore, the truth is that there is a wide gap between palliative medicine and conventional medicine, because life quality is becoming less important. They focus more on disease treatment and not the person. For palliative care, nutrition is one of the most important aspects. The contribution of good nutrition is essential. Food is a symbol of health and activity. In the situation of a terminal illness it is common for patients to have problems related to it. However palliative doctors admit that therapeutic measures of nutritional support are useless in terminally ill patients, instead of helping, they hurt and affect the natural process. Consequently, what is left to ask is whether the patient indeed needs the palliative care or is better for the patient to stop having the treatments because it would not make any difference, on the contrary it will cause more harm.



304 Concourse 2:35-3:35 Board 68

Christine Rega

Jeffrey Podos (Faculty Sponsor)

Department of Biology, UMass Amherst, Amherst, MA, 01003

Song Sharing and Song Performance Variation in the Swamp Sparrow
(*Melospiza georgiana*)

Song plays an integral role in avian communication through its use in territory defense and mate attraction. The range of song types available and their physical demands to male songbirds can vary in a population, which allows some males to better compete against others in aggressive contexts and for mates. We can examine song repertoires and song types to identify if these signals are honest indicators of quality, and the range of this quality throughout the population, by studying the swamp sparrow (*Melospiza georgiana*). Firstly, my goal was to identify the level of incidence of song sharing in a population and secondly, to determine how song types compare with male performance levels and condition. For the use of this study, vocal performance describes the physiological challenge to a bird as two parameters, trill rate and frequency bandwidth, are maximized. From wild recordings in both ambient and playback contexts, I have identified song type repertoires and measured vocal performance levels for each male in the population. With this information, I will analyze the index of song sharing and the variance of performance levels in the population. I predict song sharing to occur at a high index for males with adjacent territories and high song performance to occur for males with a high mass to tarsus ratio, representing a greater condition. With this research, we can gain insight to how males use song to communicate information regarding male quality and into the honesty inherent in these signals.



305 Room 101 1:20-2:20 Board 44

Ardalan Sayan

Rolf Karlstrom (Faculty Sponsor)

Department of Biology, UMass Amherst, Amherst, MA, 01003

Quantification of Endocrine Cell Populations in the Post-embryonic Zebrafish Pituitary

The vertebrate pituitary gland is located at the base of the brain and secretes hormones that regulate growth, metabolism, and fertility. Proper regulation of endocrine cell numbers is critical during development and in the adult, with misregulation leading to relatively common tumors called pituitary adenomas. Sonic Hedgehog (Shh) is a small signaling molecule known to be a critical player in the early development and patterning of the pituitary, but it is not yet known if it continues to play a role in the regulation of cell numbers at postembryonic stages. As a first step towards understanding the mechanisms that regulate the growth of the pituitary, we are quantifying endocrine cell populations in the embryonic and larval zebrafish pituitary. Specifically, we are quantifying Prolactin, Growth Hormone, POMC, and Thyroid Stimulating hormone expressing cells in 2, 3, 4, 5, 6, and 8 day larvae using in situ hybridization, as well as the *pomc:gfp* and *prl:rfp* transgenic lines. Here we show that ACTH and MSH secreting cells increase at an average rate of 8 and 6 cells per day respectively during larval stages. GH, Prolactin, and TSH secreting cells increase at a rate of 8, 7, and 8 cells per day respectively during larval stages. We have also begun to examine how Hedgehog signaling affects these growth rates using the Hh inhibitor cyclopamine. Treatment with cyclopamine from 2 to 4 days affects the morphology of the jaw and pituitary gland and also affects the increases in endocrine cell numbers. On average, the growth in endocrine cell numbers is halved with cyclopamine treatments that also cause jaw defects. This indicates that Hh signaling is needed for the normal increases in endocrine cell numbers that occur after embryogenesis is complete. Our data suggest that zebrafish can provide a powerful model for understanding the molecular and cellular mechanisms underlying endocrine cell growth. Since mis-regulation of Shh signaling has been implicated in adenomas, we hope that this work will ultimately provide insight into the causation and prevention of these common tumors.



306 Auditorium 2:35-3:35 Board 7

Rachael Stevenson

Patricia Wadsworth (Faculty Sponsor)

Department of Biology, UMass Amherst, Amherst, MA, 01003

Investigation of Dynein and Dynactin Dynamics in Live Mitotic Cells

Cytoplasmic dynein is a multisubunit protein complex that powers minus-end-directed motility in a variety of cellular processes. The motor activity of dynein is regulated by another multisubunit complex, dynactin, which binds to the intermediate chain of the dynein complex. The dynein-dynactin complex contributes to several aspects of mitosis including spindle pole focusing; chromosome alignment and motion; and spindle positioning. In fixed cells, dynein and dynactin localize to the spindle poles, kinetochore, interpolar, and astral microtubules in mammalian cells. Despite these observations, little is known about the dynamics of dynein and dynactin in live cells. We will design a novel cell line that will enable us to observe the dynamics of dynein and dynactin during mitosis. For this project, we are using Bacterial Artificial Chromosomes (BAC) to generate fluorescently labeled dynein and dynactin. Because BACs contain all regulatory elements of the genes being cloned, they allow for endogenous levels of that gene's expression, which is important when trying to understand function. We are going to examine one intermediate chain of dynein and the p150 subunit of dynactin. Thus far, we have amplified a GFP-LAP tag with homology arms specific to the p150 or the dynein IC gene and inserted a pRED/ET plasmid into bacteria containing our dynein intermediate chain and dynactin p150 subunit-BACs. The pRed/ET plasmid, once induced, will allow the bacterial cells to use homologous recombination to replace the stop codon in our gene with the GFP-LAP tag. In the near future, we will transfect our BACs into mammalian cells and select for those with expression levels at or near endogenous. We will observe these cells during mitosis to visualize the localization and dynamics of dynein and dynactin.



307 Concourse 10:45-11:45 Board 65
Elizabeth Stewart
David Christensen (Faculty Sponsor)
Department of Biology, Westfield State College, Westfield, MA, 01086

Influence of Largemouth Bass Predation on Algae Concentrations in a Laboratory Setting

Top predators can often influence food webs in aquatic environments, resulting in a trophic cascade that can lead to a decrease in algae concentrations. To some degree, this can affect water clarity in small lakes. This experiment will test this theory in laboratory conditions using largemouth bass (*Micropterus salmoides*), emerald shiners (*Notropis atherinoides*), the zooplankton *Daphnia* and three different types of green algae. We will use 10-gallon glass tanks with appropriate lighting and aeration. The first tank will act as the control, containing only the algae. One additional tank will contain algae and zooplankton, one will contain algae, zooplankton, and shiners, and one will contain algae, zooplankton, shiners, and bass. The potential outcome is that the tank with more top predators (bass), will have a lower concentration of algae due to the trophic cascade concept. If this is supported, it can be hypothesized that the introduction of a piscivore in a small lake or pond could be used to manage algae concentrations and lake clarity. Results could also be indicative of the potential trophic disruptions introduced predators may cause on ecosystems.



308 Room 101 1:20-2:20 Board 46

Gimena Suarez

Howard Thomas (Faculty Sponsor)

Department of Biology, Fitchburg State College, Fitchburg, MA, 01420

Patterns of Infestation by *Skrjabinigylus Nasicola* in *Mustela Vison* and *Mustela Erminea*

Skrjabinigylus nasicola is a parasitic nematode that infests the nasal cavities of mink (*Mustela vison*) and ermine (*Mustela erminea*). This infestation causes damages to the skulls of mink and ermine. These damages are discoloration, swelling, and perforation. This study was conducted to examine the role that age, gender, and host species play in the prevalence and progression of infestation by *S. nasicola*. Only a few scientific publications have dealt with the dynamics of this parasite-host relationship. Most published articles dealt with a simple statement of prevalence in a host population. There has been no study of the type and extent of damage to the skull of the host. The skulls examined for this study were from the collection of the Museum of Comparative Zoology (MCZ), Harvard University, Massachusetts. The skulls were examined for cranial damages related to infection from *Skrjabinigylus nasicola*. This study categorized and quantified these damages. Comparison of infestation rates were made between age and gender groups within species and between species. In *Mustela vison*, the frequencies of discoloration, swelling, and perforation were higher in juveniles than adults. The only age-related difference in *Mustela erminea* was seen in higher perforation rates in adults. The swelling and perforation rates were higher in male than female mink. The only gender-related difference in ermine was found with higher perforation rates in males. The discoloration, swelling, and perforation rates were higher in ermine than in mink. Age, gender, and host species appear to affect the infestation rates of *S. nasicola*.



309 Concourse 2:35-3:35 Board 67

Gina Trabucco

Samuel Hazen (Faculty Sponsor)

Department of Biology, UMass Amherst, Amherst, MA, 01003

Cell Wall Mutants of the Energy Crop Model System *Brachypodium distachyon*

Dependence on foreign fossil fuels has had an obvious negative impact on the environment and socio-political aspects of our society; thus, the ability to utilize domestic biofuels is becoming increasingly necessary. Plant cellulose is an important raw material as it is a potential low-cost source of simple sugars that can be converted into liquid transportation fuel. Another key constituent of plant cell walls is lignin, which provides form and rigidity, but is an inhibitor to biofuel potential. We seek to develop energy crops that are highly amenable to feedstock conversion through understanding and manipulating cell wall biosynthesis. Accordingly, we have generated loss-of-function mutants in the model grass species *Brachypodium distachyon*. Artificial microRNAs were designed to specifically target putative cellulose and lignin biosynthesis genes and stably integrated into the *B. distachyon* genome by *Agrobacterium*-mediated transformation. Transgenic mutant plants will be assayed for altered target gene transcript abundance, morphology defects, and altered biofuel feedstock properties. Functional characterization of these key biosynthetic enzymes will provide a starting point to understanding their regulation and the potential for energy crop improvement.



310 Reading Room 1:20-2:20 Board 45

Baovy Tran

Adan Colon-Carmona (Faculty Sponsor)

Department of Biology, UMass Boston, Boston, MA, 02125

Understanding the role of SHY2 in Arabidopsis Lateral Root Development

Short Hypocotyl 2 (SHY2) is an Aux/IAA gene involved in auxin signaling. Auxin controls various aspects of plant development, including vascular differentiation, leaf and shoot morphology and lateral root initiation and elongation. Phenotypically, the *shy2-2* mutant produces excess lateral roots compared to a wild type control (WT), but the genetic mechanism for this is unknown. In WT, the Lateral Organ Boundaries Domain16 (LBD16) gene is regulated by auxin-dependent transcriptional activators ARF7 and ARF19 to control the development of lateral roots. The number of lateral roots depends on the level of LBD16 expression. Our hypothesis is that in the *shy2-2* mutant, LBD16 is expressed at higher levels compared to WT, which could explain the lateral root phenotype. Preliminary data on the role of SHY2 in regulating LBD16 expression will be presented.



311 Concourse 3:50-4:50 Board 71

Chiedozie Uwandu

Adan Colon-Carmona (Faculty Sponsor)

Department of Biology, UMass Boston, Boston, MA, 02125

An Orphan Kinesin in Regulating Cell Division and Growth in *Arabidopsis thaliana*

Kinesins are mechanochemical proteins that utilize the free energy of ATP hydrolysis to power their movement across microtubules. Kinesins are important for cell division because they facilitate spindle orientation and chromosome separation. The plant model system *Arabidopsis thaliana* has 61 kinesin genes, as compared to 45 in humans, 6 in *Saccharomyces cerevisiae* and 24 in *Drosophila melanogaster*. A possible reason for why *Arabidopsis thaliana* has such a high number of kinesin genes could be due to the vast array of plant-specific microtubule-associated processes that may require additional kinesins, such as in the formation of the pre-prophase band or the phragmoplast. Here, the kinesin, AT5G66310, a N-terminal motor kinesin, was studied. To begin to dissect functions for AT5G66310, specifically its role in cell division and growth, transfer-DNA (T-DNA) insertional mutants were identified and characterized. Five different alleles of are being characterized. Due to the antibiotic resistance conferred by the T-DNA insertions, it is possible to select for plants homozygous for the inserts and characterize their phenotypic and genotypic expressions. If AT5G66310 is important in cell division and growth, certain phenotypes such as deformed organs as well as improperly oriented microtubules, improperly formed cells and decreased cell numbers are expected. Upon examination of these expected phenotypic variations in the mutant alleles, it will be possible to conclude if kinesin AT5G66310 is important in regulating cell growth and division.



312 Room 101 1:20-2:20 Board 43

Olivier Van Houtte

Wei-Lih Lee (Faculty Sponsor)

Department of Biology, UMass Amherst, Amherst, MA, 01003

Determining The Role of Num1 Domains in Foci Assembly for Anchoring of Dynein Motor at the Cell Membrane

I am investigating the role of the protein Num-1, the only known cortical component of the dynein pathway. The protein is known to gather in patches (dot like appearance) at the cell membrane and is hypothesized to interact with dynein, a motor protein, to pull the nucleus into the budding cell. The Num-1 protein consists of several different domains but the function of each is not yet known. This work investigates the role of each domain in targeting Num1 to the cortex, self-assembly into visibly distinct patches, and their contact with dynein. In order to isolate the different domains, mutants were created and the function of each was tested using a cold-binucleate assay and a spindle misalignment assay. The intensity of Num-1 patches was also measured to determine the quantity of protein in each "dot." Evidence shows that the coiled-coil domain, and the pleckstrin homology (PH) domain may be necessary and sufficient for protein function (unpublished data). In the future, further investigation into the interaction between dynein and Num-1 will be necessary.



313 Auditorium 2:35-3:35 Board 4

Kenneth Vasques

Elsbeth Walker (Faculty Sponsor)

Department of Biology, UMass Amherst, Amherst, MA, 01003

Investigation of the Yellow-Stripe Like Family of Iron Transporters in *Zea mays*

Iron homeostasis is a tightly regulated process that is essential to all living organisms. In maize (*Zea mays*), iron is transported from the soil to the roots utilizing phytosiderophores (PS). PS are released by the plant into the soil, where they act to chelate iron prior to transport via Yellow Stripe1 (YS1), a major iron-PS transporter in the roots. Once iron enters the root, little is known about the transfer of iron to the xylem and its eventual transport to the shoots and leaves. Knowledge about these processes is crucial for iron biofortification, which is the engineering of staple crops to accumulate more iron in their edible parts. In this study, I have investigated the expression of YS1 in maize. To accomplish this, I have characterized transgenic maize lines which contain a reporter gene (beta-glucuronidase; GUS) fused to the YS1 promoter. I grew hydroponic YS1 promoter-GUS transgenic plants, stained their roots and leaves for GUS activity, and prepared tissue sections for analysis of expression patterns. As we would expect for a primary iron importer protein,, the YS1 promoter conferred GUS activity in the epidermis of the roots. Preliminary analysis of leaves indicated a problem with access of the GUS substrate in the tissues. I plan to use vacuum infiltration to better infiltrate the GUS stain into the leaves for analysis. I am also investigating the roles of other Yellow Stripe-Like (YSL) metal transporter homologs in maize. These proteins are similar in sequence to YS1, but appear to have functions in the internal translocation of metals, rather than in primary metal uptake by roots. I am currently sequencing maize cDNA clones of maize YSL1, 2, 12, 4, 17, 14A, 11, and 11A. Once sequenced, we will use these cDNAs in *Xenopus* oocyte electrophysiology and yeast complementation experiments to better understand the substrate specificity and transport functionality of the YSLs.



314 Concourse 10:45-11:45 Board 67

Lane Wilson

Tracie Ferreira (Faculty Sponsor)

Department of Biology, UMass Dartmouth, N. Dartmouth, MA, 02747-2300

Analysis of a Wnt Clade Associated with Orofacial Clefting

Craniofacial defects strike 1/500 live births. One of the most common defects is cleft lip and/or palate. Wnt 1 and Wnt 9 a/b are members of a gene clade associated with oral facial clefting. Our objective is to determine the role of these Wnts in craniofacial development. We hypothesize that lack of function of Wnt 1 or Wnt 9 a/b results in craniofacial defects in zebrafish. The methods we will use to analyze gene expression and gene functions are Reverse Transcriptase Polymerase Chain Reaction (RT-PCR), whole mount in situ hybridization (WISH), and gene-knockdown by morpholino. Our results show differential expression of two Wnt-1 transcripts, one expressed zygotically and again in adulthood, the other expressed after 6 hpf and in juvenile stages. WISH analysis confirmed separate expression domains for Wnt 9 a/b and loss of function of Wnt 9a or 9b results in craniofacial cartilage defects.



Chemical Engineering

315 Concourse 3:50-4:50 Board 57

Meenal Datta

Susan Roberts (Faculty Sponsor)

Department of Chemical Engineering, UMass Amherst, Amherst, MA, 01003

Assessing the Ability of Perfluorocarbons Incorporated in Alginate Matrices to Promote Oxygen Diffusion to Encapsulated Cells

Encapsulated cell systems, in which immobilized cells are retained within a biomaterial, can be implanted into a patient, allowing function and preventing immune response. Type 1 Diabetes (T1D) is an autoimmune disease in which the immune system attacks pancreatic beta cells, a subset of the islets of Langerhans that produce insulin. Cell encapsulation may overcome the limitations associated with donor cell transplants by providing a barrier to the immune system, promoting the viability of the encapsulated islets. The Roberts Research Group at the University of Massachusetts Amherst has developed cell encapsulation techniques specifically for cells requiring either high or constant oxygen demands, such as islets. Alginate is employed as an encapsulation matrix due to its high water content and ability to provide transplanted cells with a protective barrier from mechanical stress and immune rejection. To overcome hypoxic conditions, perfluorocarbons (PFCs) are incorporated as oxygen vectors in the alginate matrix to facilitate diffusion of oxygen to the encapsulated cells. The goal of my research is to assess encapsulation techniques by optimizing cell viability through increasing the concentration of dissolved oxygen at the core of the capsule. The oxygen diffusivity of alginate-only and alginate/PFC encapsulation matrices will be tested to determine the PFC concentration necessary to get the desired cellular response. By calculating the oxygen consumption rates of different matrix formulations, optimal conditions can be established.



316 Concourse 3:50-4:50 Board 59

Sarena Horava

Susan Roberts (Faculty Sponsor)

Department of Chemical Engineering, UMass Amherst, Amherst, MA, 01003

An Investigation of the Fundamental Properties of Alginate Hydrogel via Protein Diffusion

The successful encapsulation of cells in biomaterials requires an understanding of the protein diffusion within the network and the effects of gelation and formulation on the overall structure. We use the biopolymer alginate to encapsulate islet cells for eventual transplantation to replace the function of diseased tissue. Because these cells must secrete insulin in response to high glucose levels, we are studying the effect of additives to traditional alginate formulations on protein diffusion through these matrices. Homogenous gels of 1% alginate were formed via ionic cross-linking using CaEDTA-GDL and 1M CaCl₂. Five gel formulations (+/- 1%, 2% pluronic F68 block copolymer surfactant and +/- 10% perfluorooctyl bromide (PFOB)) were tested for the effects on the gel matrix. Diffusion coefficients of three model proteins, riboflavin, bovine serum albumin (BSA), and insulin, are under investigation in these hydrogel networks. Protein diffusion for hydrogel disks is monitored from 2 minutes to 2 hours and colorimetric protein assays, including BCA Protein Assay, is used to determine the protein release profiles. The importance of understanding the fundamental diffusion properties of alginate gels is necessary for effective design of devices for applications involving cells, such as islet cell transplantation for the treatment of type 1 diabetes.



Chemistry

317 Concourse 3:50-4:50 Board 68

Kweku Acquah

Eihab Jaber (Faculty Sponsor)

Department of Chemistry, Worcester State College, Worcester, MA, 01602

Stabilization Studies of Metal-Chelating Complexes via Computational Methods

The bidentate chelating ligands of a metal ion are known to result in a more stable molecule due to the chelate effect when compared with monodentate ligands on the same metal ion. In this work, we examine the enthalpic contribution to the stabilization of the metal ion complexes as the ligands change from monodentate to bidentate and subsequently, as the molecule itself becomes more macrocyclic. Copper (II), Cadmium (II), and Nickel (II), were used as the subject metal ions, and the monodentate and bidentate chelating ligands were NH_3 and ethyldiamene (EN), respectively. The equilibrium values for Ni(en) and Cd(en) , were 46.9, and 337.5, respectively. Our findings suggest that different equilibrium positions are established upon addition of new ligand interactions, favoring the bidentate chelating ligand interactions over the monodentate ligands interactions.



318 Concourse 3:50-4:50 Board 69

Geoffrey Austein-Miller

Ricardo Metz (Faculty Sponsor)

Department of Chemistry, UMass Amherst, Amherst, MA, 01003

Vibrational and Electronic Spectroscopy of Cobalt Cation-Water Complexes

We live in a world based around water which makes the understanding of it immensely important. Our experiment studies the interactions between cobalt cation and water on a microscopic scale. This interaction is important for a few reasons. $\text{Co}^+(\text{H}_2\text{O})$, and similar $\text{M}^+(\text{H}_2\text{O})$ interactions, are important in biological systems in such places as enzymatic centers. Also, $\text{Co}^+(\text{H}_2\text{O})$ is a good example of a noncovalent interaction that shows bond strength close to covalent bonds. Our specific goal is to measure the length and strength of the metal-water bond and how binding to the metal changes the structure of the water. We form these water bound cations using a laser ablation source, and we measure their electronic and vibrational spectra using photofragment spectroscopy. In this technique, we use a time-of-flight mass spectrometer to measure the masses of parent ions. We then dissociate them with a tunable dye laser (for the electronic spectroscopy) or an infrared laser system (for the vibrational spectroscopy). Time-of-flight mass spectrometry is then used to determine fragment molecules that are formed. By measuring the fragment yield as a function of the laser wavelength we obtain a photodissociation spectrum. This allows us to obtain the electronic and vibrational spectra of $\text{Co}^+(\text{H}_2\text{O})$, $\text{Co}^+(\text{HOD})$, and $\text{Co}^+(\text{D}_2\text{O})$. In the electronic spectra, we observe progressions in the $\text{Co}^+-\text{H}_2\text{O}$ stretch in two excited electronic states. From the onset of dissociation we measure the $\text{Co}^+-\text{H}_2\text{O}$ bond strength. In addition, we measure the O-H vibrational stretching frequencies in the ground electronic state using a two laser depletion experiment. In this method one laser is fixed to an electronic transition in the visible. A second, infrared, laser is scanned through an O-H absorption. If molecules are vibrationally excited, population is removed from the ground state, and less photodissociation is observed.



319 Concourse 1:20-2:20 Board 58

Traci Brun

Catherine Dignam (Faculty Sponsor)

Department of Chemistry, Framingham State College, Framingham, MA,
01702

Quantifying Resveratrol Content in Red Wines using HPLC Analysis

trans-Resveratrol (3, 5, 4'-trihydroxy-stilbene) is a naturally occurring antioxidant molecule found in the skin of grapes and other grape products. It is known to provide several health benefits for humans, including anti-cancer, anti-inflammatory, and cardiovascular disease prevention. The function of resveratrol in plants is to protect against pathogen attack and UV radiation. An HPLC method (high performance liquid chromatography) is used to analyze the content of resveratrol in red wine samples. Results of this experimental study will be presented including details of the optimized LC conditions, resveratrol calibration curve, and progress toward a reliable protocol for extracting and isolating the resveratrol from wine samples.



320 Concourse 1:20-2:20 Board 67

Alena Carlson

Bela Torok (Faculty Sponsor)

Department of Chemistry, UMass Boston, Boston, MA, 02125

Synthesis of Aziridines by Montmorillonite Heterogeneous Catalysis

Aziridines are versatile organic molecules due to their ability to undergo highly region- and stereoselective ring-opening reactions that make them very useful building blocks in organic synthesis. The aziridine moiety is found in a variety of biologically active natural products and, furthermore, synthetic aziridines also exhibit useful biological properties. In this work we describe a new heterogeneous catalytic method for the stereoselective preparation of cis-aziridines from imines and ethyl diazoacetate using montmorillonite K-10 as a catalyst. The reaction proceeds readily at room temperature in short reaction times, providing the products in excellent yields (90%) and exclusive selectivity for the cis diastereomer.



321 Concourse 1:20-2:20 Board 59

Thao Do

Deyang Qu (Faculty Sponsor)

Department of Chemistry, UMass Boston, Boston, MA, 02125

Catalytic Oxidation of Isobutane

Catalytic oxidation has increasingly become a more favorable form of combustion because of its clean combustion process, compact furnaces and reactors, low calorific fuels, and combustion of volatile organic compounds present at low concentration in air streams. Catalytic oxidation of butane has been used in a wide range of portable heating devices such as hair curlers and portable burners. The ignited and maximum temperature for catalytic combustion of stoichiometric isobutene/air mixture on different platinum/ carbon compositions and air's flow rate were optimized in order to extend the range of applications. The measurements were carried out using the technique of blowing isobutene/air mixture through heated platinum/ carbon mixture and monitoring the reaction's temperature. Use of platinum/ carbon mixture results in lower ignition temperature and higher maximum temperature without the requirement of a continuous supply of isobutane compared to combustion catalyst of commercial hair curler: 5% platinum on carbon has an ignition temperature of 700C and maximum temperature of 4150C compared to 1100C/ 2750C for catalyst of commercial hair curler. A platinum on carbon catalyst applied in the internal surface of heating panels using high temperature silicon adhesive is a good candidate for flameless and portable heating devices.



322 Concourse 2:35-3:35 Board 62

Keith Dusoe

Meghna Dilip (Faculty Sponsor)

Department of Chemistry, Worcester State College, Worcester, MA, 01602

Phase Diagrams of Various Salt-Salt Aqueous Biphasic Systems

Ionic liquids are non-volatile, non-flammable solvents, that have been used in green separations and extractions in place of traditional organic solvents. In order to use hydrophilic (water-soluble) ionic liquids in separation systems, ionic liquids are mixed with a kosmotropic salt to cause a two phase system to be formed. The ionic liquid forms the top phase and the kosmotropic salt forms the bottom phase. This type of system has been termed a salt-salt aqueous biphasic system. Since these systems are mostly composed of water, they are "green" separation systems. Here, phase diagrams of ionic liquid - NaCl aqueous biphasic systems are presented. The ionic liquids studied include 1-butyl 3- methyl imidazolium tetrafluoroborate, 1-butyl 3- methyl imidazolium chloride and n-butyl pyridinium chloride.



323 Concourse 3:50-4:50 Board 72

Ada Dyrmishi

Eihab Jaber (Faculty Sponsor)

Department of Chemistry, Worcester State College, Worcester, MA, 01602

Molecular Modeling of Catalytic Ozone Destruction by the Hydroxyl Radical

The hydroxyl radical is known to play a key role in the destruction of ozone in the stratosphere through a cycle which is capable of perpetuating itself. This destructive cycle is carried out in a two step reaction in which the hydroxyl radical catalyzes the creation of diatomic oxygen from ozone and singlet oxygen. In the first step of the cycle, ozone reacts with the hydroxyl radical to form the hydroperoxyl radical and diatomic oxygen. In the second step of the cycle, the hydroperoxyl radical reacts with singlet oxygen to give diatomic oxygen and the returns the hydroxyl radical. The production of the hydroxyl radical in the second step allows the cycle to maintain and catalyzes the destruction of ozone. This cycle is of interest largely because of its contribution in the destruction of stratospheric ozone. In this work, we aim to computationally model this cycle in a way that is reasonable to recreate in an undergraduate physical chemistry laboratory setting, but which correlates well with experimental findings. In addition, the temperature and pressure will be increased to determine how these two factors will affect the rate of the reaction. Computational methods were largely performed at the ab initio level and include Hartree-Fock and Density Functional Theory at various basis sets. Our findings suggest that the enthalpies for this cycle computed at lower levels of theory compare well with both experimental findings as well as those of very high level theory which would not be realistic to use in an undergraduate laboratory setting. Furthermore, our findings suggest that rate of the reaction for the development of this cycle is depend on both temperature and pressure changes.



324 Concourse 2:35-3:35 Board 64

Ryan Fitzgerald

Wei Zhang (Faculty Sponsor)

Department of Chemistry, UMass Boston, Boston, MA, 02125

Green Techniques for Regioselective Synthesis of Drug-Like Molecules

This project focuses on the synthesis of heterocyclic compounds by manganese(III) acetate-promoted cycloaddition of a 1,3-dione and a fluorinated α,β -unsaturated ketone. A subsequent Suzuki reaction removes the fluorine tag and introduces the biaryl functionality. The structure of the final products are characterized by LC-MS and NMR. The green chemistry aspects comes from microwave heating and fluorine separation. Microwave heating has advantages of minimal solvent usage, low energy input, and short reaction time. Fluorine solid-phase extraction (F-SPE) significantly reduces the amount of waste solvents; the fluorine components can be recycled for reuse.



325 Auditorium 1:20-2:20 Board 15

Ryan Gianatassio

Bela Torok (Faculty Sponsor)

Department of Chemistry, UMass Boston, Boston, MA, 02125

Pd/C Catalyzed Reductive Formylation of Indoles and Quinolines

The ability to easily functionalize indoles and quinolines is vital in the pharmaceutical industry due to their inherent drug-like qualities. A two-step, one-pot domino reaction methodology was developed to synthesize a variety of N-formyl indolines and N-formyl tetrahydroquinolines. In the first step, indole/quinoline is reduced to the corresponding dihydro- or tetrahydro-product by a Pd/C catalyzed hydrogen transfer using formic acid as a hydrogenation source. In the second step, the nitrogen is formylated in presence of formic acid to afford the final product in excellent yields. The use of low cost, readily available, recyclable nature of the catalyst and a solvent-free two-step one-pot domino process are the attractive aspects of this methodology.



326 Concourse 3:50-4:50 Board 67

Stephen Glynn

Margaret Kerr (Faculty Sponsor)

Department of Chemistry, Worcester State College, Worcester, MA, 01602

Synthesis of Greener Polymers

In conjunction with an ongoing project which seeks to incorporate substituted coumarin molecules into polymer chains for use as water-soluble photoresists, the focus last semester was on examination of various coumarin synthesis techniques with an emphasis on environmentally benign methods. In recent years, synthesis techniques for coumarin and its derivatives have evolved considerably. This evolution has largely been driven by the recent push toward “greener” methods across the field of chemistry. Experimental aims were to recreate many different techniques, and improve upon them with the goal of optimizing the “greenness” of coumarin synthesis. Research is now taking place on a later step in the project by attaching chloro-coumarin molecules onto a polymer chain. By utilizing a substitution reaction, 7-(3-bromopropoxy)-3-chloro-4-methyl coumarin will be attached on to poly vinyl alcohol, with the goal of the coumarin retaining all of its florescent properties.



327 Concourse 3:50-4:50 Board 70

Bejan Hakimi

Julian Tyson (Faculty Sponsor)

Department of Chemistry, UMass Amherst, Amherst, MA, 01003

A Study of the Structure and Formation of Arsenomolybdate

Arsenomolybdate is used in many colorimetric detection methods for arsenic. These methods are based on what is known as “molybdenum blue” chemistry as, upon its formation and treatment with a reducing agent, it turns blue. There are many methods that involve different catalysts and reagents; however, it is thought that the reaction product is the same in each case. One of the goals of the research was to verify that each of these reactions actually forms the same arsenomolybdate species by characterizing the crystal structure of the product. Another factor that was considered was the fact that these molybdenum blue methods are not entirely effective. Although they are safer than other methods, which, for example, produce arsine gas, molybdenum blue methods are still plagued by a few problems. The two major issues are that the detection limit is not low enough for effective detection of arsenic at the single-digit part per billion values needed to monitor environmental waters, and that it can take as much as long as 20 min for color formation to occur. Other goals of the research have been to improve the detection limit and shorten the amount of time it takes to detect arsenic by adding energy to the reaction system by various means and even extracting the blue product onto an anion-exchange resin. These reaction conditions have included ultrasound, microwave radiation, heat conduction, and stirring. Initial results obtained by UV-visible spectroscopy have shown that heat at 60 oC significantly reduces the amount of time required to form the blue color and also that microwaves increase the absorbance of a given concentration.



328 Concourse 2:35-3:35 Board 63

Nicole Hanna

Eihab Jaber (Faculty Sponsor)

Department of Chemistry, Worcester State College, Worcester, MA, 01602

Metal Chelate Molecular Modeling of N,N'-di-2-picolyl-1,3-Propanediamine Structures

Metal-ligand supramolecular systems have been of interest in the design of molecular pharmaceuticals. One important question in designing some classes of antibiotics is how to design the molecules so that they bond selectively the specified metal of choice, meaning fewer side effects from bonding to other metal ions important to physiological systems. DPA-2 (N,N'-di-2-picolylethylenediamine) and DPA-3 (N,N'-di-2-picolyl-1,3-propanediamine) are polydentate chelating molecules which have an interesting combination of both ring- and linear-integrated nitrogen donors. Under analysis is the energetic difference ligand-metal stability over a range of metals when changing from a 5-membered ring in DPA-2 to 6-membered in DPA-3. Computational efficiency using GAUSSIAN 03W in calculating these thermochemical parameters was compared among traditional low-level molecular mechanics, scaled to ab-initio Hartree-Fock, and density functional theory B3LYP methods. Also, in an attempt to address approximating the electronic characteristics of heavy metal atoms, partitioning the ligand-metal bonds into higher-level theory was tested for more computationally efficient calculations. For higher-level theory, LANL2DZ basis set was used.



329 Concourse 3:50-4:50 Board 73

Kevin Karanja

Eihab Jaber (Faculty Sponsor)

Department of Chemistry, Worcester State College, Worcester, MA, 01602

Hydrogen Bonding Formations via Cyanuric Acid/Melamine Complexes

The melamine and cyanuric acid are known to form hydrogen bonding agglomerates stable in water. The cyclic hexamer in Figure 2 is one of the examples of such a supramolecular system. These systems have played an important role in the design of self-assembling aggregates based upon molecular recognition. Cooperative interactions are thought to play a key role in these and other self-assembling aggregates. In this work, we evaluate the enthalpic contribution to the stabilization of these self-assembling aggregates. The calculations were performed using the molecular orbital methods at the ab initio (Hartree-Fock and Density Functional Theory) levels using the GAUSSIAN 03. The interaction enthalpy for melamine/cyanuric acid dimer was found to be 14.93 kcal/mol at DFT B3LYP/D95* level, while enthalpies for individual NH...O, and NH...N bonds are 1.92 and 4.86 kcal/mol respectively. The stabilization enthalpy in the hexamer is 96.36 kcal/mol at DFT B3LYP/D95* level.



330 Concourse 3:50-4:50 Board 74

Kenneth Kirangi

Eihab Jaber (Faculty Sponsor)

Department of Chemistry, Worcester State College, Worcester, MA, 01602

A Computational Study on the Formation of Carbon Monoxide Polymeric Chains

Kenneth Kirangi, Christina Lovell & Eihab Jaber Carbon monoxide is an odorless, colorless and toxic gas that is found in the environment. Carbon monoxide molecules have been known to form polymeric like-chains that consist of several molecules in length, with relative stabilities often referred to as polyketones. Understanding the stability of these molecules can help predict how easily these polymeric forms of carbon monoxide can exist in the atmosphere and as a result, this may provide further information about both the life span and the toxicity of different conformations of these polymeric like-chains of carbon monoxide. In this study, different lengths of the polymeric forms of carbon monoxide ranging in size up to a nanometer are modeled in order to understand the effect length and structure (helical vs straight chain) has on stability, and also the effect the carbon monoxide monomer has on polarity. The electronic structures, geometries and frequencies of the carbon monoxide polymeric chains have been calculated with the use of ab-initio and density functional theories. The stabilities of these molecules have been predicted by calculating their respective energies and monitoring their energy differences as a function of polyketone length. This work eluded to the formation of polymeric like-chains of four carbon monoxide molecules, with a respective energy of 284508.248 kcal/mol, using density functional theory optimizations and energy calculations, at the B3LYP/6-311+G (d,p) basis set. Our results, have indicated that this level and basis set of theory are not sufficient to predict correct energy values and thus, our calculations are performed at the Møller-Plesset Perturbation Theory (MP4) level with a basis sets of 6-311+G (2df,2p) which have shown promising results as a function of the length of these carbon monoxide molecules.



331 Concourse 1:20-2:20 Board 60

Ryan Knihtila

Eihab Jaber (Faculty Sponsor)

Department of Chemistry, Worcester State College, Worcester, MA, 01602

Relative Stability of Trigonal Bipyramidal Phosphorous via Electronegativity Selection

Understanding binding affinity and binding stoichiometry between molecules allows for a unique look into ligand binding dynamics by way of selectivity of the molecules. Ligand binding interactions are frequently coupled to conformational changes in the molecules via electronegativity selection. Computational chemistry allows for a useful method to explore these types of ligand binding interactions and their respective affinities. For instance, in a five-coordinate transition metal complex the principal feature is to measure the effective electron-pair repulsion via measuring the ligand electronegativity selection. Typically less electronegative atoms will bind to a trigonal bipyramidal phosphorous atom via the equatorial position over the axial position during the formation of the ligand binding interaction. This allows for the molecule to be more stable by allowing it to be farther away from the central atom, which allows for a more energetic favorable ligand binding interaction. Thus, this work explores these types of ligand binding interactions through the study of PF_4Cl molecule by removing the equatorial fluorine atoms and replacing them with less electronegative chlorine atoms upon structural changes as a function of the energy of the molecules. The polarizability of these molecules were also explored as a function of the hybrid methods of density functional theory (DFT). The structures of these molecules were optimized and energy calculations were conducted using DFT at both hybrid methods, BPV86 & B3LYP with basis sets up to 6-311G+(2df) basis sets as well as the Hartree Fock (HF) at the same basis sets.



332 Concourse 2:35-3:35 Board 61

April Lachance

Jason Evans (Faculty Sponsor)

Department of Chemistry, UMass Boston, Boston, MA, 02125

An LC-MS Method for the Quantification of Triglycerides (TAGs) using Metabolically-derived ^{13}C TAGs as Internal Standards

A reverse-phase HPLC-MS method has been developed for the precise quantification of triglycerides (TAGs) in complex mixtures. A complex mixture of ^{13}C TAGs is obtained via metabolic labeling of yeast. The labeled TAGs are extracted and used as internal standards. Standard curves have been produced for several TAG species. Using the standard curves, TAG species can be quantified in various extracts of vegetable oils, animal fats, and cultured cells. Relative molar sensitivities (RMS) of these TAG species will be measured via direct infusion experiments, and rules will be developed that can be used to predict RMS on the basis of fatty acid composition and position. This method will be used in future experiments to measure the turnover rates of individual TAG species in various cell types.



333 Concourse 1:20-2:20 Board 69

Ainsley McCall

Joan Brenner (Faculty Sponsor)

Department of Chemistry, Bunker Hill Community College, Boston, MA,
02129

Chromatographic Methods to Separate Addition and Elimination Products

A classic synthesis of phenyl-propynoic acid, $C_9H_6O_2$, is performed in a microscale. The acid is synthesized from dibromodihydrocinnamic acid. The alkynyl bond is formed via double elimination of bromine using potassium hydroxide and heat. The resulting product mixture was separated initially by thin layer chromatography to show the progress of the experiment, monitoring the progress of the alkynyl product. Finally, the alkyne was extracted from the product mixture and confirmed by IR spectroscopy. In this process, conditions and procedure to reproduce this experiment more efficiently in the laboratory were explored and identified to benefit future students. Moreover, various forms of chromatography are explored, as well as their advantages both in confirmation and separation of product. This procedure could be introduced as an undergraduate experiment. This experiment introduces the student to elimination reactions. Additionally, it shows how alkenes can be prepared from a compound often synthesized by students to show alkene addition reactions.



334 Concourse 1:20-2:20 Board 61

Patricia McNamara

Eihab Jaber (Faculty Sponsor)

Department of Chemistry, Worcester State College, Worcester, MA, 01602

Ab Initio Study of Hydrogen-bond Energies of Hydrogen(bifluoride)

Since hydrogen bonding is an intermolecular force, it can be difficult to determine accurately where it begins and ends between neighboring molecules. Examining molecular interactions by means of molecular modeling helps to predict molecular energies that are many times not yet experimentally available. The hydrogen bonding interaction of hydrogen-bifluoride (FHF^-) are of particular interest due to their exceptional intermolecular strength. The hydrogen bonding interaction of this, and other hydrogen-bihalide ions are especially strong since the ion consists of a hydrogen atom connected to strong electron withdrawing groups attached to either sides of the hydrogen atom. Thus, the relative strength of the bond is increased by the location of the hydrogen atom: symmetrically located between the two halides. Our computational methods consisted of Hartree-Fock (HF) and Density Functional Theory (DFT) with B3LYP functionals in conjunction with a basis sets as high as 6-311G (3df,3p). Our finding suggest that upon changes to the basis sets in terms of additions to both the diffuse functions as well as polarized functions leads interesting hydrogen bonding formations between neighboring molecules.



335 Concourse 1:20-2:20 Board 66

Alexa Meehan

Deyang Qu (Faculty Sponsor)

Department of Chemistry, UMass Boston, Boston, MA, 02125

Critical Selection of the Porous Separator for the Optimal Charge and Discharge of Energy in Supercapacitors

Electrochemical double-layer capacitors, commonly known as supercapacitors, offer a means of time-dependent energy output. Recent new applications have shown an increased need for more effective supercapacitors. For example, supercapacitors can be utilized as complementary power sources in both electric and hybrid vehicles. In contrast to typical batteries, which rely on chemical reactions as the mode of energy storage, supercapacitors store energy through the separation of charge that occurs at the electrode/electrolyte interface referred to as the electrochemical double layer. This physical mode of energy storage allows for the potentially limitless recharging of the device, subject to the sustained structural integrity of the cell components. The performance characteristics of a supercapacitor are determined primarily by the properties of those cell components: the electrode material, electrolyte and porous separator. Supercapacitors are so named primarily for their high energy density as compared to traditional capacitors. The higher energy density is possible through the use of high surface area materials as the electrodes. Activated carbon possesses an exceptionally high specific surface area, and when used as the electrode material, can give rise to high specific capacitances. The choice of electrolyte also affects the performance of the supercapacitor. Aqueous supercapacitors are limited to a 1 V potential, the decomposition potential of water, but potentials up to 3 V are possible with non-aqueous electrolytic solutions. The choice of separator, which is of interest here, impacts the effectiveness of the charge separation between the two electrodes; a factor that is critical to the potential charge and discharge rate of a cell. Studies were performed using activated carbon-based electrodes and a tetraethylammonium tetrafluoroborate (TEATFB)/acetonitrile electrolyte. Preliminary data suggests that characteristics of the separator, such as pore size, porosity and thickness, may affect the time-based availability of energy within a cell.



336 Concourse 3:50-4:50 Board 65

Greici Mercedes

Sivappa Rasapalli (Faculty Sponsor)

Department of Chemistry, UMass Dartmouth, N. Dartmouth, MA, 02747-2300

Development of Novel Hetero Diels-Alder reactions for the Total Synthesis of Natural Products

Studies towards the development of novel variant of a powerful Hetero Diels-Alder reaction (Povarov reaction) and application of the same to the total of synthesis of biologically, and medicinally important complex natural products. These natural products and analogues will be screened for topoisomerase inhibition in the anti-cancer research program.



337 Concourse 1:20-2:20 Board 63

Margaret Nguyen

Eihab Jaber (Faculty Sponsor)

Department of Chemistry, Worcester State College, Worcester, MA, 01602

Thermodynamics of the Bifurcated Hydrogen Bonding Formations of Guanine-Dimers and Ionic Effects

Telomeres are structures at the ends of chromosomes (endcaps), which are guanine-rich sequences that protect the ends from destruction. These sequences contain domains of G-tetramers in which, G-G pairs are held together by intermolecular hydrogen bonding. It is believed that the hydrogen bonding of these G-G pairs occur by bifurcated interactions in the absence of monovalent cations. Cooperative interactions are thought to play a key role in the stabilization of these G-tetramers. In this work, the energetic contribution to the stabilization of these G-G pairs by bifurcated hydrogen bonding was evaluated. The results suggest a new model, which includes the cooperative interactions of these G-tetramers. The calculations were performed using the molecular orbital methods at the ab initio levels. The dimer structures energies were calculated at the HF/6-311G++(d,p), the DFT/6-311G++(d,p), and MP2/6-311G++(d,p) levels/basis sets. The DFT calculations produced energies values for individual NH...O, and NH...N bonds at 5.0, 2.0 kcal/mol respectively for the G-tetramers. Furthermore, our findings indicate that the guanine dimers hydrogen bonding formations are strongly influenced by the addition of cations as a function of cation distance to the guanine dimers. Our preliminary results indicate that the bifurcated hydrogen bonding formations play a pivotal role in the stabilization of these G-tetramers upon addition of cation interactions.



338 Concourse 1:20-2:20 Board 57

Henry Rogalin

Adan Colon-Carmona (Faculty Sponsor)

Department of Biology, UMass Boston, Boston, MA, 02125

Generation of Diverse Protein Variants for Use in a Pollution Biosensor

Polycyclic aromatic hydrocarbons (PAH) are toxic carcinogenic compounds that enter the environment mainly from the burning of fossil fuels. This project is designing a pollution biosensor that will detect PAHs in the environment. The biosensor is based on the aryl hydrocarbon receptor (AhR), a protein found in vertebrates. The AhR detects PAHs and subsequently induces transcription of target genes. A core aspect of this biosensor research is to optimize the AhR by creating a large number of gene variants. To create the diverse AhR allele library, the Staggered Extension Process (StEP), a PCR-mediated DNA recombination technique incorporates AhR alleles from many organisms and produces chimeric DNA sequences. These will yield AhR proteins with varying affinities for PAHs, which will be selected for fitness. Additionally, the Allele Finder program, created for this project, reads the parental and chimeric DNA sequences and helps elucidate the recombination points. This information is being used to adjust the StEP protocol parameters to maximize the diversity of the AhR allele library.



339 Concourse 3:50-4:50 Board 66

Andrew Smith

Julian Tyson (Faculty Sponsor)

Department of Chemistry, UMass Amherst, Amherst, MA, 01003

Investigation of the Kinetics and Thermodynamics of the Gutzeit Reaction for the Determination of Arsenic

Arsenic's toxicity and widespread environmental distribution have created a demand for reliable, cheap, accurate, on-site analysis of arsenic-contaminated waters, in order to assess the health risks in rural locations in developing countries. In response to this demand, many simple and rapid methods for detecting arsenic in water are now available, including kits based on the Gutzeit reaction. Arsenic in acid solution reacts with powdered zinc to form arsine, which is swept into the headspace of the reaction vessel with the help of the co-evolved hydrogen and reacts with the mercuric bromide in the test strip in the vessel lid to form a yellow-brown product. The basic reaction has been known for well over 100 years, but the thermodynamics and kinetics, and even the identify of the colored reaction product, are not well characterized. As part of our on-going efforts to improve the performance of these kits, we have measured the rate of evolution of arsine, with ICP-OES, and found that evolution of arsine continues beyond the time frame set by the manufacturer for the conclusion of the test. We conclude that running the test for longer times will produce greater sensitivity. Moreover, changing the reaction conditions increases the sensitivity. Heating affects the rate of reaction, shifting the greatest evolution of arsine gas into the first five minutes. The reliability of the test is also improved by analysis of the digital images, produced by a flat-bed scanner, instead of naked-eye comparison of the color on the test strip with those preprinted by the manufacturer.



340 Concourse 1:20-2:20 Board 68

Bradford Spencer

Meghna Dilip (Faculty Sponsor)

Department of Chemistry, Worcester State College, Worcester, MA, 01602

How Environmentally Friendly are Green Cleaners?

Several household cleaners claiming to be green have hit the markets recently. This study investigates the validity of these claims. Chemical tests at least three different household all-purpose cleaners will be conducted. Tests performed will include Chemical Oxygen Demand (COD), pH and a spectrometric test for phosphate.



341 Concourse 10:45-11:45 Board 58
Roodolph St Pierre
Marietta Schwartz (Faculty Sponsor)
Department of Chemistry, UMass Boston, Boston, MA, 02125

Purification of Histone Deacetylase 8

Histone deacetylase (HDAC) proteins are key chromatin modifying enzymes that have been implicated in many forms of cancer and neurodegenerative diseases. The HDAC family of proteins works in concert with Histone Acetyl Transferases (HATs) to deposit and remove acetyl groups' histone tails, respectively. These modifications tightly regulate the transcriptional state of chromatin, where acetylation promotes transcriptional activation, and deacetylation promotes transcriptional repression. This effect on transcriptional programming has a direct impact on a wide variety of cellular processes; thus aberrant expression and/or behavior of these enzymes can give rise to multiple disease phenotypes. Currently, HDAC inhibitors (HDACi) are emerging as a promising new avenue for chemotherapeutics. It is believed that all HDACi bind within the catalytic sites of HDACs. Due to the highly homologous nature of the catalytic site across the HDAC family. This in turn significantly limits the selectivity of these compounds to target a single HDAC isoform. This lack of selectivity can lead to off-target side effects that can severely limit the efficacy of the compound in living systems. In our work we are specifically focused on a single HDAC family member, HDAC8. Members of our lab have identified a novel class of small molecule inhibitors that we believe may bind outside of the HDAC8 catalytic site. Our specific aim is to evaluate the binding mode of these compounds using X-ray crystallography. However, the work shown here will outline the production and purification methods that we have developed to produce milligram quantities of pure HDAC8 protein, in preparation for these crystallographic studies.



342 Concourse 10:45-11:45 Board 68

Matthew Stevens

James Chambers (Faculty Sponsor)

Department of Chemistry, UMass Amherst, Amherst, MA, 01003

Synthesis of Novel Cyanine Dye Systems for Ultraresolution Biological Imaging

Research in molecular and structural biology demands precise methods of visualizing macromolecules. Scientists currently utilize a large variety of contrast-enhancing probes in order to selectively visualize targets within or on the surface a cell. Many of these probes are small molecule fluorophores which can be attached by a variety of methods to the proteins of interest and have an extensive range of absorption/emission wavelengths. One class of molecule used in such labeling is the cyanine dye family, specifically Cy3 and Cy5. In the current work, novel Cy3/Cy5 heterodimers were synthesized containing a polyfunctional linker utilizing "click chemistry." This dye has recently been incorporated into our novel nanoprobe labeling system and is being employed to target endogenous neurotransmitter receptors in unperturbed neural tissue. The utilization of the nanoprobe system in conjunction with the cyanine dyes aims to revolutionize the way that proteins are visualized and tracked.



343 Concourse 10:45-11:45 Board 57

Jing Wang

Michelle Foster (Faculty Sponsor)

Department of Chemistry, UMass Boston, Boston, MA, 02125

Spectroscopic Investigation of Activated Carbon

Hydrogen is an environmentally-friendly energy source. When hydrogen is burned in air the only product is water as opposed to burning gasoline which produces compounds such as carbon dioxide, carbon monoxide, nitrogen dioxide, and other toxic compounds and potential carcinogens. However, the difficulties using hydrogen as a vehicle fuel include the storage and transport of this very light, very flammable, gas-phase molecule. One mechanism that is being studied to effectively and safely store hydrogen while achieving a high volumetric energy density is the use of activated carbon as a storage medium. My research project uses Diffuse Reflectance Infrared Fourier Transform Spectroscopy (DRIFTS) to examine the passivated surface of a variety of activated carbons samples. Samples are prepared using a Digital Temperature/Gas Control Furnace whose purpose is to manipulate the surface of activated carbon using deactivation and activation processes. A dilution method will be developed to determine the optimum concentration of activated carbon in KBr. Together this series of experiments will allow us to qualitatively and quantitatively understand the functional groups present on the carbon surface and to associate various surface states with the activation process. Once the external surface of activated carbon is understood we will investigate the optimum condition for the hydrogen storage.



344 Concourse 1:20-2:20 Board 65

Jason Welsh

Eihab Jaber (Faculty Sponsor)

Department of Chemistry, Worcester State College, Worcester, MA, 01602

Stratospheric Ozone Destruction via Bromine Nitrate - A Molecular Modeling Study

Deteriorating environmental conditions and controversial subjects such as ozone depletion and global warming have received increasing amounts of acclaim in both the scientific and political worlds. Therefore, it is imperative to implement these topics into an undergraduate curriculum to allow our future scientists a well-rounded view of these issues. Investigations into a means to combine the theoretical power of computational chemistry with real world environmental problems into an undergraduate laboratory activity are the main focus of this work. Computational chemistry investigations have provided an excellent means to recover experimental findings in a truly green process, both efficiently and cost effectively. Hence, with the use of computational methods we are able to provide a unique undergraduate laboratory activity for the study of a complex stratospheric chemistry reaction. The compound of interest for this study is Bromine Nitrate (BrONO_2), which researchers believe to undergo key reactions with ozone during the dark hours of the night. The reactivity of BrONO_2 without the need for sunlight allows it to undergo a unique reaction pathway for ozone destruction. In order to investigate this reaction, our calculations were conducted at the density functional theory (DFT) level with a functional of B3LYP and basis sets of 6-311+G(2df), in order to calculate the thermodynamic properties of BrONO_2 upon reaction with atomic Br. Furthermore, Hartree-Fock (HF) calculations were conducted using the 6-311+G(2df) basis set in order compare DFT calculations. Our findings suggest that the DFT calculations provide a better alternative for calculating reaction enthalpies, then the HF, which have known limits for calculating bond dissociation energies associated with these types of reactions.



345 Concourse 10:45-11:45 Board 59

David York

Wei Zhang (Faculty Sponsor)

Department of Chemistry, UMass Boston, Boston, MA, 02125

Selective Fluorous Suzuki Coupling

Selective reaction of different functional groups on the same molecule is an important topic in organic synthesis. In Suzuki coupling reaction, it is known that a triflate group and a bromo group have different reactivity. In this poster, we will show that as the triflate alternative, the perfluorooctylsulfonyl group is less reactive than a bromo group for the Suzuki reaction, which allows double Suzuki reactions occurred on the same molecule in a selective fashion. Using the fluorous group also simplifies product purification by performing F-SPE, which significantly reduces the amount of solvent and makes it a greener synthetic process.



Civil Engineering

346 Concourse 3:50-4:50 Board 64

Willems Leveille

Sukalyan Sengupta (Faculty Sponsor)

Department of Civil Engineering, UMass Dartmouth, N. Dartmouth, MA,
02747-2300

Novel Use of Ion Exchange Nanofibers (IENs) for Trouble-Free Methane Generation from Biomass and Organic Waste

Anaerobic treatment of biomass or other high-strength organic matter is an ideal process to generate energy because it (i) can accept a wide variety of feedstock materials, (ii) is very efficient in terms of energy conversion, and (iii) can provide a useful byproduct rich in Nitrogen & Phosphorus that can act as a soil amendment/fertilizer. However, concerns of process instability of an anaerobic reactor - especially to shock loadings of organics or toxic metals - have limited its application. Our recent research accomplishments in development of Ion Exchange Nanofibers (IENs) can play a transformational role in overcoming this obstacle. Successful implementation of our proposed technology will provide stable operation of the anaerobic reactor under variable stress conditions. This will in turn allow development of turnkey anaerobic systems that can be cost-effectively produced and operated with minimal operator monitoring and control.



Communication

347 Auditorium 3:50-4:50 Board 1

Jennifer Kuehne

Nancy Willets (Faculty Sponsor)

Department of Communication, Cape Cod Community College, West
Barnstable, MA, 02668

Self-Talk and Adolescents

Self-talk, the internal conversation concerning thoughts, ideas, and feelings can facilitate or debilitate a person's actions depending on the messages that they transmit. Distorted thoughts can direct adolescents into a range of mental problems like depression, anxiety, and eating disorders. By researching cognitive behavioral therapy, a form of psychological therapy that focuses on correcting negative and/or harmful self-talk, along with studies done in the communication field, I was able to make connections between maladaptive adolescent self-esteem and harmful internal communication skills. Further exploration led me to discover therapeutic techniques, which directly related to the improvement of adolescent communication skills, positive self-esteem, and resulting in an overall improvement in their quality of life. Teaching adolescents how to reframe their harmful self-talk, with healthier communication skills and attitudes, cognitive restructuring, changes the way that adolescents talk to themselves, about themselves, allowing them to stop the cycle of negative thoughts.



348 Auditorium 3:50-4:50 Board 2

Amanda Lefebvre

Jennifer Dowling (Faculty Sponsor)

Department of Communication, Framingham State College, Framingham, MA, 01702

Putting Your Best Face Forward: The Selection and Influence of Celebrity Endorsements in Print Advertisements

Celebrities hold a certain level of prestige and status in our culture that inundates the imagination of the public. This phenomenon is advantageous in the eyes of corporate America, for attaching celebrity presence to the products that companies manufacture has historically been an effective technique for marketing brands, augmenting audience awareness, and increasing sales. Yet, recently, many experts argue that consumers are becoming too jaded by celebrity endorsements; they hinder a company's credibility, deplete their attractiveness, and downgrade the target audience's perception of the product. The current study takes two methodological approaches to discovering the "health" of testimonial advertising in the current day. First, a quantitative research approach will reveal the kinds of products that are monopolizing mainstream magazines, the appeal of celebrity spokespersons, and whether or not celebrity endorsed products have a positive influence on the college-aged population. Second, a twenty-five item survey incorporating both nominal and five point semantic differential scales will determine whether or not the celebrities in ads are relevant to the products they endorse, whether or not celebrities are as credible in sponsoring products as they were previously thought, and whether or not we still consider celebrities trustworthy product ambassadors—in other words, should we continue to provide them the agency to represent products and persuade consumers to purchase them?



349 Auditorium 3:50-4:50 Board 3

Jeremy Schaub

Nancy Willets (Faculty Sponsor)

Department of Communication, Cape Cod Community College, West
Barnstable, MA, 02668

Influences of Culture on Intimacy

The rules and manifestations of intimacy between individuals are profoundly influenced by the traditions and morals of each society. Through research, I detailed cultural norms of intimacy found in many Arab cultures from around the world, with a concentration on Iran. Intimacy can be broken down into three main dimensions; the physical aspects of intimacy, the sharing of emotions, and discussion of intellectual ideas. Grouping and organizing these Arab traditions in this way, allows them to be easily compared and contrasted with U.S. traditional views of intimacy and discover where cultural misconceptions are born. In this way, I was able to present the Arab culture's unique expressions of intimacy so they could be easily understood and appreciated by those outside their culture. Empowered with this new information, individuals can push past the negative stereotypical perspectives normally found when confronted by unfamiliar cultural traditions.



Communication Disorders

350 Auditorium 3:50-4:50 Board 10

Danielle Ducharme

Shelley Velleman (Faculty Sponsor)

Department of Communication Disorders, UMass Amherst, Amherst, MA, 01003

Improving Social Communication and Interaction Between Users and Non-Users of Augmentative and Alternative Communication Devices

The purpose of this project was to improve the social communication and interaction between users and non-users of augmentative and alternative communication (AAC) devices. Four non-users of AAC were trained to be more effective communication partners for users of AAC. A survey was given at the beginning of the training program to determine the level of knowledge non-users of AAC have about AAC devices. This same survey was given at the end of the four training sessions to determine the level knowledge advancement that has occurred for the four non-users of AAC. After four training sessions both groups began communicating with each other for four sessions. The goal of the project was that there will be a noticeable increase in social communication and interaction between the two aforementioned groups.



351 Auditorium 3:50-4:50 Board 9

Christine Marino

Karen Helfer (Faculty Sponsor)

Department of Communication Disorder, UMass Amherst, Amherst, MA,
01003

How Aging Affects the Ability to Ignore Speech

The goal of this experiment was to determine if ability to ignore speech decreases with age. The task was for the subjects, ten older and ten younger, to listen to two interleaved sentences. From these ten words, they were to repeat back every other word beginning with the first word and ignore all words in between. There were ten blocks of trials with thirty sentences in each. The following factors were manipulated: different talkers within a trial vs. same talkers, spatial separation between to-be-repeated and to-be-ignored words, and words composing a sentence or presented in random word order. After the ten words were presented, the subject was to repeat the target words from the fifty possible word choices displayed on a computer screen. Results obtained thus far suggest that speech perception and the ability to tune out distractions in conversation decreases with age.



Community or Public Service

352 Auditorium 1:20-2:20 Board 23

Tim Austin

Meghan Callaghan (Faculty Sponsor)

Department of Community or Public Service, Bunker Hill Community College,
Boston, MA, 02129

Leadership among Boston Young Teens

As a volunteer at Mytown Inc. in Boston, Massachusetts, I see young teens exceeding when given ownership over projects, thus becoming leaders amongst their peer groups. Without much adult supervision, the youth at Mytown accomplish many tasks that require multiple responsibilities. Teens at Mytown easily accomplish their mission without too much struggle showing how much they have matured at a young age. Another example is in a short amount of time; they were able to plan and manage a party and a presentation for an outside group. In doing this they were about to make the new people feel welcome. In order to complete their tasks, the young teens got into small groups and made a list of things to do and followed it precisely. As a result, the party was perfect and everyone had a good time. As a volunteer observing the young teens, it is amazing to see how they are able to balance academics, social, and work life without much difficulties. It shows how responsible they can be. When I observe them the youth in their weekly meetings, I see them discussing prevalent social issues within neighborhoods. I see that they take their time to research and dig more into the issues after discussing it on a preliminary basis. They formulate ideas, take notes, learn about solutions. Mytown Inc. serves the community well by transforming young teens into responsible active community members.



353 Room 101 3:50-4:50 Board 44

Jialing Guo

Sharon Schaff (Faculty Sponsor)

Department of Internship, Bunker Hill Community College, Boston, MA,
02129

What Makes A Great Visitor Experience at the New England Aquarium?

The New England Aquarium is a premier Boston institution that serves a variety of scientific, cultural, and educational capacities. I performed 300 hours of internship service at the Aquarium across the Fall and Spring semesters studying what it takes to manage a great visitor experience. Museums rely heavily on volunteers and interns to support their mission of serving the community and my experience was part of this. Through my service, I developed a fine-tuning of my classroom hospitality knowledge and really grew in my presentation and communications skills. On an average day, people from over 50 nationalities visit the museum. My studies demonstrate that friendly greeters, signage, and frequent short-programs make for a repeat visitor and participant in the larger NEAq community.



354 Auditorium 1:20-2:20 Board 36

Jocelyn Lilly

Valerie King (Faculty Sponsor)

Department of Nursing, UMass Lowell, Lowell, MA, 01854

Dental Health and Awareness for Children in Ghana

Ten University of Massachusetts Lowell students participated in a twenty-three day service experience in January 2010. These Nursing Students Without Borders set a goal to deliver supplies and knowledge to strengthen healthcare in African communities. After a comprehensive community assessment, we determined nursing-related areas of concern, including HIV/AIDS, hypertension, and poor dental care. Dental hygiene is a major concern in Hohoe, one of many poverty-stricken villages we visited in Ghana. Healthy dentition is imperative for promoting overall health as well as preventing infection and complications of existing illnesses. We found it crucial to initiate relevant teaching to school-age children in this community's orphanage. Deficient self-care and lack of supplies is evidenced by self-report from the children and other local healthcare providers. A teaching plan was developed, incorporating age-appropriate teaching strategies, after researching resources from the American Dental Association and other sources. We spoke enthusiastically of the importance of dental care as related to eating and communicating and about strategies to keeping teeth as healthy as possible. The children at Christian Children's Orphanage actively participated in the educational presentation. The program consisted of a pre-test, educational information, demonstrations, and a post-test, which allowed us to evaluate teaching and provided insight to meet future educational needs. Our program addressed the lack of dental care in this African community. Post test analysis revealed that the children's knowledge level pertaining to dental health increased after our intervention. To conclude, we distributed coloring materials, a toothbrush and toothpaste for each child, hopeful that this may improve compliance to a dental regimen.



355 Auditorium 1:20-2:20 Board 24

Jessica Previlon

Meghan Callaghan (Faculty Sponsor)

Department of Community or Public Service, Bunker Hill Community College,
Boston, MA, 02129

Finding Joy as Volunteer

Eleanor Roosevelt said “You gain strength and confidence by every experience in which you really stop to look fear in the face...you must do the thing you cannot do.” I was afraid to integrate myself in the US society as an immigrant because I did not know anything about US culture or functionality. Through Serve Boston, a service internship program at Bunker Hill Community College, I have learned how to become involve in my new community I am now less afraid to participate in any activities where I have to talk and interact with others. Volunteering has allowed me to perfect my English speaking abilities. In addition, while volunteering I am helping others, but also learning more about myself. As a volunteer mentor through the Malden YWCA, I mentor girls at the Ferry Way School and find the experience very enjoyable. I show the seventh grade girls how fun math can be. I have found that these girls need to understand how knowledge in math can help later in life. Additionally I have learned how valuable after-school and mentoring programs are in society. These programs help to decrease the amount of teen drug usage and crime activity. Overall, community service and volunteerism greatly impacts the US society. Being a volunteer, not only changes the life of the volunteer, but also benefits the people in the community



Computer Science

356 Concourse 3:50-4:50 Board 62

Daniel Amirault

Allen Hanson (Faculty Sponsor)

Department of Computer Science, UMass Amherst, Amherst, MA, 01003

A System of Visual Detection and Response to Physical Chess Playing

Computers have been competing with human chess players for years. However, they have drawn players out of their normal chess-playing environment. A player must enter their moves into a computer program. This is vastly different from how most people normally play chess: having a physical board with pieces to look at and interact with. This system allows players to play chess as they normally would, physically picking up pieces and moving them where they want. A camera is placed over the board and a computer program visually detects the board and the pieces on it. The camera setup does not have to be precise; the program automatically finds the correct orientation, scale, and location of the chessboard in its image. Wide-ranging styles of board and piece combinations are automatically detected. The system tracks players moves, responding with moves of its own, until a game is finished. Computer vision techniques were explored to best achieve this system. Hough transformations are used to detect parallel lines on the board, to which the image is oriented to. Exhaustive search and template matching is used to find the scale and location of the board. Once the board location is found, the squares on the board can be extrapolated and individual squares are examined for pieces. Piece locations are stored and new board positions are compared to previous positions to find where pieces have been moved to. These methods can be extracted to other game playing systems involving games with similar board designs, such as Reversi, Go, and checkers.



357 Auditorium 2:35-3:35 Board 32

Mario Barrenechea

Lori Clarke (Faculty Sponsor)

Department of Computer Science, UMass Amherst, Amherst, MA, 01003

Little-JIL: Defining and Analyzing Complex Processes in Diverse Application Domains

At the Laboratory for Advanced Software Engineering Research (LASER), we are studying the applicability of software engineering methodologies and tools to help identify problems within complex, human-intensive processes, such as transfusing blood to a patient, mediating an arbitration case for two conflicting parties, and election voting. In this project, we use a process definition language called Little-JIL to model the activities, performing agents (human and nonhuman), and the resources that are involved in order to precisely understand and analyze these processes. The Little JIL environment consists of the Little-JIL process definition language along with a set of formal verification and analysis tools (e.g., PROPEL, FLAVERS) developed in the lab that together define, determine potential defects, and improve the efficiency of a process definition. In using these tools and methodologies, we hope to address some of the ongoing problems with these critical processes to resolve disputes, electoral fraud, and save human lives.



358 Auditorium 2:35-3:35 Board 31

Maximilian Choly

Wei Ding (Faculty Sponsor)

Department of Computer Science, UMass Boston, Boston, MA, 02125

Unsupervised Word Sense Disambiguation Using Dependency Knowledge

Word sense disambiguation is the process of determining which sense of a word is used in a given context. WSD is a long-standing problem in Computational Linguistics, and is useful in many real-world applications including machine translation and information retrieval. However, existing methods either are brittle and focus on a specific word domain, or provide only mediocre performance in real-world settings. We have developed a fully unsupervised word sense disambiguation method that requires only a machine-readable dictionary, a knowledge base automatically generated through web search results, and unannotated text as input. Such an automatic approach overcomes the problem of brittleness shown in many existing methods and makes broad-coverage WSD feasible in practice. We evaluated our approach using SemEval 2007 Task 7 (Coarse-grained English All-words Task), and our system outperformed the best unsupervised system participating in SemEval 2007 and achieved performance approaching the top-performing supervised systems.



Criminology

359 Concourse 10:45-11:45 Board 64

Victoria Robinson

Joan Brenner (Faculty Sponsor)

Department of Criminology, Bunker Hill Community College, Boston, MA,
02129

Book Banning and the Decision on What Books Can be Circulated in Boston

Book banning has been delegated by the law, enforced by society, and a form of censorship in literature. This study was conducted to determine why certain books were banned from Boston and other books are allowed to circulate. The research was found on the internet, through websites, books from the library, newspapers, and magazines. Websites on the internet were bhcc.com website (College Library website), yahoo.com, google.com and others. This research is a way to resolve, understand the history of book banding, the laws perspective, and what decided which books should be banned from the public in Boston. This project will encourage future scholars to continue research on book banning and discover ways to permit great literature to be revealed by the people's choice.



360 Concourse 10:45-11:45 Board 62

Richard Rossi

Melissa Morabito (Faculty Sponsor)

Department of Criminology, UMass Boston, Boston, MA, 02125

The USA PATRIOT Act: Its Evolution and Societal Impact

The introduction of the Uniting and Strengthening America by Providing Appropriate Tools Required to Intercept and Obstruct Terrorism Act of 2001, more commonly known as the USA Patriot Act, ushered in a new era of law enforcement authority which further blurred the line between investigative technique and invasion of privacy. This research examines the modern utilization of the Patriot Act and discusses its impact on society and policing, with particular emphasis on the structured evolution of the legislature and entrance into the Terrorism Era of policing. Evaluations are later made of the merits and criticisms of the Patriot Act as discussed by the US Department of Justice, the American Civil Liberties Union and other organizations. Ultimately, the author offers a road map as to what role the Patriot Act should play in society.



Dance

361 Concourse 1:20-2:20 Board 64

Sadie Noel

Alicia Boucher

Teresa Fitts (Faculty Sponsor)

Department of Kinesiology, Westfield State College, Westfield, MA, 01086

“Everybody Zumba”: A Service-Learning Project

“Everybody Zumba” was developed to provide an opportunity for a college community to engage in physical activity by participating in a Zumba Dance. The goal of this service-learning project was to increase the physical and social health of the participants while helping the community with their donation of canned goods for a local food pantry or used sneakers for Special Olympics. Houston (2005) found that dancing helped to improve balance and provided a good social environment. The participants showed that they were proud to be part of the program and their self esteem had improved. Wheeler (1996) found that dance classes in college settings helped build the community and social cohesion. “Everybody Zumba” was a service learning advocacy project completed in conjunction with an honors class centered on multi-disciplinary approaches to physical inactivity. An open Zumba Dance class was held in an attempt to introduce the college community to this fun, socially-engaging physical activity. Attendance records and observational data relating to participant attitudes and enthusiasm were recorded. Reflections on the process of developing “Everybody Zumba” as a means of promoting physical activity were also considered. Dance has been found to improve social health, balance, and coordination. Providing a fun, social environment may entice students to participate in other dance classes, thus exposing them to enjoyable physical activity.



Economics

362 Room 101 10:45-11:45 Board 51

Christina Anderson

Patricia Morrow (Faculty Sponsor)

Department of Management, Northern Essex Community College, Haverhill, MA, 01830

Marketing a Restaurant in a Tough Economy

The current economy has forced consumers to change their spending habits and has had a negative effect on the restaurant industry. This has cut marketing budgets and caused owners and marketing directors to become creative while marketing. This study was conducted to determine what creative method nationally recognized chain restaurants and local business owners and a smaller chain restaurant were using to market their restaurants with a smaller marketing and advertising budget than normal in the current tough economy. The highest return on investment was the goal each company strived for while enticing consumers to frequent their businesses. In the mom and pop restaurant the restaurant's local reputation and collaborations with the Chamber of Commerce were successful on a non-existent marketing budget. The family owned mid-sized restaurant used community donations and small scaled advertising in local papers and flyers. The size of the budget wasn't as important as the effort put forth networking and the positive image in their neighborhoods. In the small chain restaurant a bigger buying power for flyers, advertising space on local television and radio, community donations, and collaborations were the methods which were successful when using a larger budget. Thinking outside the box like California Pizza Kitchen who only uses a \$3 million dollar annual budget to market both their nationally distributed frozen food line and their national restaurant chain through a partnership with Kraft Foods is pure genius and allows the maximum amount of advertising available to them. In larger chain restaurants the ability to use collaborations or partnerships was a creative decision which resulted in a higher profit margin. Using the tools available was successful no matter what budget was available. This was important not just for marketing a restaurant but it can be applied in any business.



363 Room 101 10:45-11:45 Board 39

Brian Cerquera

Joan Brenner (Faculty Sponsor)

Department of Economics, Bunker Hill Community College, Boston, MA,
02129

Economics Benefits of Research

How does United States benefit from research? How much economic influence does research gives? How do federal Agencies prioritize their investments and hence control the research that is done? Is United States getting positive results? This project will analyze if the United States research model is a good model for third world countries to follow. The research was done on the Internet, books from the library and articles from reputable newspapers and magazines. The college library system will help find relevant information. This research gives specific examples about The United States government's research program and the evolution of research in South America countries in the future. This project will hopefully encourage future leaders from third world countries to analyze how research is done and funded in major countries such as United States.



Education

364 Auditorium 10:45-11:45 Board 35

Kelsey Brennan

Silvy Brookby (Faculty Sponsor)

Department of Education, Framingham State College, Framingham, MA,
01702

Know Your Neighbors: A Global Comparative Study of Elementary Geography Curriculum

There are a great number of differing geographical areas and cultures contained within our vast global community. It is increasingly more important to know about the world and its geography due to the interconnected global network. Students in the United States have been shown in studies as having a low knowledge of geography (National Geographic Society, 2006). In these times, a low knowledge of geography will hinder the success of students in the United States' in this ever diversifying world in the future. A National Geographic survey of young Americans in 2006 stated that 20% say it's "not too important" to know where countries in the news are located. Due to the growing concern for the important problem of lack of geographical knowledge at an elementary level, an alteration to the current Massachusetts Social Studies curriculum will be recommended. By researching and understanding the current national curriculum content of countries such as England, Canada, and Japan, general improvements for the Massachusetts Elementary Social Studies curriculum will be suggested in order to enhance students' knowledge of geography. Cultural, social, and environmental factors will be studied from each location's curriculum to determine the most comprehensive recommended curriculum. Incorporating the positive ideas of other national geography curriculum will help to prepare the students of Massachusetts, and perhaps students all over the United States, to become more aware of geographical areas and their relationship to the world.



365 Auditorium 10:45-11:45 Board 3
Nara Do Nascimento
Mary Kay Cordill (Faculty Sponsor)
Department of Sociology, Cape Cod Community College, West Barnstable,
MA, 02668

Rethinking the American School System

It was once said that educated citizens make for a better society, but does our education system always live up to expectations? In the American school system, it is all about competition and getting the grade no matter what it takes. The No Child Left Behind law inspired a whole new generation of competition where punitive actions are taken if certain “tough standards” are not met. Teachers are often “teaching to the test” and an increasing number of students are unable to implement ideas taught in the classrooms into every day life. As a result, several voices have risen in an attempt to improve the American education system, voices such as the American author and lecturer, Alfie Kohn. Over the years, Kohn has become a controversial figure, speaking out against competition, standardized testing, and traditional schooling. This research project will attempt to understand and evaluate his proposal for change: teach our students to focus on what they are learning instead of how well they are stacking up against others; teach our students character formation. Also, to optimize student learning, teachers must have freedom within a curriculum to promote a depth of understanding, not simply memory. Then, when educational policies and focuses are changed, according to Kohn, all children can become intellectual members of society to the best of their own unique ability.



366 Auditorium 10:45-11:45 Board 6

Antero M Trindade

Patrick Hoell

Scott Erb

Karen Druffel (Faculty Sponsor)

Department of Economics, Framingham State College, Framingham, MA,
01702

Mentors Perception of Their Functions in Mentorship Programs

Our study will examine industry professional mentors involved in the Framingham State College Mentorship program and their perspective of the functions they will perform for the students in the program. The mentorship program at Framingham State College provides undergraduate students the ability to meet with industry professional mentors from various career fields. Participants in our study will include industry professional mentors, faculty, and students. Survey data will be collected as part of a larger study and all participants will complete surveys regarding their perspective of the functions of the mentors in the mentorship program; however our analysis will only focus on industry professional mentors. The purpose of this study is to identify how the industry professional mentors, faculty, and students perceive the functions of the mentors in the mentorship program. We expect the industry professional mentors will perceive their functions to include resume building, job searching, and interview techniques. The data collected from our study will be used to enhance the mentorship program and improve the overall experience for the students.



367 Auditorium 10:45-11:45 Board 12

Kelley O'Connor

Teresa Fitts (Faculty Sponsor)

Department of Kinesiology, Westfield State College, Westfield, MA, 01086

Young One's Yoga

Title: Young One's Yoga Purpose: About 6 million American children are obese and endangering their health and another 5 million children are on the brink of obesity (Generation XXL). In addition, 20 percent of school systems have decreased time for recess, which cuts almost fifty minutes a week (Center on Education Policy). Elementary school teachers are challenged to incorporate movement based activities into classroom curriculum. Studies have shown that exercise during school can help children learn and become more focused. Toscano and Clemente (2008) suggested yoga as an effective energizer in classroom settings. Methods: Young One's Yoga was conducted with a kindergarten class from a local elementary school. The students did yoga for fifteen minutes a day for a week. Yoga was used as a transition time between nap time and math. Fun and kid -friendly poses were used. For example: the kangaroo hop, downward dog and the owl pose. Instruction was aided by a yoga video, developed for children. Results: The results of this project were measured through observation of the children following the yoga lesson. Observational data included feedback such as alertness and positive attitude, as well as an observation of a decrease in interruptions and negative behavior. Conclusion: The purpose of Young One's Yoga was to let kindergarten students explore a different type of exercise in a learning environment. Introducing yoga is a fun way to get kindergarteners up and moving during a long school day. This project will provide further evidence of the benefits of incorporating movement into classroom settings.



368 Auditorium 10:45-11:45 Board 5

Diane A Smith, Mark E Taddeo, Robert Powell , Karen Druffel (Faculty Sponsor)
Department of Economics, Framingham State College, Framingham, MA,
01702

Mentoring Through the Sage's Eyes: An Indepth Look at Mentoring

Mentoring is a developmental partnership through which one person shares knowledge, skills, information and perspective to foster the personal and professional growth of someone else. The Framingham State College mentorship program is a great opportunity for students to experience these opportunities by engaging in a real relationship with an industry professional. For a student, being part of the mentorship provides the chance to vastly expand their (his/her) view and approach to the real world. The students will develop the skills and knowledge necessary to be more successful in corporate America. In regards to the functions of the mentors, this study will document the opinions of mentors, faculty members, and protégé's. To compare and validate these perspectives, we will distribute nearly 300 surveys among these three groups. The survey will examine to what extent a mentor's function includes: assisting in job searching, developing a protégé's professional skills, or providing emotional support and encouragement. The survey is in continuation of a yearlong study to develop a deeper understanding on mentorship ties. Our results can suggest ways to market and improve the mentorship program to increase student participation.



369 Auditorium 1:20-2:20 Board 33

Jenifer Prince-Moughan

Melissa Juchniewicz (Faculty Sponsor)

Department of Education, Northern Essex Community College, Haverhill, MA,
01830

Harvest Thanks

Multiculturalism and diversity in education present ideas and theories which celebrate differences. This is achieved by providing students with information illustrating cultures and ethnic groups which are most likely not represented by their own common knowledge. There is a need to develop ways for all humanity to understand and appreciate one another. By understanding the differences which define a culture we may find that in reality we are far more similar than first glance would suggest. Giving thanks is the great multicultural bridge and food is its cultural common denominator. This is a philosophy represented through out humanity. The purpose of these traditions and celebrations are to instruct younger generations on expressions of beliefs and practices in their community. Mankind has maintained many features of ancient observations, among them religious observances, parades and festivals. However, the one aspect present in all celebrations is food. Understanding that, Thanksgiving is deeply ingrained in American culture and students respond favorably to instruction which involves the potential of snack-inspired Harvest Thanks. Beyond the multicultural theme, there were two goals for this research. The first, to create a concept book geared toward the emergent reader. The second, that the book should end with an international harvest meal, complete from beverage to dessert. I am confident that this concept engages students in the philosophy of tolerance and understanding and that introduction through the common experience creates the bases of true multicultural education, Harvest Thanks. This remains a work in progress.



370 Auditorium 10:45-11:45 Board 4

Carly M Amrhein

Laura Ryan

Teresa Fitts (Faculty Sponsor)

Department of Kinesiology, Westfield State College, Westfield, MA, 01086

Moving with Math: A Service Learning Enrichment Program

Purpose: The purpose of this project is to establish the importance of physical activity in students and address how it can be incorporated in the school day, particularly in the mathematics curriculum. Due to the pressures of high stakes testing, our education system has narrowed its curriculum to accommodate standardized tests. As a result, increasing numbers of cuts are being made to physical education programs and recess. Students spend greater amounts of time sitting in classrooms, and less time benefiting from physical activity. Incorporating movement into the academic curriculum will help students get necessary physical activity while still focusing on curricular objectives. **Methods:** The Moving with Math Program is a service learning project conducted as an assignment for a class focusing on multi-disciplinary approaches to physical inactivity. A physical activity program will be developed to engage students in an after-school enrichment program. The program will focus on the reinforcement of mathematical principles through a variety of movement-based games and activities. **Results:** After analyzing observational data related to movement and mathematics in the service learning project, results will reflect the significance of physical activity. After participating in math lessons that incorporate movement, it is expected that students will respond to mathematics in a more enthusiastic, interactive way. This will reflect that incorporating activity into the classroom will allow students to remain focused on curricular objectives while engaging in necessary physical activity. **Conclusion:** Incorporating movement into math classes gives students the opportunity to benefit from physical activity while continuing to grow mathematically.



371 Auditorium 10:45-11:45 Board 34

Anna Sullivan

Susan McPherson (Faculty Sponsor)

Department of English, Quinsigamond Community College, Worcester, MA,
01606

The Role Of Creativity In Education

Creativity is defined and explored with support from several of the foremost thinkers on the topic. Expanding the definition of creativity allows for an exploration of topics such as right- versus left-brain thinking, mindful learning, standardized testing, accelerated learning, and interdisciplinary curriculum. This presentation surveys the concept of creativity as it relates to the education of young children. Works such as Daniel Pink's *Whole New Mind*, Sir Ken Robinson's *The Element*, and Ellen J. Langer's *The Power of Mindful Learning* are included. This project also probes alternative schooling models already in existence such as Reggio Emilia, CHAD – a tuition-free Philadelphia charter high school- and others.



372 Auditorium 10:45-11:45 Board 7

Rachelle Valaskatgis

Patrice Miller (Faculty Sponsor)

Department of Psychology, Salem State College, Salem , MA, 01970

Creative Collaborations: Dance in the Elementary Classroom

Teachers and researchers have recently begun to look at creative movement and dance as a developmentally appropriate practice that can be used to support the teaching of core curriculum subjects instead of just a way to divide up the school day and give students a break from rigid seat work. Studies have shown that student attitudes and motivation toward mathematics, for example, have increased through using dance in the classroom and a relationship between dance instruction, visual-spatial skills, and nonverbal reasoning has been examined. The present study aimed to test this notion with first-graders engaging in a traditional approach versus a creative dance approach math lesson focusing on the concept of patterning. The results showed that when both groups were taken together the participants' mean scores increased from the pretest to the posttest by .11 (on a 0 to 4 scale), however, the difference between the scores for the dance group alone showed the opposite trend, decreasing by .05. The results were not statistically significant but also did not follow the direction that was predicted. Perhaps math instruction through dance alone is not sufficient, at least tested in one brief exposure. It may also be the case that more routine and long term use of dance paired with other modes of learning may show positive effects on both learning and motivation.



Electrical Engineering

373 Concourse 3:50-4:50 Board 61

Julie Bissell

Yan Luo (Faculty Sponsor)

Department of Electrical Engineering, UMass Lowell, Lowell, MA, 01854

Improvement of Virtual Network Embedding Methods Using Edge Node Mapping and Largest Combined Request Algorithms

Network Virtualization allows multiple network architectures to use CPU and bandwidth resources in a shared network infrastructure. Virtual network (VN) requests can be mapped to a physical substrate of nodes and links using embedding algorithms. Development of VN embedding algorithms focuses on the efficient use and distribution of the available substrate resources. In this research, a VN embedding simulation program is modified to implement experimental algorithms, and the resulting data is collected from the program. The program was originally designed to show improvements in VN embedding using path splitting and node migration algorithms [1]. To improve upon this method, two mapping techniques are used: largest combined request and edge node mapping. The results of experiments using largest combined request mapping show improvement in efficiency and an increase in the time burden for network mapping. Initial experiments using edge node mapping show improvements in the efficiency of VN embedding. Further success with these methods could lead to more efficient utilization of resources in larger networks, and advances in future Internet technology. [1] M. Yu, Y. Yi, J. Rexford, and M. Chiang, "Rethinking Virtual Network Embedding: Substrate Support for Path Splitting and Migration," ACM SIGCOMM Computer Communication Review, vol. 38, no. 2, pp. 17–29, April 2008.



374 Concourse 3:50-4:50 Board 63

Oliver Kia

Joan Brenner (Faculty Sponsor)

Department of Electrical Engineering, Bunker Hill Community College, Boston, MA, 02129

What Were the Forces That Drove Scientists and Governments to Develop the Atomic Bomb?

This is an attempt to expose the engine or motives that galvanized scientists and governments to invent the atomic bomb. This research is intended to show how great inventions can be achieved when need be, especially when; curiosity, fear and power are entangled, and resources are in no short supply. For this research, I used the book "The Making of the Atomic Bomb" by Richard Rhodes, The Bunker Hill Community College e-library, attended lectures on related topics and combed the general Internet to absorb useful insights related to this subject. During this research, I discovered that the discovery of nature marked the beginning of modern day science. With resource and good nature disciplined and smart persons, any logically concluded natural phenomena can be experimentally achieve.



375 Concourse 3:50-4:50 Board 60

Alan Levin

Eric Polizzi (Faculty Sponsor)

Department of Electrical Engineering, UMass Amherst, Amherst, MA, 01003

Derivation and Study of New Electron Transport Model for Arbitrary Nanoscale Devices

Every year, electronic devices become increasingly smaller. This expands their usefulness, but also increases their complexity. With the emergence of nanoelectronics, quantum effects, which previously could be ignored, must now be considered. With this increase in complexity, the need for computational models becomes ever more necessary. This project is concerned with the field of computational nanoelectronics. Specifically, this project investigates a new, simplified modeling approach to electron transport in arbitrary nanoscale devices. The energy of the system, which is required to understand how the system will behave, can be stored in large matrices. Because of the complexity of the equations governing these quantum systems, they must be solved numerically, not analytically. The size of the energy matrices makes this difficult to do. By creating a reduced matrix of the energy in the active region it is possible to model the behavior of the device. High-performance numerical libraries were used to implement this new model and the results were compared to other models. Differences in the transmission coefficients and wave functions between the models were examined and used to determine the performance of the new model.



English

376 Auditorium 3:50-4:50 Board 6

Michelle Cherney

Lee Haselton (Faculty Sponsor)

Department of Literature, Cape Cod Community College, West Barnstable, MA, 02668

What We Learned

The English Composition I (ENL 101-54 Honors) students at Cape Cod Community College have concentrated on several types of writing this fall semester of 2009 to help them better understand not only formal academic writing and informal creative writing but also the value of writing as a whole. As a result, the two class posters represent the different assignments required. Therefore, both personal reflections and third person academic essays are included. The first poster is a tree of knowledge with the leaves naming the enrolled students with selected quotes from their writings. These writings were based on essays assigned from *The Norton Reader* by Linda H. Peterson and John C. Brereton; students kept eight weekly journal entries which allowed a first person response and analysis. This type of self-reflection was well-received as seen in the video-taped interviews which will accompany the poster. The second poster is based on a Garrison Keillor essay entitled "How to Write a Letter and Postcards." During the fifteen week course, photos were taken during class highlighting special student presentations, Higgins Art Gallery lectures, and guest lectures to show the importance of writing in the age of technology. Finally, a book will display the students' favorite writings from their three academic essays, journal entries, poems, and research findings. Michelle Cherney, class representative



English Literature

377 Room 101 3:50-4:50 Board 54

John Michael Bell

Shari Evans (Faculty Sponsor)

Department of English, UMass Dartmouth, N. Dartmouth, MA, 02747-2300

Women and the Romantic Journey

The Romantic poets routinely wrote on the concept of a journey, a growth from a world of naivete and innocence to one of reality, maturity, and individualism. For the most part, the protagonists in these poems were male. Likewise, little of the work of the Romantics could be considered feminist, even by the standards of their time. However, when the Romantics combined a female protagonist with Romantic journey, their stories took on a new light. Poems such as William Blake's "The Book of Thel" and Samuel Coleridge's "Christabel", despite the decidedly non-feminist views their authors typically took, read like fevered condemnations of a society that repressed women, and denied them the freedoms (social, sexual, and more) that men enjoyed. In my presentation, I will discuss the works of Blake, Coleridge, and William Wordsworth, and explore how the Romantic Journey altered their portrayals of women, making them dynamic and three-dimensional. I'll compare the aspects and purposes of the usual, male-centric Journey to those centered on women, and ultimately show how their unique, self-created genre helped them create works of feminism, even if they weren't feminists themselves.



378 Auditorium 3:50-4:50 Board 8

Kirstyn Costa

Delores Bird (Faculty Sponsor)

Department of English Literature, Cape Cod Community College, West
Barnstable, MA, 02668

Poe-etic License

Poe-etic License is an honors project which uses three poems by Edgar Allan Poe as inspiration for three songs in a collection called "Of Sleep and Dreams." The poems "Dreamland," "The Sleeper," and "Dreams" were chosen to be made into songs because of their consistent rhyme schemes and meter, strong rhythms, and focused meanings. Before writing the music, the poems were scanned and analyzed for their meaning, theme, and mood. All of these elements were taken into consideration when writing the vocal aspect, as well as the accompaniment for the songs. The music was written for piano in such a way as to capture and emphasize the meaning of each poem, while not becoming overbearing to the point of drawing anything away from the lyrics. The piano was chosen as the accompanying instrument because of its versatility, in that it has the ability to evoke haunting feelings as well as joyous ones. The piano is also an appropriate instrument to capture the feel of the time period. The music for "Dreamland" and "The Sleeper" draws inspiration from the Romantic period, Chopin in particular. The music for "Dreams," due to the poem's upbeat feel, draws inspiration from 20th Century jazz. The songs were recorded and are presented as a video, with scenes and settings appropriate to the theme of each poem, and attire appropriate for the time the poems were written. Additionally, the poems are displayed in an artistically designed lyrics booklet, and sheet music for each song is provided. Poe-etic License serves to intensify and clarify the feeling behind some of Edgar Allan Poe's poems.



Environmental Studies

379 Room 101 10:45-11:45 Board 45

Emily Barnes

Thomas Stevens (Faculty Sponsor)

Department of Environmental Studies, UMass Amherst, Amherst, MA, 01003

Bicycle Sharing Program

Due to global warming, the climate is currently undergoing significant changes. Many scientists believe a substantial amount of this warming can be attributed to anthropogenic activity. The burning of fossil fuels releases carbon dioxide and other greenhouse gasses into the atmosphere, which contribute to the enhancement of the greenhouse effect and perpetrates global climate change. Since fossil fuels are used to power most vehicles, using alternate transportation, such as a bicycle, would result in a reduction of anthropogenic carbon dioxide emissions. Therefore, a Bicycle Sharing Program, which allows students to borrow bikes for free, is currently being implemented on the University of Massachusetts Amherst campus and will serve as an example of environmental sustainability. To fund this pilot program, the Commonwealth College Honors Research Grant was acquired. This grant allowed the program to purchase a fleet of used bikes. Additional bikes have also been donated. To repair and tune up each bike, the program is currently employing the Bike Co-op, a student run business on campus. The bikes will then be spray painted a uniform distinct color and labeled. Bike helmets have been donated by Mass Bike in North Hampton, Massachusetts and bike locks will be purchased from a local business. A bike, a helmet, and a lock will be loaned out (as a set) to students from a location on campus not yet determined. In addition to the environmental benefits and awareness the Bicycle Sharing Program will generate at the university, it will provide students with the option to bike rather than to drive, encouraging a healthier lifestyle.



380 Auditorium 2:35-3:35 Board 16

Hannah J Chamberlain

Joshua Coomey

Kathleen Arcaro (Faculty Sponsor)

Department of Animal Sciences, UMass Amherst, Amherst, MA, 01003

Dendroecological Analysis of Old-Growth Tsuga-Quercus-Betula Forest in Western Massachusetts

In a state that was largely deforested in the 1800s, old-growth forest in Massachusetts has become a rare and important ecosystem. Defined as a forest stand showing minimal human interference, evidence of ecological events, and in which a significant number of trees have reached half of their maximum effective age, old-growth forest provides a unique habitat for plant and animal species as well as a living window into natural history. The purpose of this study was to assess the age of eastern hemlock (*Tsuga canadensis*), white oak (*Quercus alba*), and black birch (*Betula lenta*) trees on the steep west facing slope behind the Worcester Dining Commons on the UMass Amherst campus, as well as to search for signs of past ecological events in order to qualify the stand as old-growth. Core samples were extracted from trees of the three species in question and analyzed for age and growth patterns in their rings. The oldest *T. canadensis* is an estimated 224 years, the oldest *Q. alba* an estimated 304 years, and the oldest *B. lenta* an estimated 219 years. With several other samples of each species dating close to these ages, there are strong implications that this stand meets the age qualifications for old-growth. In regard to ecological disturbances, continued analysis of the *Q. alba* and *B. lenta* samples holds the potential of showing evidence of a release event related to blow down from the 1938 hurricane as well as a significant release event in the late 1700s and early 1800s. Although we found no correlation to major historical ecological events in *T. canadensis*, there is dendroecological evidence of a recent infestation of hemlock wooly adelgid (*Adelges tsugae*) that threatens the longevity of eastern hemlock in this region.



381 Auditorium 2:35-3:35 Board 14

Justine Cupero

David Christensen (Faculty Sponsor)

Department of Biology, Westfield State College, Westfield, MA, 01086

Long-term Comparison of the Russell Pond Macrophyte Community

In this study we evaluated macrophyte diversity and distribution in Russell Pond, MA and compared current samples to those collected in 1978. Residents have been concerned that the pond productivity has increased and nonnative macrophytes had been introduced. Macrophytes (aquatic plants) provide shoreline stabilization, nutrient sequestration, fish and wildlife habitat. Introductions of nonnative macrophytes can cause problems by reducing native plant diversity, altering nutrient cycling, influencing fish and wildlife habitat and causing excessive growth. We did not sample any nonnative macrophytes in 2009. However, the species composition was different than that of 1978 but the general abundance and distribution had not changed. Macrophytes in general were sparse in 1978 and 2009. Continued long-term data collection and analysis are necessary to capture pond variability from year to year.



382 Auditorium 2:35-3:35 Board 9

Lauren Garant

David Loomis (Faculty Sponsor)

Department of Environmental Studies, UMass Amherst, Amherst, MA, 01003

A Demographic Assessment of Users of the Norwottuck Rail Trail: Implications for Park Management

The University of Massachusetts Amherst Natural Resource Conservation Department designed and distributed a survey to users of the Norwottuck Rail Trail between June and August 2009 to assist the Department of Conservation and Recreation in trail management. A mail or internet-based survey was used to gauge the ways people use the trail, to rate their satisfaction with their experiences, and to collect basic demographic information from users. I will be presenting an analysis of the preferences and behaviors of these users by gender and age. The areas that I have chosen to analyze are usage issues by age, safety issues by gender, and usage issues by gender and by family structure. Based on the literature, we expected to find that women value more park staff presence and safety measures, that individuals with children under 18 are more likely to use the trail for family recreation, and that young people and old people are likely to use the trail for different activities. We did find that women placed a higher value on safety measures and used the trail for socializing; however, there were no differences on certain gender-based usage items. We also found that younger people are more likely to take part in a wide range of activities than older adults. The implications of these results can help park managers and personnel better provide for their users, and they can provide researchers with insights into current trends in outdoor recreation habits.



383 Auditorium 2:35-3:35 Board 2

Matthew Heron

Sharon Schaff (Faculty Sponsor)

Department of Internship, Bunker Hill Community College, Boston, MA,
02129

Stewarding our Environment and our Communities: The Charles River
Conservancy

Community Service is helping your community and yourself grow as one. My presentation will be about the Charles River Conservancy which is a non-profit organization working to change the image of the Charles River. I have an intern there for a couple of months now. Some of the things I do for the CRC are going out on events. Such as clean-ups, landscaping with other colleges. I also reach out to colleges to try and recruit volunteers for events. I do work on files and lots of press work. Since being at the CRC I have learned leadership skills and communication skills, which also helps me in my life. It has also open my eyes to the environment and how we treat it. It feels good to know that I can back to my community in a good way.



384 Auditorium 2:35-3:35 Board 1

Erica Kaplan

Kathleen Arcaro (Faculty Sponsor)

Department of Animal Sciences, UMass Amherst, Amherst, MA, 01003

Biological Assay for Assessing the Presence and Removal of Pharmaceutical and Personal Care Product Contaminants from Drinking Water

Recent studies have shown that some of the active constituents of the pharmaceutical and personal care products (PPCPs) released into our waste water are not removed by current drinking water treatment processes. PPCPs in drinking water are a health concern because they can alter gene expression in specific tissues and disrupt normal cellular function. The purpose of this study was to determine if the water treatment processes currently in use at four Water Utilities in New England are successful in removing a mixture of PPCPs. Source or "raw" water collected from the Drinking Water Utilities was spiked with a mixture of PPCPs. The spiked water was then run through a bench scale treatment process replicating the treatment method used by the Water Utility, and the purified or "finished" water was collected. Adult Japanese Medaka fish (*Oryzias latipes*) were exposed to the raw, spiked and finished water samples from each Utility for 96 hours. After exposure the fish were sacrificed, livers dissected and total RNA isolated. Changes in gene expression of an enzyme involved in the metabolism of xenobiotics, cytochrome P4501A1, will be measured using real-time reverse transcriptase polymerase chain reaction. Results will indicate whether CYP1A1 gene expression is induced by the PPCPs in the spiked water, and whether the treatment process removed the compounds inducing CYP1A1 gene expression. Results will benefit the Water Utilities, as they are actively seeking to remove PPCPs from their finished water in an effort to deliver purer drinking water to their customers.



385 Auditorium 2:35-3:35 Board 11

Melissa Masse

Tom Grady (Faculty Sponsor)

Department of Environmental Studies, Bristol Community College, Fall River, MA, 02720

Establishing a Monarch Butterfly Habitat

This project follows the creation of an organic Monarch butterfly garden at Bristol Community College, the primary purpose of which is to meet the needs of the Monarch butterfly which faces many obstacles from nature and humans alike. The environment at BCC is already well suited to support the milkweed host plants that the monarch butterfly needs to survive. Research will investigate the host and nectar plants which are required for each stage of Monarch butterfly development and what conditions are best for those plants to thrive, how to test for those conditions, and how to nourish the soil if necessary. The project will also provide networking techniques to secure resources and support for college wide collaboration. This type of garden will benefit any college in ways both aesthetic and academic, thereby providing a lasting opportunity for future scholarly endeavors.



386 Auditorium 2:35-3:35 Board 12

Joshua Pitt

Kate Martin (Faculty Sponsor)

Department of History, Cape Cod Community College, West Barnstable, MA,
02668

Paul R. Ehrlich and The Population Bomb

In 1968, Stanford professor Paul R. Ehrlich published *The Population Bomb*, wherein he argued that the world population would soon grow to a point where there would not be enough resources to support it. This looming threat of massive resource depletion caused by an overly high population is a threat to all of humanity and should be dealt with accordingly on a global scale. If it is not rectified in an appropriate manner, the consequences could be unprecedentedly disastrous. At the time *The Population Bomb* was written, the human population on Earth was comprised of approximately 3.5 billion people; it has now reached approximately 6.5 billion people, with all signs pointing to further growth in the future. That the Earth's biosphere is already overtaxed to the extent of approximately 2 billion people is of little concern to the teeming masses of humanity, who continue to reproduce and metastasize across the planet like a malignant, anthropomorphic tumor. The purpose of this project is to analyze data provided by the gift of hindsight over the past forty years to show how the predictions made in Ehrlich's book have turned out to be correct and to also lend credence to his more recent assertions that certain parts of *The Population Bomb* were actually overly optimistic.



387 Auditorium 2:35-3:35 Board 10

Michael Quercio

Kathleen Arcaro (Faculty Sponsor)

Department of Animal Sciences, UMass Amherst, Amherst, MA, 01003

Uptake and Distribution of Manufactured Gold Nanoparticles in Japanese Medaka

Nanomaterials are being used in the production of an ever increasing number of consumer products including, cosmetics, paints, electronics, sporting goods, and stain resistant-clothing. This widespread use of nanomaterials will inevitably lead to their release into the environment, yet little is known regarding the fate, transport and accumulation of nanoparticles in the environment. The purpose of this project is to assess how the surface properties of gold nanoparticles (AuNPs) affect the uptake and distribution of nanoparticles in a living system. Japanese medaka fish (*Oryzias latipes*) were exposed to each of three types of ionically charged AuNPs (positive, negative and neutral) for 24, 72, and 120 hours. After each exposure period the fish were sacrificed and the brain, liver, gonads, heart, gills, intestine, and dorsal fin were harvested. Levels of gold atoms in each organ were analyzed using inductively-coupled plasma mass spectrometry. The data indicate that the highest accumulation of gold nanoparticles occurred in the intestines after exposure to the cationically charged AuNPs. Similar AuNP concentrations were observed in fish tissue after 24 to 120h of exposure. Depuration experiments demonstrated that the fish had eliminated most of the AuNPs after being placed into nanoparticle-free water for 120 hours. Experiments are being run to test additional cationically charged AuNPs for longer exposure periods to further examine uptake and accumulation.



Finance

388 Room 101 10:45-11:45 Board 56

Sushant Pradhan

Benyamin Lichtenstein (Faculty Sponsor)

Department of Management, UMass Boston, Boston, MA, 02125

Profitability of Microfinancial Investment for a Commercial Investor.

Out of nearly 7 billion global citizens, approximately 2 billion people constitute the bottom of the global economic pyramid, lacking the means and resources to contribute to the global economy. Further, roughly 40 to 80 percent of the populations in developing economies lack access to formal banking services. As a result of these challenges, a new business form called Microfinance has emerged, with the goal of supporting the entrepreneurial spirit of micro-entrepreneurs in poor areas by providing credit and other financial services. In the main, microfinance institutions are based on a non-profit model, being funded by philanthropy and international development aid. However, the sheer size of the demand for microcredit worldwide makes it impossible for this need to be met simply by non-profit organizations. Thus, many people argue that only by letting profit-oriented institutions enter the scene can sufficient funds be raised to meet the demand. In this light, my research topic explores the profitability of microfinancial investments for a commercial lender. I am using the data set provided by Microfinance Information eXchange (MIX) for the analysis in my research. I have used various kinds of institution specific financial ratios corresponding to a sample of for-profit MFIs (Microfinancial Institutions) in order to determine the profitability of investing in a MFI. My aim is to attempt to understand if investment in microfinance can serve as an attractive addition to a commercial investor's portfolio in terms of both capital gain as well as portfolio diversification. The implications of my research are meant to give the financially underserved populations an access to the global pool of capital, while at the same time generating a steady return at par (if not more) with returns from investments of similar risks, to the investor.



History

389 Auditorium 3:50-4:50 Board 21

Vincent Capone

Sigrid Schmalzer (Faculty Sponsor)

Department of History, UMass Amherst, Amherst, MA, 01003

The Human Flesh Search Engine

The Human Flesh Search Engine is a recent, unique phenomenon on the Chinese internet. Comprising thousands of forum and entertainment websites and mobilizing the overwhelming number of Chinese internet users, the search engine is able to quickly find obscure information and identify seemingly anonymous internet personalities. The term was coined in 2006 after a video of an anonymous woman crushing a kitten with her shoe was posted to a Chinese website. Chinese web users quickly discerned the woman's identity and used this information to harass the woman, prompting government involvement. My thesis examines cases of the search engine, focusing specifically on the themes of animal abuse, government corruption, and Chinese traitors. Within these contexts I discuss the pervasive issue of anonymity. Those exposed through the search engine lose all anonymity, with personal information displayed to people all over the world. On the other hand, those who seek and reveal this information have the luxury to hide behind aliases. Recently this issue has sparked debate in the Chinese legal system. I make connections to the Cultural Revolution era of Chinese history, and in particular to the movement of big-character posters which like the search engine, mobilized large groups of people from all walks of society. These netizens have even been referred to as modern-day Red Guards for their cyber-vigilantism. As the internet in China continues to expand and become accessible to the population, it is argued that the power of the Human Flesh Search Engine will need to be reined in.



390 Auditorium 3:50-4:50 Board 18

Molly Colburn

Mara Dodge (Faculty Sponsor)

Department of History, Westfield State College, Westfield, MA, 01086

Kristallnacht: A Change in the Roles of Jewish Women in 1938 Germany

This poster presents my research on the Nazi violence against Jews during the Kristallnacht pogrom. My research focuses on how societal roles of Jewish women shifted after this event. On the night of November 9-10, 1938 the first full-scale violent reaction toward Jews living in Nazi Germany occurred. It was precipitated by the assassination of Ernst vom Rath, a German diplomat in Paris. With over a quarter of all Jewish men taken away to camps on the night of Kristallnacht, Jewish women were forced to change their roles within society and within their family. Jewish men were not safe, and women became the foundation of Jewish society. These shifting roles, although often times ignored in research about this event, left many Jewish women under extreme emotional and economic pressure. Using various witness testimony, one can argue that the effects of Kristallnacht were long-term for those who survived.



391 Auditorium 3:50-4:50 Board 15

Emma Haselton

Claudine Barnes (Faculty Sponsor)

Department of History, Cape Cod Community College, West Barnstable, MA, 02668

World War II and the Korean War: One Naval Officer's Perspective

Oral history offers scholars the opportunity to have a first person point of view of the past. Through hearing and then recording detailed stories of those who have actually experienced monumental as well as seemingly insignificant historical events, students and historians are able to understand what life was like before their time. As the year 2009 draws to a close, many of those young men and women who bravely fought during the decades of World War II and the Korean War are now facing life's end. Therefore, the importance of keeping an accurate record of these soldiers' extraordinary, highly personalized war stories should not be underestimated. While these veterans' tales of war are all-too-often tragic, the soldiers' recollections are also uplifting and provide valuable life lessons for all humanity. At twenty-one years of age, Wallace Meredith Haselton, my grandfather, was one of those American soldiers who had a pivotal wartime role to play. Earning the title Lieutenant Commander, Haselton made moral and ethical choices that would help to shape not only who he is now at age eighty-eight but also America in the postwar world. One highly controversial choice involved the decision by the United States to drop the atomic bomb on Hiroshima. My grandfather agreed with that decision which he felt ultimately saved lives and ended the war. I learned my grandfather is very confident about his convictions and a natural leader which served him well during the course of his banking career. While it is true that war brings great damage to the minds and spirits of so many, my grandfather does not view his role as damaging. Because of his war efforts, he became a well-known, respected, and admired CEO of KeyBank. Secondary sources support much of Wallace Haselton's recollections of both WWII and the Korean War which verified his perspective of war and its global consequences. Therefore, the purpose of this honors oral history project is to help preserve the past for students of history and tell one Naval Officer's perspective of World War II and the Korean War.



392 Auditorium 3:50-4:50 Board 16

Rebecca L'Ecuyer

Douglas Telling (Faculty Sponsor)

Department of History, Framingham State College, Framingham, MA, 01702

Puritan Democracy

The idea that democracy may have developed within Puritan colonies may seem counter intuitive. However, this study shows that democracy began its development within the Puritan colonies of the Massachusetts Bay Colony and that in part it developed because the colonies were puritan. Research showed that the Massachusetts Bay Colony was, despite debate to the contrary, a fertile ground within which democracy established its roots. Though the growth of democracy within the Puritan townships of the Massachusetts Bay Colony was slow it was often steady. Through an examination of surviving town meeting documents from the period and several secondary sources the study has shown that, although outwardly Puritan townships were exclusive and retained stringent requirements for admittance into the community, once one was accepted the society was quite inclusive and democratic. Representation and legitimacy through consent, two essential democratic ideals, grew out of the seventeenth century Puritan settlements. These elements of democracy become evident through the study of suffrage rights within individual townships, with particular emphasis on the township of Dedham. A small scale study of the townships proves that at its most basic level the Massachusetts Bay Colony was inherently and implicitly democratic.



393 Auditorium 3:50-4:50 Board 17

Kelley Marino

Joan Brenner (Faculty Sponsor)

Department of History, Bunker Hill Community College, Boston, MA, 02129

Atomic Bombings

The decision to use atomic weapons to end World War is a topic that has been heavily debated by historians, and political scientists. The objective of this paper was to determine if the bombings were the best decision at the Time of World War Two to end the war. This piece is a condensed version of the political, and historical factors that influenced this decision. Using internet research such as declassified documents, and library research including books published by military historians. The library research used was also books published by Japanese authors explaining the Japanese persecutive of the bombings, and their understanding of the aftermath. Issues that were found the be of relevance, and discussed included President Truman, and the political forces that influenced his decision. Further discussed were other possibilities, and their ramification other than nuclear use to end World War Two. Finally discussed was the morals, and ethics surroundings the bombings. As a result, a higher awareness is gained of the many complex factors that influenced the decision to use nuclear weapons to end World War Two, and some of affects if we had not used them.



394 Auditorium 3:50-4:50 Board 20

Christopher Meehan

Lee Haselton (Faculty Sponsor)

Department of Literature, Cape Cod Community College, West Barnstable, MA, 02668

Improving Horse Bits

This research project will examine the horse bit which has been around for thousands and thousands of years; however, in every stage of history the mechanism has improved. From Roman times to present day, the horse bit has been in constant progression. Although the horse bit has undergone several minor changes, it kept the same basic structure of the first prototype. Now, additional features are on the modern-day bit pieces that were previously unimaginable. Even before the Romans were using this age-old machinery, Asians knew of its use and already amplified the efficiency of it. Over the years horse bits have been reinvented and modified thus enhancing the effectiveness as well as the humaneness of the bit. Consequently, over the gradual evolution of bit pieces, there has been a great deal of improvement leading up to the most technologically-advanced, modern bit seen today in 2010.



395 Auditorium 3:50-4:50 Board 19

Donna Perezella

Luke Salisbury (Faculty Sponsor)

Department of Literature, Bunker Hill Community College, Boston, MA,
02129

The Words: The Legacy of Julius & Ethel Rosenberg

In 1953, Julius and Ethel Rosenberg were tried and convicted of the crime of Conspiracy to Commit Atomic Espionage after a trial which lasted for just 21 days including jury selection and deliberation. This project will examine the Rosenbergs' maintaining of their innocence from the moment of their arrests in 1950 until their ultimate executions and its impact on their two young sons. It will take a trip back in time to explore the respective childhoods of Julius and Ethel through their eventual marriage. Next it will examine the circumstances that lead to their arrests with an emphasis on the critical role played by David Greenglass, Ethel's brother. An in-depth look at their simultaneous incarcerations and trial years will be elaborated on through the careful readings of the "Jailhouse Letters" written by Julius and Ethel as well as works by their own sons. The interpretation of these historical documents will provide insight into this significant event. In the further examining of the media's sensationalizing of their arrests and incarcerations, the final piece of the puzzle will be put in place. Through the abundant biographical accounts written by their sons and by other authors, as well as the in-person lecture by Robby Meeropol, the impact of the loss of their parents and their "Atomic Spy" label on the lives of Michael and Robby (Rosenberg) Meeropol, both yesterday and today, will be better understood.



Interdisciplinary Studies/BDIC

396 Room 101 10:45-11:45 Board 46

Justine Carr

Robert Darst (Faculty Sponsor)

Department of History, UMass Dartmouth, N. Dartmouth, MA, 02747-2300

The Aveda Corporation: Building a Sustainable, Socially Responsible, and Profitable Company

The Aveda Corporation has partnerships with indigenous tribes in Brazil, Peru, and Western Australia, farms in South Africa, and a woman's cooperative network in Morocco. Through these partnerships they sustainably source raw materials used in their products. This greatly helps the communities' economy as well as letting them preserve their routine way of life. Aveda also has an incredible sustainability program, including funding enough new wind energy sources to offset 100% of the electricity used by their primary manufacturing facility, distribution center, and corporate headquarters in Blaine, Minnesota. Through Aveda's hard work they have set an example for other multinational companies on just how easy it is to "go green" while still turning out huge profits, as well as set the standard for corporate social responsibility. Through researching the financial statements of the Aveda Corporation as well as their contracts with the aforementioned communities, the mutual economic benefits can be shown.



397 Auditorium 10:45-11:45 Board 21

Dalia Klausner

Miriam Cremer (Faculty Sponsor)

Department of Interdisciplinary Studies/BDIC, UMass Amherst, Amherst, MA, 01003

Injectable Contraception Use among Salvadoran Women: An In-depth Analysis of Attitudes and Experiences

Objective To survey a cross section of reproductive-age Salvadoran women in order to assess the factors which influence their decision to use an injectable form of contraception. Methods Reproductive-age women located at three rural Salvadoran health clinics were asked to participate in a study to assess their current and past experiences using injectable contraception. Verbal informed consent was obtained, and an anonymous 23-question survey was administered by research coordinators. Results Surveys were completed in 427 women with an average age of 27.3 years and average parity of 2.6. Average duration of injectable contraception use was 16.8 months. The majority (83.6%) of past and present users were very satisfied with injectable contraception, most commonly because they did not have to remember to use it daily (44.9%). Nevertheless, 18% of subjects reported missing at least one shot. 69% of current users reported at least one negative attribute, of which half were side effects (48.1%). The most common side effects were weight gain (46%) and irregular bleeding (14%). Conclusion The main reason Salvadoran women chose to use an injectable form of contraception is because they do not have to think about it on a daily basis. However, almost one-fifth of women reported that they missed at least one shot, putting themselves at risk for unplanned pregnancies. Additionally, many women do not like the side effects and may be open to explore using other long term reversible methods of contraception such as IUDs or implants.



398 Auditorium 2:35-3:35 Board 15

Rose Weiss

John Gerber (Faculty Sponsor)

Department of Plant, Soil, and Insect Sciences, UMass Amherst, Amherst, MA, 01003

Commercial Composting in the Restaurant Industry

Food waste is the next frontier of the recycling movement and a growing concern in the restaurant industry. Food service establishments in pocketed areas around the country are looking to commercial composting to cut high costs of waste removal, reduce their overall waste stream volume, and “green” the environmental impact of their business practices by diverting waste from landfills and into a useful agricultural product. The necessary roles of three constituent parties in the commercial composting circuit are examined: waste producers, waste haulers, and waste processors. Obstacles to the logistical and economic efficiency of restaurant composting stem from limited or absent infrastructure connecting these three parties. A lack of infrastructure and too few processing sites to receive organic waste have obstructed continuous composting in Pioneer Valley restaurants. There is a great need for more processing sites, such as farms and industrial composting plants, which are currently the weakest link in the system. The necessary infrastructure and logistical support to coordinate the three parties and to negotiate health and environmental regulations is complex, time-consuming and expensive. Solutions to these obstacles will be local specific. There is an opportune market for innovation to facilitate restaurant participation in the rapidly developing commercial composting industry nationwide. Alternative technologies to consider include various on-site composting methods and, a mobile contained-vessel processing unit that accomplishes both the hauling and processing of food waste simultaneously. Logistical challenges and economic feasibility must be considered in every model.



Internship

399 Auditorium 3:50-4:50 Board 4

Candice Guy

Teresa Fitts (Faculty Sponsor)

Department of Kinesiology, Westfield State College, Westfield, MA, 01086

Personal Training in a Pediatric Weight Loss Program: A case study approach

Cali and Caprio (2008) estimated that 110 million children and adolescents are considered overweight or obese, leading to one of the greatest challenges of the 21st century. The purpose of this case study was to examine the changes in fitness level and weight loss of pediatric clients ($N = 3$) in a medically-based weight management program under three different personal training conditions. A 10-week program was implemented to determine the influence of personal training on program outcomes. Each client participated in the same group exercise sessions as well as nutrition and behavior classes. Each client was also provided a full membership to the YMCA. Client A worked with a personal trainer once a week; Client B worked with a personal trainer twice a week and Client C did not meet with a personal trainer. Pre and post-test data included a timed treadmill test and a 1-minute sit-up test. A case study of each client was developed to learn about individual differences in fitness levels and personal training preferences in a medically-supervised weight management program. However, additional research is needed to determine the support and educational needs of pediatric weight management clients.



Kinesiology

400 Auditorium 10:45-11:45 Board 27

Elizabeth Bouley

Teresa Fitts (Faculty Sponsor)

Department of Kinesiology, Westfield State College, Westfield, MA, 01086

The Case of Superfit. Adherence in the Apparently Healthy Population

Purpose: The purpose of this case study was to assess and develop a fitness program for a member of the campus community and to examine possible behaviors that contribute to adherence to a fitness program. Many factors affect adherence to exercise, which include: misinformation, time conflicts, social anxiety, injury and lack of social support. Researchers examining exercise adherence and compliance have suggested using strategies such as developing incentives, utilizing social support, scheduling workout time and becoming educated about the proper use of exercise equipment. Methods: Students from an upper level Fitness Assessment and Prescription course were paired with an individual from the college community in a service-learning experience. Each client was assessed using the MicroFit system. Students used the results to formulate a fitness program based on the client's needs. A case study model was used to summarize the data from each client. Results: Superfit was eager to start the program and saw both physical and emotional results immediately. The greatest result from the program was personal self-confidence. Additional results included increased muscle mass, strength, and cardiovascular endurance. Conclusion: The case of Superfit provides an example of adherence to exercise with the support of a personal trainer. As a service learning experience, Superfit also provided an example of success when appropriate strategies are implemented, increasing student self-confidence in the personal training process.



401 Auditorium 1:20-2:20 Board 27

Sarah Casey

Barry Braun (Faculty Sponsor)

Department of Kinesiology, UMass Amherst, Amherst, MA, 01003

Effects of Exercise Training and/or Metformin on Cardiorespiratory Fitness in Men and Women with Prediabetes

Introduction: Short-term treatment with metformin reduces peak oxygen consumption (VO₂peak), indicating lower cardiorespiratory fitness. in young healthy individuals. Purpose: To determine the effect of metformin and exercise training, compared to either treatment alone, on VO₂peak fitness in men and women with prediabetes. We hypothesized that, metformin and exercise training would blunt the improvement in VO₂peak, compared to exercise training alone. Methods: Twenty-seven participants, both men (n=17) and women (n=10), with prediabetes participated in a double-blind, longitudinal study design. Subjects were randomized to placebo (P; n = 6; 4F, 2M; 89.6 ± 17.9kg, 47.7 ± 12.0yr), metformin (M; n = 7; 5F,2M; 103.2 ± 15.7kg, 43.3 ± 5.8yr), exercise training and placebo (EP; n = 7; 3F,4M; 99.1 ± 12.8kg, 44.0 ± 7.6yr), or exercise training and metformin (EM; n = 7; 5F,2M; 93.9 ± 18.5kg and 49.3 ± 7.0yr) group. Individuals were provided 2000mg/d of M or P and the effects of a 12 week supervised training program consisting of cardiorespiratory (3 d/wk 45 min/d at 70% heart rate max) and resistance exercise (2 d/wk 70% 1-RMmax) on aerobic fitness was determined. VO₂peak was expressed in absolute terms and scaled to body weight and to fat free mass, Heart rate peak (HR), Work peak (Wpeak), and time to exhaustion (TE) were compared within and between groups using a 2 way-repeated measures ANOVA. Data reported as mean ± SEM. Results: Compared to EP, EM blunted improvements in VO₂peak expressed in absolute (2.52 ± 0.1 vs. 3.04L/min ± 0.1; p < 0.05) and relative terms (28.1 ± 0.5 vs. 30.8 ± 0.9 ml/kg/min; p < 0.05; (49.8 ± 0.9 vs. 52.2 ± 1.1 ml/kg-FFM/min; p < 0.07). However, exercise with or without M, increased VO₂peak, Wpeak, and TE compared to either M or P (p < 0.05). Metformin alone had no measureable effects on any of the outcomes. Conclusion: Metformin blunts the improvement in VO₂peak following a 12-week training program in individuals with prediabetes. These data suggest that the addition of metformin may reduce the potentially beneficial gain in fitness caused by exercise training in people at high risk for type-2 diabetes. The implication of these findings to metabolic health remains to be determined. In addition to the Faculty Sponsor, the presenter would like to acknowledge the support of co-sponsor Steve Malin.



402 Auditorium 1:20-2:20 Board 30

Megan Donovan

Patty Freedson (Faculty Sponsor)

Department of Kinesiology, UMass Amherst, Amherst, MA, 01003

Movement and Exercise Education through Fitness Inspired Training (MEEFIT)

Introduction: While many physical activity (PA) interventions focus on directly increasing PA in a structured setting, many opportunities for PA come outside of an organized setting. Theoretically, focusing on PA motivation may produce a more lasting impact on PA patterns. Because PA motivation stems from successful experiences, activity programs focusing on competitive sports performance only motivate the best performers and most children remain unengaged. Purpose: This study examined the effects of a skills-based PA program on a child's likeliness to engage in leisure time PA (LTPA).

Methods: A 5-week, 8-session program was implemented with a small group (n=7) of children. Each of the 90-minute sessions focused on a specific skill (e.g., basketball dribbling), and included a warm up, skills practice and strengthening exercises. Psychosocial questionnaires were completed and PA levels were monitored using an accelerometer worn on the hip for four days prior to and following the intervention. Results: Six children (3 girls) participated in the study (Mean \pm SD: age = 10.2 \pm 0.4 y, BMI = 22.5 \pm 6.6 kg/m²). The mean minutes of MVPA decreased from 62.6 minutes at baseline to 38.5 minutes at follow-up. There was no significant difference from baseline to follow-up among the PA motivation-related psychosocial variables.

Discussion: An overall decrease in MVPA and no change in PA motivation were observed following the intervention. The short duration of the study, small sample size, and high baseline values for MVPA minutes and psychosocial variables may have led to the generation of these counterintuitive outcomes.



403 Auditorium 1:20-2:20 Board 35

Jennifer Harkey

Edward Debold (Faculty Sponsor)

Department of Kinesiology, UMass Amherst, Amherst, MA, 01003

The Effect of Elevated Levels of Phosphate and Acidosis on Myosin's Ability to Move Actin in Vitro

A variety of physiological factors have been identified as contributors to the phenomenon of muscular fatigue. However, the underlying molecular mechanisms of this transient muscle dysfunction remain poorly understood. The present study explored the combined effects of two putative agents of fatigue, inorganic phosphate (Pi) and acidosis (H⁺), on the velocity of actin filaments (Vactin) driven by myosin, muscle's molecular motor, using an in vitro motility assay. Our findings indicate that acidosis (pH 6.5) significantly ($p < 0.05$) slows Vactin compared to the control pH (7.4) in the absence of added Pi. In contrast, elevated levels of Pi (30mM) appear to increase Vactin. Surprisingly, the addition of Pi increased Vactin by a significantly greater amount under acidic conditions (1.6 ± 0.2 to 3.3 ± 0.1 $\mu\text{m}/\text{sec}$) compared to the control, pH 7.4, (6.1 ± 0.2 to 6.8 ± 0.2 $\mu\text{m}/\text{sec}$). Thus, Pi caused a ~ 2-fold increase in Vactin at pH 6.5 while this same increase in Pi caused only an 11% increase in Vactin at pH 7.4. This is the first study to examine the combined effects of elevated Pi and H⁺ on myosin function in vitro and these results indicate that Pi can partially reverse the depressive effect of acidosis on Vactin, implying that Pi might attenuate rather than augment the effects of acidosis during fatigue. However, Pi-release from myosin is closely associated with force-generation; therefore, the increase in Vactin may occur at the expense of muscular force and power.



404 Auditorium 1:20-2:20 Board 28

Oleg Kamenetsky

Barry Braun (Faculty Sponsor)

Department of Kinesiology, UMass Amherst, Amherst, MA, 01003

Effects of Exercise Training and/or Metformin on Cardiovascular Health in Men and Women with Prediabetes

Background: Individuals with prediabetes are at high risk for cardiovascular disease. Exercise and metformin independently improve cardiovascular health. Effects of adding metformin and exercise on cardiovascular health are unknown. Purpose: To determine whether combining exercise with metformin is more effective than either treatment alone on indicators of cardiovascular health. We hypothesized that exercise and metformin would improve cardiovascular health more than either treatment alone. Methods: 27 participants (17 women, 10 men) with prediabetes participated in a double-blind, longitudinal study design. Subjects were randomized to a placebo (P; $n = 6$; $89.6 \pm 17.9\text{kg}$, $47.7 \pm 12.0\text{yr}$), metformin (M; $n = 7$; $103.2 \pm 15.7\text{kg}$, $43.3 \pm 5.8\text{yr}$), exercise training and placebo (EP; $n = 7$; $99.1 \pm 12.8\text{kg}$, $44.0 \pm 7.6\text{yr}$), or exercise training and metformin (EM; $n = 7$; $93.9 \pm 18.5\text{kg}$ and $49.3 \pm 7.0\text{yr}$) group. Individuals were provided 2000mg/d of M or P and the effects of a 12 week supervised training program consisting of aerobic (3 d/wk 45 min/d at 70% heart rate max) and resistance exercise (2 d/wk 70% 1-RMmax) on cardiovascular health markers were assessed. Markers included: body weight (BW), body fat % (BF), systolic (SBP) and diastolic (DBP) blood pressure. The student's t-test was used to make statistical comparisons between groups. Outcomes are reported as mean \pm SEM. Results: Compared to P ($4.97 \pm 1.11\text{mmHg}$), M and EP lowered SBP (M = $-7.34 \pm 0.86\text{mmHg}$ and EP = $-5.32 \pm 1.28\text{mmHg}$); ($p < 0.05$). Compared to P ($9.70 \pm 0.79\text{mmHg}$), all interventions lowered DBP (M = $-3.53 \pm 1.58\text{mmHg}$; EP = $-7.09 \pm 0.815\text{mmHg}$; EM = $-2.32 \pm 1.37\text{mmHg}$; $p < 0.05$). EM and M lowered BW by approximately 3.5kg and this was significantly more than either EP or P ($p < 0.05$), indicating that metformin is effective at lowering BW. However, EM and EP, compared to M and P, were more effective at lowering BF (EM = $-1.75\% \pm 0.3$ and EP = $-2.31 \pm 0.3\%$ vs. M = $0.1 \pm 0.2\%$ and P = $-0.8 \pm 0.3\%$; $p < 0.05$), suggesting that exercise primarily reduces body fat. Conclusions: These data show that exercise and metformin both have cardio-protective effects. Interactions between exercise and metformin are complex, and combining them may not be more effective to generate favorable cardiovascular health changes compared to either treatment alone. In addition to my faculty sponsor, Dr. Barry Braun, I would also like to acknowledge and thank my co-sponsor Steven K. Malin.



405 Auditorium 1:20-2:20 Board 31

Amanda Libertine

Patty Freedson (Faculty Sponsor)

Department of Kinesiology, UMass Amherst, Amherst, MA, 01003

Self-Reported Sitting Time Questionnaires do not Correlate with Objectively Measured Sitting Time

Introduction: Sedentary behavior (SB) is associated with an increased risk for a number of adverse health outcomes. Self-report is a common means to measure SB however; participants may not accurately recall sedentary behaviors. Purpose: To examine the relationship between self-reported SB and objectively measured SB. Methods: 18 overweight (BMI=33.7+5.96 kg/m²) office workers (age=46.2+10.20 years) wore an activPAL™ (AP) accelerometer for two weeks. This monitor recorded time spent sitting/lying, standing or stepping. Participants filled out the Sitting Questionnaire (SQ) and the Focus Questionnaire (FQ) to assess sitting time. Self-reported sitting time from the SQ and the FQ were compared to objectively measured sitting time from the AP for work and non-work days each week using Pearson's product-moment correlation analyses. Results: Correlations between sitting time from SQ and FQ for work and non-work days for both weeks ranged from $r = 0.07$ to $r = 0.54$. Correlations between sitting time from SQ and AP for work and non-work days for both weeks ranged from $r = -0.31$ to $r = 0.35$. Correlations between sitting time from FQ and AP ranged from $r = -0.02$ to $r = 0.62$. Discussions: Self-report measures are poorly correlated with objective measures of SB. Furthermore, the SQ overestimated sitting time by an average of 5.59 hours while the FQ underestimated sitting time by an average of 3.44 hours. Researchers should use caution when comparing sitting time across studies that use different self-report measures. When possible objective monitors should be used to assess SB.



406 Auditorium 10:45-11:45 Board 26

Bailey Sanders

Patty Freedson (Faculty Sponsor)

Department of Kinesiology, UMass Amherst, Amherst, MA, 01003

Effect of Playing Experience on Energy Expenditure of College Students
Playing Wii Tennis

INTRODUCTION: Although physical activity (PA) reduces the risk of many chronic diseases, few adults participate in regular PA. Active video games (AVG) such as Wii Tennis combine exercise and entertainment and may encourage inactive people to engage in PA. However, if the benefits of PA are diminished as an individual becomes more skilled, AVGs may not be a practical means for acquiring daily PA. **PURPOSE:** The purpose of this study was to compare the exercise effects of experienced (EX) vs. inexperienced (IN) Wii Tennis players in order to determine whether AVGs are a valid source of daily PA. **METHODS:** Twenty subjects (mean \pm SD: age 20.8 \pm 4.2 years, height 170.1 \pm 8.9 cm, weight 71.4 \pm 16.8 kg) volunteered to play a 20 min bout of Wii Tennis. Ten EX players began playing Wii at an advanced level of 1000 points and 10 IN players at 0 points. Energy expenditure (EE) and heart rate (HR) during the game were measured using a portable metabolic unit. **RESULTS:** The mean EE of EX (8.5 ml/kg/min) and IN (8.5 ml/kg/min) players was not significantly different ($p=0.98$). Neither EX nor IN players achieved the minimal requirements for moderate-to-vigorous PA of 150 kcal per 30 minutes (IN = 81.6 kcal/30min, EX = 93.4 kcal/30min). **CONCLUSION:** While the exercise benefits of Wii Tennis are not significantly less for participants with greater playing experience, neither EX nor IN players achieved moderate intensity of PA playing Wii Tennis.



407 Auditorium 1:20-2:20 Board 34

Emily Seery

Jane Kent-Braun (Faculty Sponsor)

Department of Kinesiology, UMass Amherst, Amherst, MA, 01003

Physical Activity and Sleep Quality in Older Adults

KINESIOLOGY PHYSICAL ACTIVITY AND SLEEP QUALITY IN OLDER ADULTS

Emily Seery (Jane Kent-Braun) Department of Kinesiology, University of Massachusetts, Amherst 01003 Previous research suggests a positive relationship between physical activity and sleep quality. Also, sleep quality is believed to deteriorate with aging. The purpose of this study was to further explore the relationship between habitual physical activity levels and the effect of sleep quality in older populations. Eight healthy, community-dwelling subjects, ranging in age from 65 to 81 years old, were recruited from a larger study of skeletal muscle fatigue in older adults. Daily physical activity was quantitatively measured by an ActiGraph (ActiGraph™ LLC, Pensacola, FL) accelerometer worn over a ten-day period. Sleep quality was assessed using the Pittsburgh Sleep Quality Index (PSQI) questionnaire. The mean sleep quality score was 4.5 ± 2.20 . Half ($n=4$) of the subjects reported poor sleep quality, as evidenced as evidenced by a PSQI score of greater than five. In addition, overall physical activity counts per day ($197.0E3 \pm 122.2E3$) were low, with zero minutes spent in moderate to vigorous activity. A significant positive relationship between total physical activity counts and sleep quality was found ($r^2 = 0.57$), such that individuals with higher physical activity counts reported better sleep quality. The study results suggest that higher physical activity counts of older populations may correspond with better sleep quality. Physical activity may be recommended to older adults as a sleep aid to promote improved quality of sleep.



408 Auditorium 1:20-2:20 Board 26

Abbie S Marrale, Brett M Merrill, Dillon McKenna, Emily E Irving, Kevin Kinnard, Dani Steilen, Sofiya Alhassan (Faculty Sponsor)
Department of Kinesiology, UMass Amherst, Amherst, MA, 01003

Energy Cost of Zumba Dancing in Mothers and Daughters

Abstract: Increased prevalence of physical inactivity in pre-adolescent girls has been related to their lack of physical activity (PA) role models and enjoyment of traditional PA. The utilization of mothers as PA role models and non-traditional activities such as Zumba dancing has been proposed as a viable means of increasing PA in girls. However, it is unknown whether Zumba dancing meets the recommended guidelines for moderate-to-vigorous physical activity (MVPA). Purpose: To determine if the energy cost of Zumba dancing satisfies the recommended guidelines for MVPA for mothers and daughters. Methods: Five mother-daughter pairs were recruited to participate in a Zumba dance routine. A portable metabolic analyzer and heart rate monitor were used to assess PA intensity (METs and heart rate) and an accelerometer, worn on the hip, was used to measure PA levels (counts/min). Results: Participants were classified as either mother ($n=5$, age= 40 ± 6.7 yrs, BMI= 22.3 ± 1.9 kg/m²) or daughter ($n=5$, age= 8.4 ± 1.1 yrs, BMI= 17.5 ± 2.2 kg/m²). The average METs and heart rate were 8.4 ± 1.6 METs (mothers: 7.3 ± 0.9 METs; daughters: 9.6 ± 1.2 METs) and 129 ± 20 bpm (mothers: 134 ± 26 bpm; daughters: 151 ± 7 bpm). Mothers and daughters PA levels (counts/min) were 6719 ± 1000 and 7073 ± 936 , respectively. Discussion: Zumba dancing is classified as vigorous intensity PA according to the metabolic data (≥ 7 METs for children and ≥ 6 METs for adults) and the accelerometer data (>803 counts/min for 8 yrs and >1952 counts/min for adults). This confirms that the energy cost of Zumba dancing satisfies the recommended guidelines for MVPA, therefore can be utilized in interventions designed to increase MVPA.



409 Auditorium 1:20-2:20 Board 32

Laura Thistle

Barry Braun (Faculty Sponsor)

Department of Kinesiology, UMass Amherst, Amherst, MA, 01003

Effects of Exercise Training and/or Metformin on Body Weight and Food Intake in Men and Women with Prediabetes

Introduction: Weight loss is suggested to be a key mechanism for opposing type 2 diabetes. Metformin causes slight weight loss by reducing food intake, and exercise can favor weight loss if the energy expended is not compensated for by increased caloric intake. Purpose: To examine the effects of exercise and/or metformin on food intake, appetite, and body weight after 12 weeks of treatment in individuals with prediabetes. We hypothesized that the combination of exercise and metformin would reduce body weight more than either treatment alone and the reduced body weight would be related to lower caloric intake. Methods: Twenty-seven participants (10M, 17F) with prediabetes participated in a double-blind, longitudinal study design. Subjects were randomized to a placebo (P; n=6; 89.6 ± 17.9kg; 47.7 ± 12.0yr), metformin (M; n=7; 103.2 ± 15.7kg; 43.3 ± 5.8yr), exercise training and placebo (EP; n=7; 99.1 ± 12.8kg; 44.0 ± 7.6yr), or exercise training and metformin (EM; n=7; 93.9 ± 18.5kg; 49.3 ± 7.0yr) group. Individuals were provided 2,000mg/d of P or M and completed a 12 week supervised aerobic and resistance exercise-training program. Body weight (BW), 3-day food intake records, appetite questionnaires, and habitual physical activity (PA) were collected at baseline, 6-week, and 12-week. Data were compared within and between groups using a 2 way-repeated measures ANOVA and were reported as mean ± SEM. Results: EM and M lowered BW by approximately 4%, more than either EP or P (-3.7 ± 0.35kg and -4.1 ± 0.38kg vs. -0.37 ± 0.42kg and -0.18 ± 0.37kg; p <0.05), indicating that metformin is effective at lowering BW. Compared to baseline, EM reduced caloric intake at week 6 (-453.3 ± 76.4kcal; p <0.05) and week 12 (-474.1 ± 76.4kcal; p <0.05). Compared to baseline, M showed a decreasing trend in caloric intake that was not statistically significant (p=0.10). Conclusion: These data suggest that metformin, with or without exercise, lowers body weight and is, in part, related to reductions in food intake. Combining exercise with metformin is more effective at causing weight loss than exercise alone. Further analysis will determine the relationship between weight loss and benefits to metabolic health in these participants. * In addition to my faculty sponsor Dr. Barry Braun, I would also like to acknowledge Steven K. Malin, MS and Sung-eun Choi, PhD for their contributions to this project.



410 Auditorium 10:45-11:45 Board 28

Ashley Wojnarowski

Teresa Fitts (Faculty Sponsor)

Department of Kinesiology, Westfield State College, Westfield, MA, 01086

The Case of Judi-Pitfalls and Possibilities for Exercise Adherence

The purpose of this case study was to examine the unique exercise adherence challenges and opportunities of a middle-aged female who had undergone knee replacement surgery. According to the Centers for Disease Control and Prevention, 16% of adults aged forty-five and older will develop symptomatic osteoarthritis in the knee joint. Riihimaki, Heliovaara, and Suomalainen (2001) found that moderate recreational physical exercise is associated with a decreased risk of knee joint osteoarthritis. In a Fitness Assessment and Prescription class, students were paired with a member of the campus community to assess and develop personalized fitness programs. An initial assessment was obtained using the Microfit Assessment System. Student-partners developed and tailored a program that would best benefit the member while being mindful of client goals. Judi showed great enthusiasm from the start of the program and was able to thrive in her goals. Judi was successful in starting her workout program, incorporating strength training into her daily workout, and attending at least two spinning classes a week. The case of Judi provides an example of a successful experience of a middle-aged female who had undergone knee replacement surgery engaging in a structured exercise program. Service-learning opportunities such as this allow students an opportunity to develop fitness guidelines for community individuals beyond their peer group.



Legal Studies

411 Room 101 10:45-11:45 Board 44

Abigail Brietzke

Mary Kay Cordill (Faculty Sponsor)

Department of Sociology, Cape Cod Community College, West Barnstable, MA, 02668

Background Checks a Step Toward Gun Control

Abigail Brietzke Background Checks a Step Toward Gun Control -- FINAL
Firearms are weapons that cause an average of 1,400 accidents every year, claiming 30,000 lives per year. Firearms can cause bodily harm and danger to a person or other people. In the United States anyone eighteen years of age can purchase a gun. Although that may seem shocking it is more disturbing that no matter who the person is or what they have done they are still able to obtain a firearm. However 31 states require gun owners to take training courses to obtain a permit for their firearm. There are loopholes and ways of getting around registering a gun and purchasing a gun; most loopholes are present in gun shows. At guns shows anyone can walk in and purchase a gun, including criminals. The Brady Campaign works to control who can purchase a gun. This movement is incredibly important to the betterment of society. The Brady Campaign advocates states require anyone purchasing a firearm to receive a background check. This research project will explore the campaigns of James and Sarah Brady and other activists, why they started and how effective they have been. The project will also explain why background checks are vital for society and how effective the social movement to establish them have been, as well as if background checks have minimized accidents and deaths due to firearms.



412 Room 101 10:45-11:45 Board 55

Elsa John

Luke Salisbury (Faculty Sponsor)

Department of Literature, Bunker Hill Community College, Boston, MA,
02129

Society Restriction of Information on the Internet

In many countries, society is highly dependent on the internet as a source of information. However, many individuals and countries; either government agencies or educational institutes have placed restrictions on information on the internet. For this reason, this project studied the consequences of such restriction, which society supports or do not support. This project researched China's government restricting the use of Google and educational institutes blocking access to different internet sites. Another important focus of this project, was research on "types of information society restricts and whether there should be restriction on this information or not." This research was done using government journals, magazine articles and library resources. Conducting such research provided more knowlege and understanding of different internet restrictions. The interent is the prime source of information, so restricting the information will have many repercussions.



413 Room 101 10:45-11:45 Board 54

Lance Kropp

Luke Salisbury (Faculty Sponsor)

Department of Literature, Bunker Hill Community College, Boston, MA,
02129

Development of Laws Pertaining to Human Research Subjects

As human research sciences developed, ethical questions regarding human rights arose and needed to be addressed. Research was conducted to determine how major events over the past century shaped the laws of human research in regards to ethics. By examining these landmark events in the history of human research and the policies created in response to them, we see how laws have developed to protect people from unethical scientific practices. In most of the cases examined, strong policy responded to unethical methods. However, with limited foresight to future developments of human research sciences, policy can only be reactive.



Literature

414 Auditorium 3:50-4:50 Board 7

Cassandra Taylor

Joan Brenner (Faculty Sponsor)

Department of Literature, Bunker Hill Community College, Boston, MA,
02129

Mythology, the Manhattan Project, and the Human Genome A Retrospective Look at the Reoccurring Theme of Forbidden Knowledge Throughout History

Is there knowledge that should not be explored? This is a question that has repeated itself throughout the ages. Stories such as Pandora's Box, King Oedipus, Frankenstein, and Adam and Eve explore the idea of human curiosity and the results of the quest for knowledge. A review of mythological literature and the Bible will look at cautionary tales, while historical documents and scientific journals will give modern day references, such as the Manhattan Project and the discovery of the Human Genome, to explore the inspiration, motivation, and consequences of the pursuit for knowledge. This research will examine how throughout history mythology and the Bible have cautioned humanity to beware what it seeks. The project will attempt to determine if we indeed possess Oedipus's curiosity, and are we ignoring the signs that may lead to our ultimate demise.



Management

415 Room 101 10:45-11:45 Board 42

Amy L Banks

Sean C O'Leary

Danielle Leshinski

Karen Druffel (Faculty Sponsor)

Department of Economics, Framingham State College, Framingham, MA, 01702

The Functions of a Mentor in an Undergraduate Mentorship Program

The objective of our proposed research is to examine and interpret how industry professionals define their roles and functions as participants in an undergraduate mentorship program. We believe that this research will help support current mentorship programs by identifying the primary functions performed by mentors. By establishing a more concrete definition of these functions, programs may be marketed more clearly and more students will be encouraged to participate. Our research methods will include a survey which will collect data on the perceived functions of mentoring. We propose to obtain approximately 240-300 responses from a population of Framingham State College faculty and students, along with current and potential mentors involved in the Framingham State College Mentorship Program. The survey will be pooled, and the results will be analyzed by multiple groups; however, our research will only analyze and provide results from a mentor's perspective. The method for categorizing and analyzing the data will be the popular statistics program SPSS. We anticipate that our results will confirm that mentors believe that their roles include but are not limited to providing advice and guidance in the areas of networking skills, resume building, interview techniques and general support to aid the student in obtaining the confidence to define a career path. It should also be noted that we expect that the surveys will show that a mentor's perception of their purpose in such a program is complex and varies by experience. In conclusion, we hope to shed new light upon the varied functions of mentors in order to maximize our understanding of the dynamic of the mentor/ mentee relationship.



416 Room 101 10:45-11:45 Board 43

James M Salerno

Pasha Pourghasemi

Rafael Silva

James Sullivan

Karen Druffel (Faculty Sponsor)

Department of Economics, Framingham State College, Framingham, MA,
01702

Student Benefits of the Academic Mentoring Process

This study examines student perception regarding the mentorship experience in an academic setting with industry mentors. Specifically, the study seeks to identify particular functions expected by undergraduate student protégés of their professional mentor. The student population will be drawn from Framingham State College and mentors will be drawn from a multitude of surrounding businesses. Data will be gathered through a survey with questions focused on three constructs of mentor responsibility based on prior research. The three constructs examine the extent to which a mentor's function is to (1) assist in a job search, (2) develop a protégé's professional skills, or (3) provide emotional support and encouragement. Responses will be rated quantitatively and analyzed using SPSS. Participants surveyed will include a combination of over 300 students, mentors, and academic faculty. Ultimately, this will provide data which can explore the difference in perceptions between the three groups. This information can be further used to improve the Framingham State College mentorship program by increasing student participation through improved marketing and a reduction in mentor/mentee perception dissonance.



417 Room 101 10:45-11:45 Board 41

Cassandra Walsh

Adam Sulkowski (Faculty Sponsor)

Department of Management, UMass Dartmouth, N. Dartmouth, MA, 02747-2300

A Greener Company Makes For Happier Employees More so than Does a More Valuable One: A Regression Analysis of Employee Satisfaction, Perceived Environmental Performance and Firm Financial Value

This paper tests two hypotheses. The first hypothesis is that employee satisfaction is positively impacted when a company is perceived as performing well environmentally. The second hypothesis is that employee satisfaction is positively impacted by firm financial performance. To test these hypotheses, the relationships between perceived environmental performance, financial performance and employee satisfaction were tested using regression analysis. The results indicate a significant positive relationship between employee satisfaction and level of perceived environmental performance. This study does not find a significant relationship between employee satisfaction and firm financial value. The practical implication for managers is that investments in environmental performance and related communications are important for reasons beyond those that are more commonly discussed, such as external stakeholder relations. This study suggests that environmental performance and related communications should be an integral part of human resources management strategies to recruit, motivate and retain the best talent. For scholars, this study suggests future directions for research in, for example, determining the causal mechanisms between actual environmental performance, perceptions of relative environmental performance and employee satisfaction.



Mathematics & Statistics

418 Auditorium 2:35-3:35 Board 30

Adelaide Hopkins

Dana Fine (Faculty Sponsor)

Department of Mathematics & Statistics, UMass Dartmouth, N. Dartmouth, MA, 02747-2300

Graph Theory, Social Networks and Counter Terrorism

A comprehensive history and summary of applications of Social Network Analysis to terrorist networks is given. The implications in this context of network measures such as degree centrality, betweenness centrality, network centralization, and network reach are explored. Al Qaeda is presented as an example. Data for the structure of this network were mined from recent news articles, history books, and government publications. Techniques from graph theory, combinatorics, dynamic network analysis, and meta-analysis, including the above network measures, are applied to the Al Qaeda network. The results are interpreted in human, political, and counter-terrorism terms.



Mechanical Engineering

419 Auditorium 2:35-3:35 Board 28

Airton da Silva, Jr

Sundar Krishnamurty (Faculty Sponsor)

Department of Mechanical Engineering, UMass Amherst, Amherst, MA, 01003

Active Structural Control of Offshore Wind Turbines

Offshore wind turbines are becoming a viable and attractive means of producing electricity. However, as the need to build larger wind turbines further out at sea increases, the control of dynamic responses induced by extreme environmental loads becomes critical to the performance of the turbine system. Active structural control approaches are utilized to model wind turbine systems for the barge, monopile, tension leg platform (TLP), and spar buoy type foundations with limited degrees of freedom (DOF). Reductions to the dynamic responses of these structures are achieved by incorporating a single degree of freedom tuned mass damper (TMD) system inside the nacelle of the turbine model. Two specific models for hydraulic and DC motor actuators are developed and the effects of control-structure interaction (CSI) and actuator/sensor dynamics in protective system designs are considered. The parameters of the offshore wind turbines equipped with active TMD systems are tuned accordingly to minimize the response of the structure using MATLAB/Simulink and a modified version of "FAST," known as "FAST-SC." Validation of each wind turbine model is presented by modeling the structural behavior of the system and comparing it with the simulation results obtained in MATLAB/Simulink. Simulation results indicate that the structural response of the offshore wind turbine can be significantly improved by utilizing active structural control approaches.



420 Auditorium 2:35-3:35 Board 24

Russell Diatalevi

Sundar Krishnamurty (Faculty Sponsor)

Department of Mechanical Engineering, UMass Amherst, Amherst, MA,
01003

Design Comparison Based on Reliability Analysis

This project serves as a demonstration of the value that reliability analysis has in the selection of proposed designs. Part reliability is calculated based on the number of standard deviations away from the mean strength the average maximum stress is, assuming normal distributions of both load and strength (not considering manufacturing and process reliability). To demonstrate this analysis, two separate tailgate handle designs, one from a 2000 Ford Ranger, a part that had been known to fail, the second from a 2000 Toyota Tacoma, were analyzed, and the reliability of each handle was calculated using this method. Utilizing modern engineering tools such as Computer Aided Design (CAD), as well as Finite Element Analysis (FEA), and making reasonable approximations (such as the average pull force of a human, materials used and their standard deviations), it was possible to calculate the reliability of each design. Small modifications were then proposed for each design that drastically increased the calculated reliability of each, without altering material properties or radically changing the original design. This analysis allows the engineer to consider the affects a design change will have on a product's reliability, before the product is manufactured.



421 Auditorium 2:35-3:35 Board 25

Joseph A Bliss, Joseph Fox, Jr. , Sundar Krishnamurty (Faculty Sponsor)
Department of Mechanical Engineering, UMass Amherst, Amherst, MA,
01003

Optimal Shape of a Bicycle Bottom Bracket – Crank Connection

In the bicycle manufacturing industry, the shape of every component must be designed for maximum performance. This is especially true for the bottom bracket-crank insert connection, which transfers energy from the rider's foot to the wheels and is often subjected to a great deal of stress. Optimizing this design allows for a smaller, cheaper, and more efficient crank, and better overall bike performance. This study was conducted to determine the optimal shape for a bottom bracket-crank connection on a bicycle. This was determined by conducting a series of stress simulations using ANSYS Workbench on 3D CAD models of cranks with varying connection shapes. Three classes of connections (star, spline, convex polygon) were analyzed for cranks identical in every other way. Because the connection shape was the only independent variable, this design project may also have applications in other similar crank-insert assemblies, such as a wrench-bolt connection. It was discovered that the optimal number of sides on a polygon shaped insert is six, while the optimal number of points on a star shaped insert is 11. Analysis regarding spline-shaped connections has yet to be completed. Additionally, a manufacturability analysis is currently underway to determine if these results can be applied to real-life products. The results of this analysis will eventually give designers a standard for which shape is most cost-effective, strong, and easily manufactured, allowing them to devote more resources to optimizing other smaller factors such as pedal design or crank length and material.



422 Auditorium 2:35-3:35 Board 27

Benjamin J Murphy

Stephen McKinley

Sundar Krishnamurty (Faculty Sponsor)

Department of Mechanical Engineering, UMass Amherst, Amherst, MA,
01003

Studying the Effects of Bearing and Thread Placement in Bicycle Hubs

Fatigue analysis is important for the design of shafts and axles because they inherently create oscillating loads and reverse bending within the component. By considering the effects of the fatigue on axle systems, failure of individual components can be more accurately predicted and prevented. This study of load bearing bicycle axles and hubs examines the varying designs currently used in high-end bicycles in terms of their reliability and weight through computerized finite element analysis. The research has been completed using ANSYS to accurately model the system theoretically. After studying the finite element analysis of the axles and hubs as complete systems they can be redesigned to optimize weight and performance. Through this research, a better method for transferring bearing loads through the hub has been modeled by hybridizing several modern designs. Typically, an even number of bearing races are used to distribute rider weight and sudden impact reaction forces; however, the optimal design found through this research included three bearing races places along the axle to minimize the oscillating fatigue. The new design prevents failure by minimizing flexion between the cassette and hub thereby reducing lateral loads on the bearing races.



423 Auditorium 2:35-3:35 Board 26

James O'Connor

Susan McPherson (Faculty Sponsor)

Department of English, Quinsigamond Community College, Worcester, MA,
01606

Computers vs. Pilots: The Role of Automation in the Future

Since the birth of aircraft automation in the 1980s, its purpose has been to nullify the human factor in aircraft accidents. But today's automation has become so comprehensive that pilots are practically passengers on their own flights. This takeover of computers has led to pilot complacency, which in turn has been the cause of numerous recent aircraft accidents. Thus the dilemma: Is the answer more pilot control or more computer control? While aircraft automation is necessary for future flight, it must be engineered to keep pilots aware and involved. Moreover, with well designed aircraft automation, air travel will double in the next decade as predicted. This project explores the role of aircraft automation in the future. Sources include interviews with pilots and engineers as well as data from aviation magazines such as Aerospace America.



424 Auditorium 2:35-3:35 Board 33

Gregory Scantlebury

Sundar Krishnamurty (Faculty Sponsor)

Department of Mechanical Engineering, UMass Amherst, Amherst, MA,
01003

Automobile Bumper Brackets

When a car is in an accident, there needs to be places for the energy of the impact to be absorbed so the occupant's risk of injury is reduced. In the Toyota Yaris, the right and left side bumper brackets are sacrificial crumple zones to absorb energy. Along with reducing the trauma to the occupants, the bracket can be replaced and the car is less likely to have sustained "car totaling" damage such as a bent frame in a minor accident. How is this Toyota Yaris bumpers different from other vehicles? There are many other types of vehicles out there to compare. The comparisons that I would like to do are between a Yaris and a car of similar size and weight, as well as a larger vehicle and a pick up truck. My hypothesis is the smaller cars need the bracket to act as a crumple zone to absorb energy where as a larger vehicle has a large enough area between the occupants and front the crumple zones can be elsewhere. In the case of a pickup truck, the bumpers need to be more rigid than in a car. I plan to test my hypothesis by doing strength analysis on the bumper brackets of a Yaris, a similar small car, a large car and a pickup. Engineering modeling and advanced finite element analysis will be used to generate and carry out strength comparison studies. The results would be used to show that smaller cars have stronger bumper brackets to facilitate greater deflection, and thus, absorb more energy.



425 Auditorium 2:35-3:35 Board 29

Mark Greene, Nick Stangas , Sundar Krishnamurty (Faculty Sponsor)
Department of Mechanical Engineering, UMass Amherst, Amherst, MA,
01003

Study of Two-Wheeled Tractor Drive Assemblies

This study examined the drive-assembly design of two-wheeled tractors. The purpose of this research was to compare the reliability and ease of use of the different designs. Two-wheeled tractors are commonly used in conjunction with attachments such as mowers, brush cutters, rotary tillers, and snow throwers. To understand the drive-assembly design progression over time, three older models manufactured by Ariens, Toro, and DR Power were examined. These were then compared to five current models sold by Ariens, John Deere, and BCS. All of the manufacturers used variations of chain, friction disk, and gear drive systems, combined with various methods to achieve a locking differential action. Differential action enables the wheels to rotate at independent angular velocities, and increases the maneuverability of the machine. Most differentials achieve this action at the expense of reduced traction as they enable one of the wheels to spin freely on slick surfaces. Two-wheeled tractors engaged in tasks such as snow removal, brush cutting, and soil tilling cannot afford to have this cost of reduced traction. This balance of maneuverability and traction poses an inherent design challenge which the manufacturers in this study overcame in various ways. Traction was improved through the use of lynch pins, wheel locks, clutch gears, meshing gears, and bell clutches. All of these methods function by disabling the differential action of the drive assemblies, which makes turning the machine much more difficult. This causes designs that are easily enabled and disabled to be preferable. Pugh's method was utilized to rate each of these designs in the categories of reliability and ease of use, revealing several general trends. The older designs were highly reliable but lagged when it came to ease of use while the higher-end new designs showed improved ease of use over their predecessors, with little reduction in their reliability.



Microbiology

426 Auditorium 2:35-3:35 Board 20

Felicia Dupras

Eugene Muller (Faculty Sponsor)

Department of Biology, Framingham State College, Framingham, MA, 01702
Assessment of the Effectiveness and Potential Negative health effects of the Antimicrobial Agent, Triclosan, in Consumer Products

The antimicrobial, triclosan, is a prominent antibacterial agent found in consumer products, from liquid soaps to cutting boards. Despite the longstanding use and alleged effectiveness of this agent, recent studies claim that triclosan not only lacks additional health benefits but also has potential negative health effects. The purpose of this systematic review was to assess the studies that have examined the efficacy of products containing triclosan, compared to plain soap, and to determine if alleged benefits this agent provides outweigh its potential negative effects. This review was conducted by searching for English-language articles in the Science Direct and Access Science data base using relevant keyword combinations for articles published between 1990 to 2010. The results of this research indicated that regular consumer soaps containing triclosan were no more effective at preventing the transmission of disease causing bacteria than regular soap and water. A series of studies also demonstrated that these compounds can disrupt hormone functions in animals and are a worldwide environmental contaminant. Due to the lack of evidence supporting the additional benefits this antibacterial agent is claimed to possess, triclosan containing products should be removed from consumer products until research can conclusively demonstrate that these agents have a greater efficacy than regular soap, are not harmful to humans and the environment, and do not contribute to antibiotic resistance. Additionally, further evaluation and reform of governmental regulation on claims and advertising for antibacterial products are needed.



427 Auditorium 2:35-3:35 Board 22

Stephen Godin

Jeffrey Blanchard (Faculty Sponsor)

Department of Microbiology, UMass Amherst, Amherst, MA, 01003

Creating a Metabolic Map of a Model Biofuels Microbe

The goal of this project is to create a functional, highly-accurate map of the metabolic capabilities of the ethanol-producing microbe *Clostridium phytofermentans* (Cphy). A metabolic map serves as a convenient way to organize a knowledge base about an organism and to help with hypothesis formation by identifying holes in that knowledge base. Using genbank and NCBI annotation files for Cphy, we can use the software suite Pathway Tools to construct a metabolic map very quickly. By reading the annotated function of each gene, as well as using a fairly-complex BLAST-comparison algorithm, Pathway tools is able to make a semi-accurate model in less than a day. Unfortunately, due to incomplete annotations extensive manual curation is necessary to fill in missing genes, remove incorrectly annotated genes, and to examine the model to compare the predicted metabolism to experimentally determined data. After several months of manual curation and editing, the Cphy metabolic map reflects the majority of experimentally validated data concerning Cphy and is useful for qualitatively predicting metabolic end products. The metabolic reconstruction has also identified several metabolic pathways which are missing critical genes. This seems to suggest the presence of unstudied isozymes in the organism, alternative metabolic pathways, or a poor annotation of the genome. These results are useful for pin pointing areas where the knowledge base begins to break down and where new research could be focused to expand upon our understanding of this organism.



428 Auditorium 2:35-3:35 Board 21

Maya Khasin

Michele Klingbeil (Faculty Sponsor)

Department of Microbiology, UMass Amherst, Amherst, MA, 01003

POLIA, a Putative Mitochondrial-Targeted DNA Repair Polymerase in African Trypanosomes

Trypanosoma brucei is the protozoan parasite responsible for the human disease African sleeping sickness and a related disease in livestock called nagana. There is no vaccine and the disease is fatal if left untreated. *T. brucei* is an early diverging eukaryote and is distinguished from all other eukaryotes by a mitochondrial genome called kinetoplast DNA (kDNA) that is a network containing thousands of catenated DNA molecules (minicircles and maxicircles). This kDNA network is essential for parasite survival and represents about 10% of the total cellular DNA content, making kDNA an ideal system to study mitochondrial DNA repair. Additionally, in striking contrast to other eukaryotic mitochondria that contain just one DNA polymerase (pol), pol gamma, *T. brucei* contains at least six mitochondrial polys for replication and repair. Four of these are family A DNA polymerases related to bacterial DNA pol I. While RNAi knockdown experiments demonstrated non-redundant essential roles for POLIB, POLIC, and POLID, the fourth enzyme, POLIA, was not essential under normal growth conditions. However, RNAi of POLIA under sublethal doses of ionizing radiation resulted in kDNA fragmentation while control populations recovered from the DNA damage, suggesting that POLIA might function as a kDNA repair polymerase. To test this hypothesis we will generate double knockout (DKO) cell lines that do not express POLIA protein, and utilize a transgenic cell line that inducibly overexpresses an epitope tagged POLIA protein. If POLIA participates in kDNA repair, the DKO cells will recover more slowly in response to ionizing radiation than control cells with endogenous levels of POLIA expression. Likewise, cells overexpressing POLIA will recover faster in comparison to controls. DKO cells are currently being confirmed by Southern blot. POLIA overexpression was confirmed by western blotting and there is no apparent difference in growth rate between the induced and uninduced cell lines. Growth under DNA damaging conditions is currently being tested.



429 Auditorium 2:35-3:35 Board 19

Jesse Robillard

Ann Billetz (Faculty Sponsor)

Department of Biology, Mass College of Liberal Arts, North Adams, MA,
01247

Identification of Bacteria Associated with the Sea Anemone Aiptasia Pallida

Symbiotic relationships have been shown to be crucial for ecosystem stability; this is especially evident in marine ecosystems. In this study pure cultures of bacteria have been isolated and cultivated on marine agar from the cultivated sea anemone *Aiptasia pallida*. Gram reaction, morphology, and arrangement were determined for each pure culture. DNA was then isolated and subjected to polymerase chain reaction to amplify a region of the 16S rDNA. DNA sequencing will provide the genera for the bacteria present in *A. pallida*. Revealing specific bacterial populations may give insight into how these bacteria interact with *A. pallida*. The bacteria that reside within the anemone may be crucial for survival by preventing outside infection or indirectly providing nutrients for the anemone. Further study into what properties these bacteria possess will give greater insight into the possible role of this symbiotic relationship.



430 Auditorium 2:35-3:35 Board 17

Ankit Shah

Shuowei Cai (Faculty Sponsor)

Department of Chemistry, UMass Dartmouth, N. Dartmouth, MA, 02747-2300

Antibacterial Properties of Baicalin (Radix scutellariae) and Berberine (Rhizoma Coptidis) for Staphylococcus aureus, Escherichia coli and Bacillus atrophaeus

Several medicinal herbs, including Radix scutellariae and Rhizoma Coptidis have been used in Asia for thousands years to treat and prevent common colds and flu; these herbs have been reported to depict antibacterial and antiviral functions. In the current research, to validate the antibacterial activity of baicalin (Radix scutellariae) and berberine (Rhizoma Coptidis), their antibacterial activity were tested for three bacteria: Staphylococcus aureus (ATCC# 27217), Escherichia coli 0157:H7 (ATCC# 43888) and Bacillus atrophaeus. Minimum inhibition concentrations of baicalin and berberine for each of the three types of bacteria were determined via micro-broth dilution assay; ampicillin was used as a control. Overall, baicalin and berberine showed strong inhibition toward the gram positive bacteria (S. aureus/B. atrophaeus) and weak inhibition for the gram negative bacterium (E. coli).



431 Auditorium 2:35-3:35 Board 18

Conner Thorpe

Guixin He (Faculty Sponsor)

Department of Microbiology, UMass Lowell, Lowell, MA, 01854

Investigation of Antimicrobial Resistances of Bacterial Isolates Collected From a Clinical Setting

Antibiotic resistance is an issue of great importance, as infections with antibiotic-resistant bacteria generally result in longer hospital stays and increased mortality of infected patients. Disinfectants are frequently used in hospital and household settings as a common means of decontamination, and are currently suspected to play a significant role in inducing bacterial and antibiotic resistances. It was the aim of this study to research the relationship between the widespread use of disinfectants and the current rise of antibiotic-resistances expressed by many bacteria, in hopes of establishing a plausible cause-effect correlation. Our investigation into these causes began with the collection of 28 isolates from a medical setting and a subsequent investigation into the various antimicrobial and disinfectant-related resistances these organisms possessed. All collected isolates were cultured on nutrient agar for pure isolates and identified via standard morphological and biochemical procedures. The bacteria were cultured on media containing various levels of common disinfectants (Tricolsan, Benzalkonium chloride and Chlorohexadine gluconate) in order to determine resistances/susceptibilities, and then tested for resistances to common antibiotics via the Kirby-Bauer Disk Diffusion method. Our results showed varying levels of resistances to both disinfectants and antibiotics, with some isolates exhibiting resistance to all three disinfectants as well as numerous antibiotics. While we feel that these results indicate a possible relationship between the widespread use of disinfectants and the rise of antibiotic resistances, as well as highlight the possible future need of novel disinfectant/antibiotic methods and therapies, more research is still needed to establish a proper relationship.



432 Auditorium 2:35-3:35 Board 23

Dmitry Tokar

James Holden (Faculty Sponsor)

Department of Microbiology, UMass Amherst, Amherst, MA, 01003

Genome-Enabled Analysis of Iron and Sulfur Respiration Near 100°C

Hyperthermus butylicus is an anaerobic sulfur-reducing hyperthermophilic archaeon with an optimal growth temperature range of 95°C to 106°C. We have discovered a novel mode of energy transduction for this organism that uses Fe(OH)₃ as the terminal electron acceptor – reducing ferric iron to ferrous iron. This form of respiration represents a previously unstudied and uncharacterized metabolism in *H. butylicus*. The comparative proteomic and genomic analysis of the sulfur and iron will shed light on the biochemical processes that enable and regulate such metabolisms in the organism. The primary objective of the study is to use genomics-based tools to identify proteins associated with iron and sulfur respiration. In particular, bioinformatics was used to identify putative polyheme c-type cytochromes -- membrane-bound proteins -- which we hypothesize are associated with the iron-reduction pathway in the archaeon. Furthermore, protein gels will be used to compare the proteins used for iron and sulfur respiration. Gel staining and mass spectrometry will enable a comparison of the heme-containing compounds such as c-type cytochromes. Respiratory pathways such as the one found in *H. butylicus* are good candidates to be some of the oldest pathways and are likely to have existed as life evolved on early Earth.



Molecular Biology

433 Concourse 2:35-3:35 Board 74

Katarzyna Piotrowska

Adan Colon-Carmona (Faculty Sponsor)

Department of Biology, UMass Boston, Boston, MA, 02125

Optimization of AhR via Directed Evolution in Yeast Bioindicators

Polycyclic aromatic hydrocarbons (PAH) are carcinogenic, mutagenic and teratogenic chemical compounds that are found in oil, coal, and smoke from fuel combustion. PAHs are highly stable molecules which degrade slowly in the environment and accumulate in living tissue. The aryl hydrocarbon receptor (AHR) is a cytoplasmic PAH-activated transcription factor found in vertebrates including humans. Upon activation, the AhR dimerizes with the homologous ARNT transcription factor and induces transcription of target genes. The ability of AhR to recognize PAHs is routinely used as an indicator of the toxicity and presence of these compounds. This system has been previously introduced into yeast cells to form a convenient PAH assay. There is no evidence that the AhR has evolved to detect PAHs, and, therefore, we hypothesize that the receptor may be sub-optimal for this task. Laboratory directed evolution is a technique of creating gene variants in DNA by inducing random mutations and mimicking meiotic crossover through various in vitro processes, and then selecting for optimal fitness. As in natural evolution, the fit alleles become the progenitors of the next generation of alleles. Our hypothesis states that by employing directed evolution on the ligand binding domain (LBD) of the AhR, it will be possible to increase sensitivity to PAHs, thereby detecting trace levels of those toxic molecules. My current work involves cloning the AhR into appropriate DNA vectors to facilitate directed evolution, as well as integrating the ARNT into the yeast genome.



434 Concourse 2:35-3:35 Board 73

Eedwin G Macharia, Julie E Bollinger, Thao Ngo, Alissa Routhier , Daron Barnard (Faculty Sponsor)

Department of Biology, Worcester State College, Worcester, MA, 01602

Annotation of Three Fosmids on the Drosophila Erecta 3L Chromosome Reveals Conserved Genes

Alissa Routhier, Edwin Mancharia, Julie Bollinger, Thao Ngo, Molecular Biology Fall 2009 (BI371), Daron Barnard D. melanogaster and D. erecta are closely related evolutionarily. There is a considerable amount of homology between the two species in terms of gene location. We have looked at fosmid 19, fosmid 20 and fosmid 42 of the 3L chromosome in D. erecta and compared it with known genes on the 3L chromosome of D. melanogaster to determine if there are conserved genes. PCR was also performed on adult, pupal and larval stages of D. erecta to confirm the results of the annotation and determine if the genes are in fact expressed. The annotation and PCR results revealed three conserved genes: CG15374, Olf413, and Mes2. CG15374 was determined to be a one exon gene located on Fosmid 19. Olf413 was determined to be an 11 exon gene which extends across fosmid 19 and fosmid 20. Mes2 is located on Fosmid 42 and has two isoforms. Based on our analyses, these genes are likely orthologs of the D. melanogaster genes, and at least two have detectable expression at multiple developmental stages.



Nursing

435 Auditorium 10:45-11:45 Board 8

Samantha Austin

Courtney Bradley

Kathy Gramling (Faculty Sponsor)

Department of Nursing, UMass Dartmouth, N. Dartmouth, MA, 02747-2300

Awareness and Utilization of the MyPyramid Module for Health

Children who are overweight have an increased risk of being obese adults (According to the Centers of Disease Control and Prevention, 2009). A study by the Journal of the American Medical Association concluded that as of 2008, 32.2% of adult men and 35.5% of adult women are considered obese (Flegal, Carroll, Ogden, & Curtin, 2010). Concerned about the rising rate of obesity and the associated health risks of developing hypertension, type 2 diabetes, stroke, and some forms of cancer, the U.S. Department of Agriculture issued the MyPyramid module in April 2005. MyPyramid is an updated version of the food pyramid which is designed to teach Americans how to live a healthy lifestyle, and includes guidelines and recommendations for both healthy eating and physical activity. The aim of the present educational pilot is to describe college student awareness and use of the MyPyramid system. The nursing students chose this group of subjects because they are at an age where they can actively change their eating and exercise habits in order to prevent chronic health problems. The method is to administer a pre-test to 30 college age volunteers to test the knowledge of the module. Next, a subgroup of at least five volunteers will be asked to abide by the MyPyramid system for two weeks. This sub group will be provided informational material from the MyPyramid website. At the completion of two weeks, the subgroup will be given a post test to assess the usefulness of the module. The intended outcome is to show the awareness level of college age students regarding the MyPyramid tool for healthy eating and to demonstrate the experience of using a model advanced by The United States government.



436 Auditorium 1:20-2:20 Board 14

Sarah Chipps

Donna Zucker (Faculty Sponsor)

Department of Nursing, UMass Amherst, Amherst, MA, 01003

Nursing and Overdose Prevention for Injection Drug Users

Purpose: The purpose of this study is to answer the following question: What are nurses' attitudes towards and knowledge of naloxone-based overdose prevention programs and how might these factors impact the successful implementation of these programs? **Rationale:** Deaths from heroin overdoses are a significant public health problem in the US. In order to prevent these deaths, some overdose prevention programs teach injection drug users how to administer naloxone (an overdose reversal agent) to peers, perform rescue breathing, and call for emergency medical services. A limited number of previous studies have examined certain health care providers' knowledge of and attitudes towards these programs and found mixed results. However, there are no studies that examine nurses' unique role in relation to these programs. **Methods:** Using the matrix method, a literature review was conducted by searching CINAHL, Ovid, PubMed, Web of Science, and Google Scholar for relevant studies published since 1999 and analyzing the assembled collection of articles. In order to assess the knowledge and attitudes of nurses, a 35 question anonymous online survey will be distributed via email to licensed registered nurses. The survey was built by modifying previous instruments, utilizing both quantitative and qualitative components. Interviews with specialists will be conducted in order to gain a deeper understanding of relevant nursing standards of care and the local implementation of a naloxone-based overdose prevention program. **Results:** Statistical analysis and theme identification will be used to analyze the results. **Conclusions** will be discussed as well as recommendations for future research and practice implications.



437 Auditorium 10:45-11:45 Board 10

Sandra Christensen

Laura Hayman (Faculty Sponsor)

Department of Nursing, UMass Boston, Boston, MA, 02125

Youth Physical Activity Interventions: An Ecological Perspective

Background: Changing physical activity behavior is a complex process that involves intermediary outcomes across more than one ecological domain. Purpose: An ecological framework was used to review and summarize results of physical activity interventions targeting adolescents aged 11-18 that measured primary outcome of physical activity and intervening outcomes, such as self-efficacy, acceptability of program, enjoyment, and so forth. Methods: A systematic search of Pubmed, CINHALL, and PSYCINFO databases from the years 1977 through 2009 was conducted using the key terms of physical activity, youth, adolescent, and exercise. Results: Based on titles, 855 abstracts were reviewed; 143 papers were examined resulting in 24 published reports on 17 interventions that met our criteria. Strategies within the ecological domains of intrapersonal, family, socio-cultural, environmental, and policy were examined. All 17 interventions employed strategies aimed at intrapersonal domain, with some studies indicating several domains measured concurrently. Three of the five (60%) interventions aimed at intrapersonal, family and environmental domains demonstrated increases in physical activity for both genders; one showed increase in physical activity with girls only and another one with boys only. The one intervention aimed at intrapersonal and family domains showed no increase in physical activity. Ultimately it proved somewhat difficult to quantitatively compare across the studies as each used different designs, approaches to measuring change in physical activity, and thoroughness of reporting results in response to the intervention. Conclusions: The evidence from these studies suggests that ecological strategies aimed at the environmental level may have differing impact on boys and girls. Moreover, including ecological strategies that resonate with both genders may improve overall effectiveness towards the goal of increasing physical activity levels in adolescents age 11-18. We recommend that future studies include measurements of intervening outcomes regardless of the ecological domains targeted in the intervention.



438 Auditorium 1:20-2:20 Board 12

Kaitlyn Germain

Valerie Couto

Kathleen Elliott (Faculty Sponsor)

Department of Nursing, UMass Dartmouth, N. Dartmouth, MA, 02747-2300

Prevention of Pressure Ulcers

Purpose: To examine current methods of prevention of pressure ulcers utilized in acute, long term, and home care settings and to determine their effectiveness. Methods: A variety of advanced practice nursing journals from both the United States and United Kingdom, along with product reviews and first hand observations in the acute care settings were utilized in order to assess the current methods in use for the prevention of pressure ulcers. Results: Three key areas were prevalent throughout all areas of research: risk assessment, relief of pressure, and education. In all practice settings, an assessment tool such as the Braden scale was utilized to assess a patient's risk for getting a pressure ulcer. Frequent repositioning, skin care, and cushioning of bony prominences were also a common practice. In many settings, the incidence of pressure ulcers remains unchanged in regards to before and after implementation of a pressure ulcer prevention program. Conclusions: Two out of the three focus areas have been uniformly implemented to ensure a decrease in pressure ulcer incidence (Benbow, 2009; Gudell, Long, & Edmiston, 2009; & Riordan & Voegeli, 2009). Education of support staff was one area that was considerably lacking in comparison to the other areas. Support staffs such as certified nurses' assistants often spend more time observing the patients' skin than nurses in which an education program for support staff may improve pressure ulcer incidence (Gudell, Long, & Edmiston, 2009; Riordan & Voegeli, 2009; & Whiteing, 2009). More research is needed to confirm this conclusion.



439 Auditorium 1:20-2:20 Board 11

Zanele Denaro

Valerie King (Faculty Sponsor)

Department of Nursing, UMass Lowell, Lowell, MA, 01854

HIV Awareness and Ghanaian Adolescents

Zanele Denaro 03/02/2010 UMass Amherst Presentation HIV Awareness and Ghanaian Adolescents Abstract: Purpose: Nursing Students Without Borders (NSWB) of UMass Lowell is a student organization with the mission to promote health empowerment through education, build networks to access health care resources, and distribute material donations to populations in need, while expanding the perspective of the nursing student and collaborating with community members. Ten nursing students traveled to Ghana In January 2010 and while there participated in various community health interventions including an education program for adolescents on HIV transmission, safe sex and proper use of condoms. . Activities: The target population consisted of 27 males and 23 females. The group was separated by gender to allow for more open communication. A pre test was done to assess knowledge of HIV transmission. After discussion of myths and realities of transmission the participants were given condoms to practice proper application and removal by using plaitains or penis model. A post test was administered to assess comprehension of the topic and to allow ample time for questions and answers. Conclusion: The Ghanaian adolescents had some knowledge about HIV transmission but also many misconceptions. An example of a misconception is that some of the teens thought condoms could be used more than once or that 2 condoms would provide better protection Some believed that they could get HIV from a family member who was infected and prepared food for them. Post test results revealed that the program had a significant impact on HIV awareness of the Ghanaian adolescent.



440 Auditorium 10:45-11:45 Board 23

Lauren Gerbick

Maureen McRae (Faculty Sponsor)

Department of Nursing, Salem State College, Salem , MA, 01970

Pediatric Bipolar Disorder: A Community Health Nursing Perspective of the Incidence and Efficacy of Treatments

The purpose of this study is to examine the available literature regarding pediatric bipolar disorder (PBD) and survey local public elementary school nurses to obtain information about the incidence and efficacy of various treatment modalities in prepubescent children with PBD. Pediatric bipolar disorder is a debilitating mental health disorder that seems to be more prevalent than was once thought. The literature reviewed suggests that PBD diagnosis is on the rise and that very young children are being diagnosed at a much faster rate. However, the survey of local school nurses shows that there is a low incidence of PBD diagnosis in their respective student populations. Also, the school nurses surveyed reported that they generally had little involvement in screening for PBD and the treatment regimen. The research articles available also indicate that medications are being prescribed more frequently to these very young children and yet there is still a paucity of research outlining the safety of the administration of these medications to prepubescent children. The literature and the survey of school nurses working in public elementary schools on the Northshore in Massachusetts lead one to conclude that combination therapy, that is pharmacological treatments and psychotherapy used in conjunction, is the most effective and safe treatment modality. More research is recommended in order to discover the most appropriate diagnostic tools and treatment for PBD in order to provide an improved quality of life for the young children suffering from this chronic and devastating mental health disorder.



441 Auditorium 10:45-11:45 Board 31

Kacie King

Cynthia Jacelon (Faculty Sponsor)

Department of Nursing, UMass Amherst, Amherst, MA, 01003

Walking to Health: A Campus Map Project

According to the American College of Sports Medicine, the American Heart Association, and Healthy People 2010 walking is an important part of a healthy lifestyle. Yet physical activity often gets pushed aside. One of the roles of a nurse is to teach health promotion activities, such as walking. Walking can be enjoyed throughout the lifespan in virtually any location and may produce various physical and psychological health benefits. The goal of this project was to show nursing faculty and students how they can increase their physical activity by building walking into their daily routines. In addition, this project also helped users to determine how briskly to walk to achieve recommended intensity levels. An online map of the University of Massachusetts Amherst campus was created to identify step counts between various points on and around campus. The center location of the map was Skinner Hall, which is home to the School of Nursing. All students and faculty of the School of Nursing were recruited to participate by email. Participants were presented with the current recommendations for physical activity put forth by the American College of Sports Medicine and the American Heart Association. Participants were asked to use the online map to help them complete a one week walking log and to answer a brief survey to determine the effectiveness of the map. The results will be analyzed to determine whether this map was effective at helping nursing students and faculty in improving their daily physical activity through walking.



442 Auditorium 10:45-11:45 Board 20

Brenda Manso, Erica Miranda, Mercy W Kamau, Sandra L Jones, Natalie King
Eileen Stuart-Shor (Faculty Sponsor)

Department of Nursing, UMass Boston, Boston, MA, 02125

Community Survey of Kigumo Kenya: Resources for Health and Risk for
Developing Cardiovascular/Metabolic Diseases

Significance: The prevalence of cardiovascular disease (CVD)/metabolic diseases are rising in sub-Saharan Africa; new initiatives are needed to address this emerging crisis. **Understanding the Social Determinants of Health;** “the conditions in which people are born, grow, live, work and age, including the health system” (WHO) is critical to effective solutions. This framework suggests that the distribution of resources at the community level influences the ability of individuals and the community to stay healthy and prevent illness. **Purpose:** This community survey was designed to assess resources for health and risk for developing CVD in a Kenyan community where CVD risk factors are prevalent. **Methods:** Using principles of community-based participatory research we used a semi-structured interview guide to interview stakeholders/households, and assess the local food market, school and clinic. Questions included: population’s key characteristics, perceived health status and needs of the people, factors affecting the health of the community and services currently being provided. Each student team (n=8) recorded their findings and the data were examined for problem frequency/intensity. **Results:** The community was primarily black, Kikuyu, farming, poor (mean income \$1/day), less than HS educated, spoke Kikuyu with some English/Swahili, with limited access to affordable varied diet. They reported strong social networks, satisfaction with life, and active lifestyles. Health priorities of key stakeholders/individuals included: clean water, access to affordable high-quality health care and prevention. Top health conditions reported included: infectious/tropical diseases (malaria, typhoid, HIV, etc) and did not include hypertension, diabetes, obesity or CVD. **Conclusions and Implications:** The community has few health promoting resources and limited access to prevention care and healthy food. Positive resources for preventing CVD include being physically active and a strong social network. Despite the prevalence of CVD risk factors in the community, they do not perceive these to be significant health problems. **Implications:** Creating an effective CVD risk reduction program will require a shift in focus to prevention, promotion of policies supportive of affordable food and access to care/medications, and community education on preventing/treating CV/metabolic disease.



443 Auditorium 10:45-11:45 Board 22

Rebecca Cabana, Kristina Lundquist , Kristen Sethares (Faculty Sponsor)

Department of Nursing, UMass Dartmouth, N. Dartmouth, MA, 02747-2300

Effects of Stress on Eating Habits in College Students

The purpose of this study is to observe the relationship between eating behaviors and stress in college students, particularly in the students at the University of Massachusetts Dartmouth. The highest rate of decline in physical activity occurs in early adulthood period between 18-24 years of age. Researchers have shown that stress among college students can have detrimental effects on both academic performance and health. It is important for nurses to study the effects of stress on nutrition in college students because many of the unhealthy behaviors learned in college carry on to later life, leading to chronic health problems, which nurses will care for. By understanding unhealthy lifestyle patterns, nurses can come up with interventions and education programs to reduce the risk of developing poor habits and chronic diseases. The research design used was a non-experimental, descriptive research study. Data was collected at the residential dining hall as participants were leaving dinner. The first 10 men and first 10 females were asked to take the survey. Researchers guided the participants through an informed consent form and assured anonymity and confidentiality. The majors that had significant results were Nursing and Arts and Sciences, based on the distribution of participants being heavily weighted in those areas. 75% of the participants reported that stress affects their nutrition, either by eating more or less. Based on the results, it is implicated that stress has an effect on eating habits. None of the findings were unexpected, however the sample was small and convenient so the results are not generalizable to all college students. Some recommendations for nurses are to provide college students with stress and nutritional education and resources. The findings support what was in the literature because there was a significant correlation between stress levels and eating habits, however there was no specificity in regards to demographic variables. Further research should be done to determine a more definitive relationship between stress and effects on eating habits.



444 Auditorium 10:45-11:45 Board 9

Roxanna McKeever

Donna Zucker (Faculty Sponsor)

Department of Nursing, UMass Amherst, Amherst, MA, 01003

A Grief Assessment of a Caregiver: One Mother's story.

The purpose of this case study was to describe grief as experienced by a mother of a substance abusing child through her personal narrative. Through in depth interviews and a grief assessment the investigators sought to gain better understanding of the impact that grief had, and continues to have on the life of this caregiver and subsequently, the rest of her family. The design of this case study included a written grief assessment, audiotaped personal narrative describing memories and circumstances surrounding the mother-son relationship, including review of family photographs and writings pertaining to the timeframe of the narrative. The total interview time frame was 6 sessions of 60 minutes per session over a period of 6 months. It is the hope of the investigators, as well as the participant of the study, that the information gleaned can serve as helpful and empowering to other mothers and caregivers who experience grief due to the actions and behavior of their own child who suffers from substance abuse and addiction disorders.



445 Auditorium 10:45-11:45 Board 1

Alison Nazzaro

Cynthia Jacelon (Faculty Sponsor)

Department of Nursing, UMass Amherst, Amherst, MA, 01003

Nursing Considerations of Family Structure, Nutritional Intake, Disease and Poverty in Kenyan Children

Poverty, family structure and nutritional intake have a significant affect on child health in Kenya. Nurses working with these children must understand the implications of social and physical problems. Of the many diseases disturbing Kenyan children, malaria, HIV, tuberculosis, and malnutrition have been chosen as the focus of this presentation. Environmental factors were investigated in order to discuss their relation to the diseases and determine populations at risk. My month long stay in Nairobi, Kenya provided direct observations of the children and the health issues that effect their everyday life. Strategies nurses could use to improve health conditions for Kenyan children include evaluating the functional health patterns in order to provide care that completely incorporates unique situations. By including poverty, family structure, and nutritional intake in their assessments, nurses can better develop care plans for individual children. This analysis demonstrates how nurses should integrate specific environmental factors affecting health issues in children into the framework of a nursing care plan.



446 Auditorium 10:45-11:45 Board 24

Christina Patti

Maureen McRae (Faculty Sponsor)

Department of Nursing, Salem State College, Salem , MA, 01970

Breast Cancer and Pregnancy Abstract

This literature review will examine, in depth, the differences between a breast cancer diagnosis occurring during pregnancy versus a non-pregnant breast cancer diagnosis. The research paper will combine various data from scholarly articles, published books, nursing journals, and online searches to weigh out the positive and negative effects of cancer treatment on both mom and fetus. Prognosis for pregnant breast cancer patients will be reviewed. Different techniques used to treat breast cancer in pregnant women against those used for pre-menopausal non-pregnant women of roughly the same age will also be discussed. The focus of this thesis will be that of the role the nurse plays in this situation. Finally, it will discuss risk factors for developing breast cancer. Although concurrent breast cancer and pregnancy is a rare medical phenomenon, it does happen and it is important for nurses to be familiar with how to deal with this issue and to sort through treatment options quickly thus increasing the chance of patient survival. Included will be specific educational topics for patients, and medication regimens. Additionally, the psychological strain these tough decisions can have on the pregnant female as well as on the family as a whole will be discussed. The results of this literature review reveal the similarities and differences in diagnostic approaches and treatments used for pregnant women with breast cancer as opposed to non-pregnant women. Any differences are related to relative risk to the mother or fetus. The critical role of the nurse including providing support and education for this population of vulnerable women is discussed.



447 Auditorium 10:45-11:45 Board 17

Thomas Psyris

Lisa Wolf (Faculty Sponsor)

Department of Nursing, UMass Amherst, Amherst, MA, 01003

Development of a Decision Tree for Management of Potentially Aggressive Patients in the Emergency Department

Abstract Violence is an occupational health and safety issue that all nurses face (Crilly, 2003). Worker compensation claims for nurses have been higher than that of police and prison officers (Crilly, 2003). Violence towards staff tends to be associated with physical illness, use of alcohol or illegal drugs, psychiatric illness or sociopathic personalities (Ferns, 2007). Aggressive behavior in the ED is a surprisingly common occurrence. A National Crime Victimization Survey conducted from 1993 to 1999 found the average rate for non-violent crime against nurses was 21.9 per 1,000 (Gacki-Smith, 2009). In 2001, 82% of emergency nurses reported being physically attacked by patients and/or family members (ENA, 2008). Psychiatric and emergency settings report the highest level of abuse by patients toward nurses. Factors in the ED contributing to patients exhibiting violent behavior include substance abuse, intoxication, and/or an acute exacerbation of a preexisting psychiatric disorder. These attacks on nurses lead to outcomes such as loss of staff time, low worker morale, increased job stress, and turnover (ENA, 2008). Underreporting of violent acts toward nurses occur because the perceived intent to commit harm on the nurse is downplayed, the nurses are accustomed to violence, or they are pressured by peers not to report the act (Crilly, 2004). Others feel that reporting such violence would be seen as poor job performance and blame for the occurrence (Hodge, 2007). The purpose of this project is to develop a decision tree which can be used to manage escalating and violent behavior of patients in the ED. The method used to develop this decision tree will be to review current literature using appropriate databases such as CINAHL, PubMed, and Ovid. Search terms will include "Emergency Department Violence," "Aggression Against Nurses," "Assault in Emergency Departments," and "Patient Violence" to explore literature on inpatient and ED violence including recommendations to de-escalate or discourage violent behavior as it pertains to the areas where this behavior appears most commonly. Development of this decision tree will have practical and immediate application to emergency nursing, with possible application to other areas.



448 Auditorium 1:20-2:20 Board 13

Sarah Shepard

Cynthia Jacelon (Faculty Sponsor)

Department of Nursing, UMass Amherst, Amherst, MA, 01003

Do Health Care Providers Adequately Address Sexuality and Sexually Transmitted Infection Risk with Older Patients?

Sexuality is an important factor in quality of life for many older adults. Studies reviewed for this project indicate that sexual activity is common among older adults and that some in this subset are engaging in risky sexual behaviors, including lack of condom use. This may be a factor in the increasing rates of sexually transmitted infections (STIs), including AIDS, seen in the elderly population. The majority of older adults express interest in having conversations about sexual health with their health care provider, especially if the provider initiates the conversation. Unfortunately, most older adults report that their health care providers have never given them information on STIs or asked them about their sexual health concerns. Research is lacking into why health care providers do not ask older patients about sexual issues. One study reveals that some health care providers have preconceived ideas about "asexual" elders, are worried that their patients will be embarrassed or offended if the topic of sexual health is raised, and have received no training on how to discuss matters of sexuality with older patients. This project examines how student nurses and practicing nurses deal with sexuality in older patients. What are their personal reactions to and feelings about the topic, how knowledgeable are they about sexual health in elders, do they address the issue with patients, and have they received any training on how to discuss sexuality with older patients? I have constructed a survey around these questions, which I am distributing to junior and senior nursing students at University of Massachusetts Amherst, as well as to practicing nurses at a local hospital. I have received 60 completed surveys so far, and hope to receive 140 more by the end of February 2010. Once the surveys have been completed, I will analyze them for trends and report the findings in a poster presentation. These results may be useful for implementing training about sexual health in older adults in nursing schools and practice settings.



449 Auditorium 10:45-11:45 Board 18

Justin E Damaso

Meghan A Manning

Aiza Soares

Kristen Sethares (Faculty Sponsor)

Department of Nursing, UMass Dartmouth, N. Dartmouth, MA, 02747-2300

Sleep Quality and Quantity of College Students in Different Majors

The purpose of this study was to describe the amount of sleep in University of Massachusetts Dartmouth students by major and other influencing factors. The research was conducted to tell whether or not nursing majors received less sleep than other majors and if other influencing factors contributed to the amount of sleep that was obtained. This is a newly discovered topic due to the specificity and exploratory nature, which led to a lack of literature. The research design was a non-experimental, exploratory, descriptive study. The study was performed by three researchers who conveniently selected 15 students to fill out a questionnaire named the JAM Sleep Quality Index that pertained to sleep quality and quantity. The unexpected results showed no significant differences between the different majors and the quality and quantity of sleep. Limitations of the study included an inadequate sample size that could not represent the target population. Due to the misrepresentation of the actual population, the results cannot be generalizable and applied to the target population. The results are important to the field of nursing because with the help of nursing interventions, students will be more educated on loss of sleep and how it will affect their health. Therefore, they may try harder to get the adequate amount of sleep they need to sustain their health. This study may also advance nursing practice. The conclusion of the study coincided with the literature review in that more research needs to be conducted on this specific topic.



450 Auditorium 10:45-11:45 Board 16

Unelia Videira

Maureen McRae (Faculty Sponsor)

Department of Nursing, Salem State College, Salem , MA, 01970

A Literature Review of the Nursing Shortage in Massachusetts

This study is a literature review addressing the current issues encompassing the nursing shortage. Focus is on Massachusetts; concentrating on variables such as age, education, salary, and nurse satisfaction. Consequences of the lack of initiative to recruit, retain, and educate nurses are addressed. It is important to determine the extent of the nursing shortage in Massachusetts and the effects on patient care. Recommendations are made to address the implications of future nursing in Massachusetts. Research includes data from scholarly articles from sources such as Medline, Ebsco, and Gale Databases, published books, professional nursing journals, and online searches.



451 Auditorium 10:45-11:45 Board 14

Irina Yurkova

Lisa Wolf (Faculty Sponsor)

Department of Nursing, UMass Amherst, Amherst, MA, 01003

Are We There Yet? The Factors Affecting Time of Patient Transfer Between ED and ICU

The purpose of the study is to identify organization factors that affect transfer times between emergency department and intensive care unit of a local community hospital. Patients who are transferred from Emergency Department (ED) to Intensive Care Unit (ICU) are usually in a critical condition and in need of prompt treatment by qualified personal. Chalfin et al. (2007) states that very often ED nurses are not trained properly, or have inappropriate equipment to provide critically ill patients with the needed level of care. As a result of a delayed transfer a patient may suffer complications, such as increased mortality rate, longer hospital stay, etc., as showed by analyzes of Beckmann et al. (2006). There is a dearth of literature concerning transfer of patients between ED and ICU. It is known that organizational and cultural factors influence patient care including transfers and communication between departments. It is critical to understand the factors involved in this delay to improve patient outcomes. Data is being collected from the charts of patients transferred from ED to ICU in a three month period. Data collected includes admitting diagnosis, triage acuity designation, number of practitioners available, ED volume, day of the week and time of day, as well as demographic information such as age, gender, and ethnicity if available. Results are pending; however, the results of the study will give a more comprehensive view of the problem of delayed patient transfer and give data needed for effective interventions to be developed and implemented to improve patient care.



Nutrition & Food Science

452 Auditorium 10:45-11:45 Board 29

Jo-Ann M Nalette, Carmelo N Kuffel, Nancy C Storer, Amanda Bergeron , Tom Montagno (Faculty Sponsor)

Department of Nutrition & Food Science, Mount Wachusett Community College, Gardner, MA, 01440

Understanding CAFOs

This research project examines the widespread growth of Concentrated Animal Feeding Operations (CAFOs) and its negative impacts on animals, humans and the environment. Although nearly ten billion farm animals in the United States are slaughtered each year for food, many consumers remain unaware of the industrial scale practices that CAFOs perform. Research will be conducted to bring about an awareness and understanding of the treatment of these confined farm animals, the health risks to factory farm workers and consumers, and the negative impacts to the environment. Conclusions will show that the unintended consequences of factory farming far outweigh the original intent of CAFOs to provide a mass produced, uniform, inexpensive food supply. This conclusion comes from scholarly articles, primary and secondary sources as well as independent research sources. Informative handouts will be available to participants of the Massachusetts Statewide Undergraduate Research Conference to increase awareness and understanding of the historical, economical and political ramifications of CAFOs in the context of human health and environmental sustainability. Additionally, alternatives to CAFOs will be researched and presented. In addition to their Faculty Sponsor, the presenters would like to acknowledge the support of co-sponsor, Raeann LeBlanc.



453 Auditorium 10:45-11:45 Board 25

Michael J MacLure, Robert Bushey , Raeann LeBlanc (Faculty Sponsor)
Department of Nutrition & Food Science, Mount Wachusett Community
College, Gardner, MA, 01440

Community Supported Agriculture

In this project the value of Community Supported Agriculture in New England will be assessed. Community Supported Agriculture is a method of pooling a community's resources together in order to procure locally grown produce. Multiple benefits range from improving social dynamics to producing a higher quality of food. Methods include a census of the number of community supported farms in a geographic area, as well as assessment of how practical it is to eat such local produce year round. Utilizing scientific journal articles as well interviews with staff and consumers this topic will be researched. The methodologies of local community sustained farms will be examined according to a random selection of available community supported farms in the geographic area. The products from local community sustained farms and their benefits will be assessed against the costs and prices of maintaining and operating community supported farms. Finally, the data collected will be used to hypothesize methods to make improvements in community sustained agriculture as well as to make such information more available to the public. Ultimately this evaluation hopes to lead the target audience to make informed decisions regarding their participation in community supported agriculture. In addition to their Faculty Sponsor, the presenters would like to acknowledge the support of co-sponsor, Tom Montagno.



454 Auditorium 10:45-11:45 Board 32

Aniela R Czajkowski, Jacqueline Mathews, Michael Close , Kalidas Shetty
(Faculty Sponsor)

Department of Nutrition & Food Science, UMass Amherst, Amherst, MA,
01003

From Food Desert to Food Oasis: Helping a Community Claim their Right to Fresh Foods

Studies have indicated that African-American populations have a higher than average incidence of malnutrition-associated chronic diseases (e.g., obesity-linked type II diabetes and cardiovascular disease) and concurrently lower than average consumption of legumes, fresh fruits and vegetables. Beginning in the fall of 2009, a study has been undertaken in urban Springfield, MA in conjunction with a predominately African-American church congregation and the University of Massachusetts Amherst to increase the fresh plant food consumption of one such community. Preliminary research has found significant obstacles to regular fresh fruits and vegetable consumption in the congregation, primarily due to their affordability and inaccessibility. The first stage of the study aims to explore the current diet of the congregation of the church, the accessibility to fresh plant produce, the level of health and the changes in food consumption in recent years through a series of surveys, interviews and a community luncheon. It will also explore the biochemical relevance of culture-specific fresh, whole plant foods to the reduction of type II diabetes and hypertension through relevant in vitro enzyme assays targeting specific foods to potentially counter these disease pathways. The second part of the study focuses on working with the congregation and University to develop solutions to enhance fresh plant foods in the community based on the findings of the first stage of the study.



455 Auditorium 10:45-11:45 Board 2

Cori Lucius, Erika Bourdon, Grace C Dib, Kirby-Rose Carpenito, Kristina M Secinaro, Lauren Cullati, Srimathi Kannan (Faculty Sponsor)

Department of Nutrition & Food Science, UMass Amherst, Amherst, MA, 01003

Early Childhood Fruit Exposure (ECFE) - A Sensory-Based Nutrition Education Program Promoting Familiar Fruits

Author(s): L Cullati, K Carpenito, K Secinaro, E Bourdon, G Dib, C Lucius, S Kannan, PhD, Department of Nutrition, University of Massachusetts Amherst, Amherst, MA National surveys indicate that children from economically disadvantaged families are not meeting the daily recommendation for fruits. The objective of the UMASS Early Childhood Fruit Exposure (ECFE) Program is to engage young children ages 3-5 yrs in classroom activities addressing locally accessible fruits (banana, pear, and orange). Centered in early childhood learning styles and based in current scientific research, ECFE creates a positive and exciting early learning experience promoting fruit consumption using multiple senses. Sixty preschoolers aged 3-5 yrs participated in four experiential learning activities targeting the three fruits as well as tomatoes (planting activity). The program includes child-centered 20-30 minute lesson modules delivered weekly for 4-weeks by undergraduate nutrition students. The ECFE program culminated with a presentation for families and strengthened local partnership with Community Involved in Sustaining Agriculture (CISA). Program evaluation included a child fruit fondness evaluation activity and teacher and parent feedback using standardized assessments consisting of a 5-point satisfaction scale. Feedback from teachers and children was positive and encouraged the "sensory play" approach. Most families reported frequently consuming a range of common fruits and less frequently, exotic fruits such as grapefruit and kiwi. Classroom observations and teacher and parent surveys indicated that the families recognize the importance of daily fruit intake. Research on the program indicates it builds home-school-community links to support children's nutrition. Further research should explore how to optimize sensory-learning exercises and facilitate discovery-based activity delivery modes for targeting locally accessible exotic fruit intakes in this high-risk population in rural Western Massachusetts.



456 Auditorium 10:45-11:45 Board 13

Aryoung Choi, Brianna Bodley-Gomes, Frances Sypteras, Bibiana Da Silva ,
Raeann LeBlanc (Faculty Sponsor)

Department of Nutrition & Food Science, Mount Wachusett Community
College, Gardner, MA, 01440

How Safe is Your Milk?

Critics argue that raw milk can only bring disease, plague, and bad sanitation. They maintain that pasteurization, the long-held standard of cleanliness is the only way to be sure of safe milk. But is this true? Raw milk proponents claim that pasteurization destroys the nutritional value of milk, and that there have been far more deaths caused by contaminated pasteurized milk than raw milk. The purpose of this study is to investigate the safety, risks, and benefits of raw cow milk, and whether it is the safer, healthier alternative to pasteurized milk. Through a review of scientific literature and scholarly articles, this study explores the historical context of pasteurization, as well as claims from both sides of the raw milk controversy. Many claims of disease have been overemphasized or taken out of context in the case of raw milk, although without proper precautions, such as allowing the cows to eat grass, outbreaks of disease are possible. Nutritionally, raw milk does appear to have more merits. In a country where "Got Milk?" advertisements are a part of cultural slang, the issue of healthy milk affects everyone. In addition to their Faculty Sponsor, the presenters would like to acknowledge the support of co-sponsor, Tom Montagno.



457 Auditorium 10:45-11:45 Board 15

Samantha L Minter, James Kendall, Thaissa dosSantos , Raeann LeBlanc
(Faculty Sponsor)

Department of Nutrition & Food Science, Mount Wachusett Community
College, Gardner, MA, 01440

Nutrient Density: A New Look at a Modern Diet

This research project examines nutrient density: the ratio of nutrient content to the total calorie content. Our study will focus on the effects of the food industry's method to produce cheaper and more profitable products. Food manufacturers introduced processed foods with discretionary calories which affected the food's nutrient value. Research was conducted to make consumers aware of nutrient dense foods and how important the origin of the food they consume is to their health. Studies come from scholarly literature and observation of local food sources. Outcomes provide evidence that adding these nutrient dense foods to your daily diet could lead to a healthier life and prevent possible health complications. Conclusions support interventions to create a well balanced diet plan and menu that is suitable for all ages. In addition to their Faculty Sponsor, the presenters would like to acknowledge the support of co-sponsor, Tom Montagno.



458 Auditorium 10:45-11:45 Board 11

Christina a Rogers, Christine Foley , Srimathi Kannan (Faculty Sponsor)
Department of Nutrition & Food Science, UMass Amherst, Amherst, MA,
01003

FruitZotic: A Multi-Sensorial Themed Nutrition Education Program Promotes Willingness to Try Exotic Fruits in Western Massachusetts Head Start Preschool Aged Children

Nutrition education of preschool children involves learning through sensory experiences. The objectives of FruitZotic are to enable Head Start children to (1) recognize a variety of exotic fruits by name, (2) descriptively characterize exotic fruits by physical and sensory characteristics, and (3) categorize fruits by theme (fruits with hair, fruits from afar). The ultimate goal is to promote their willingness to try exotic fruit sources of micronutrient vitamins and minerals. One-hundred-and-eighty children from 12 Head Start classrooms and 8 sites across Western Massachusetts participated in interactive and sensory learning activities including exotic-fruits-literacy, creative arts-and-crafts, and a "See-Smell-Hear-Touch-Taste" segment. Question-prompted discussions and take-home components incorporated exotic fruits (examples: pomegranate, peach, mango): (1) Coloring Activity, (2) Recipes, and (3) Fact Sheets. Evaluations consisted of willingness-to-try tastings, documented in-class observations and standardized parent and teacher evaluation surveys. Overall, more than 90% of the children improved their skills in identifying the fruits, and sufficiently described the sensory properties of the fruits. Teachers and parents rated the program positively. Multiple factors (sensory exploration of the fruit, book-reading, art activities, and encouragement from peers and mentors) contributed to gains in the children's recognition of exotic fruits, and resulted in their willingness to try exotic fruits. Sensory education has potential to increase familiarity with exotic fruits. Peer influences, exposure to fresh fruit in its natural form and encouragement from respected mentors, all potentially contribute to willingness to try new fruits. Nutrition education targeting young children needs to be sensory-affective and should incorporate a comprehensive approach.



459 Auditorium 10:45-11:45 Board 19

Benjamin I Studt, Catherine D Remillard, Nicole Rheault , Raeann LeBlanc
(Faculty Sponsor)

Department of Nutrition & Food Science, Mount Wachusett Community
College, Gardner, MA, 01440

Slow Food Movement

The purpose for this project is to investigate the ideals and practices of the Slow Food Movement, which brings origin (such as local farms), preparation, and consumption of food back to traditional roots. The Slow Food Movement claims to be everything Fast Food is not. Lack of time, finances, and accessibility to the Slow Food Movement are stumbling blocks which may prevent people from embracing the ideals. Fast food is abundant, allowing a quick meal, generally shared in the car, for a small price, but it does not meet the requirements of the Slow Food Movement. Some would even argue that fast food doesn't "taste great." The founder of this social movement defines slow food as fresh food "produced in a humane and socially just manner" and food that lends attention to sustainability and care for the environment. Research suggests good health is promoted by sharing the preparation of food and the pleasure of eating with friends and family. Purchasing local whole foods supports the local farmers and benefits the community while whole foods tend to be lower in fat, sodium and artificial ingredients. This project's aim is to research and express to our fellow students, family, and friends not only the benefits of the Slow Food Movement, but also the obstacles that stand in the way of its practice. Palmer, Sharon (2009). 8 Reasons to Support Slow Food. *Environmental Nutrition* 32, (4). In addition to their Faculty Sponsor, the presenters would like to acknowledge the support of co-sponsor, Tom Montagno.



460 Auditorium 10:45-11:45 Board 33

Dae W Kim, Clayton J Morse, Felicia Stanikmas , Raeann LeBlanc (Faculty Sponsor)

Department of Nutrition & Food Science, Mount Wachusett Community College, Gardner, MA, 01440

Weston A. Price Foundation

The Weston A. Price Foundation, established in 1999, is a non-profit charity that prides itself on “Wise Traditions in Food, Farming and the Healing arts” (Weston A. Price Foundation, 2010). In addition to their Faculty Sponsor, the presenters would like to acknowledge the support of co-sponsor Thomas J. Montagno, Ph.D. The foundation is based on the work of Dr. Weston A. Price, a dentist who in the 1930’s studied the diet of indigenous non-industrialized peoples and how it related to their overall health status. In an attempt to determine the optimum characteristics of human diets, Dr. Price’s research demonstrated that humans achieve perfect physical form and perfect health only when they consume nutrient dense whole foods and fat-soluble activators found exclusively in animal fats. The goal of this project is to examine Dr. Price’s findings within the realms of anti-vegetarianism, the consumption of raw soy products and their effects on the human body and the consumption of saturated fat including the Lipid Hypothesis. Working with a base of current scientific research we will attempt to determine the validity and relevance of Dr. Price’s work in today’s world. “The Weston A. Price Foundation for wise traditions in food, farming and the healing arts.” www.westonaprice.org, 2010 In addition to their Faculty Sponsor, the presenters would like to acknowledge the support of co-sponsor, Tom Montagno.



461 Auditorium 10:45-11:45 Board 30

Alissa White

Srimathi Kannan (Faculty Sponsor)

Department of Nutrition & Food Science, UMass Amherst, Amherst, MA,
01003

FruitZotic: A Creative Nutrition Education Intervention Approach to
Introducing Preschoolers to Fresh Exotic Fruits at Head Start Locations in Rural
Western Massachusetts

Head Start children are at risk for micronutrient (vitamin A, and iron) deficiencies. The objectives of FruitZotic (FZ) are to (1) Determine the effectiveness of developmental stage appropriate artistic components of exotic fruit (peach, pineapple, mango) lessons on fresh fruit preferences and willingness to taste; (2) Explore the feasibility of implementing exotic fruit-themed crafts in Head Start classrooms and (3) Design, distribute and utilize "FZ Passports" to track children's progress through the weekly lesson series. Between October 2009 and March 2010, pre-school children (n=90) ages 3-5 years from five Head Start locations and 10 classrooms within a 25-mile radius of UMass Amherst participated. Exotic fruit identification and coloring activities in FZ passport booklets served as evaluations of the children's learning. Teacher and parent evaluations tracked classroom-program success, and structured classroom observations documented children's willingness to explore and taste the fruits. The program reach demonstrates the implementation feasibility. The activities combined with other elements of the intervention contributed to the expansion of the children's recognition (90%) of the fruits, and increased preferences and willingness (70%) to taste exotic fruits. Teachers (100%) stated that the children enjoyed the program and the passport activity. The creative activities strengthened the existing intervention and were associated with children's recollection of the fruits in follow-up assessment. Results support the engagement of young children in creative components as a supplement to in-class exotic fruit tasting. Future programming should guide the development of theoretical-framework-centered (Diffusion of Innovations) family FZ and encourage partnerships with exotic-fruit growers and local point-of-purchase.



Philosophy

462 Concourse 10:45-11:45 Board 63

Svetlana Babitskaya

Joan Brenner (Faculty Sponsor)

Department of Philosophy, Bunker Hill Community College, Boston, MA,
02129

The Role of Intuition in the Research Process

Academic achievement is usually associated with the formation of fundamentally new concepts and ideas that are not simply the logical consequence of the known scientific propositions. This research is based on the qualitative analysis of different scientific articles, books and journals. This study examines how the scientist develops the radically new concepts and ideas that cannot be acquired from the available scientific base. Fundamental theoretical discoveries are the result of the interaction of intuition with the methods and principles of a particular science and experimental verification of the data. Intuition, probably, plays the most significant and decisive role in the development of the new scientific knowledge and of advancing promoting of new ideas. When scientists try to describe the process of creation of such ideas, they rarely avoid the references to "guess", or "enlightenment". It provides research directions, forms the visual mental models of objects, interprets the empirical data, constructs the fundamental concepts and general principles of the theory, generates hypotheses, stimulates the choice of effective techniques and methods of research. In short, practically every cognitive process leading to the new scientific results scientists link with intuition. The thorough analysis shows that intuition is a qualitative leap that occurs in a process of transition from the quantitative amount of logical thinking to a qualitatively new level-intuitive insight. In addition, the mechanism of intuition is quite general in nature, i.e. present in almost all spheres of human activity.



463 Concourse 10:45-11:45 Board 60

Harold Candland IV

Joan Brenner (Faculty Sponsor)

Department of Philosophy, Bunker Hill Community College, Boston, MA,
02129

Why Does Mankind Seek to Prolong the Lives of the Individual and What Research has been Done to Achieve this Goal

Why does mankind seek to prolong the lives of the individual and what research has been done to achieve this goal. This paper focuses more on the why than on the how, but gives many accounts of how mankind has achieved their goals in regards to the topic. It's purpose is to find out whether there is a biological or social incentive in mankind to place emphasis on the individual's life span as opposed to the group or on reproduction. Information on this subject has been drawn from periodical science journals (Nature, Scientific American), books (such as Dawkins' The Selfish Gene and Diamond's The Third Chimpanzee), webpage articles (ted.com, eol.org) and Newspapers (Times, Herald). Cited also in this paper are works of art, their purpose is to display those social influences which are not technical incentives. Because of longer life spans, certain groups of humans were able to survive due to the passing on of knowledge from the elders of certain tribes, and thus, "out lived" other groups who had inherently shorter lives. There are both biological reasons to seek longer life or to prolong one's life as well as social incentives drawn from a general understanding that to be old is a good quality, which helps humanity as a whole. Prolonging the life of the individual seems to have had a positive effect on society at one point in time. Because of this, society views longevity as being a quality to be sought after and has placed emphasis on attaining longevity in many aspects of our lives (I.e. science, art etc.). With the onset of phonetic writing and pictographs the necessity for longer life has dwindled, though it is still present. This poses the question: Should emphasis be placed on prolonging life and reproducing less, or vice versa? Research indicates that longer life and lower rates of reproduction has great benefits.



464 Concourse 10:45-11:45 Board 61

Marcie Lopus

Susan McPherson (Faculty Sponsor)

Department of English, Quinsigamond Community College, Worcester, MA,
01606

Fractals: A Metaphorical Lens

There has been a separation of sciences. We are shedding our Euclidian skin through a sound exploration of historical mathematical evolution. From ancient Greece, and Fibonnaci's Golden ratio, through Benoit Mandelbrot's current work unearthing the fractal blueprints of nature's grand design, we will journey the spiral of evolution itself. As we explore the true existence of Phi, as well as the extent of its application, we are invited to discard our linear thinking for a metaphorical revelation. Through Dr. Bruce Lipton's cellular research, this paper and presentation will articulate the importance of fractals in shifting into a new era in science. Division and magnification will act as our metaphorical zoom buttons as we navigate spiral-like patterns throughout nature and conceptually apply such self-similarity to four main representations of scale: the cells, the organism, the species, and the super-organism. As we revisit the progression of scientific mathematics, we conclude that much like current breakthroughs in genetics suggest, we have spent lifetimes approaching the separate and the tangible. Somewhere in our research of almost every field, we have abandoned part of our equations: the dynamics. Through a fractal lens we can begin to envision the nature of connections, thus embracing a holistic explanation of our dynamic universe.



Physical Therapy

465 Auditorium 3:50-4:50 Board 5

Danielle O'Shea

Deirdra Murphy (Faculty Sponsor)

Department of Physical Therapy, UMass Lowell, Lowell, MA, 01854

An Examination of the Improvement of Stairwell Appearance and its Effectiveness on Stair Use on a College Campus

Background: In the United States the prevalence of obesity is at an all time high and is continuing to grow at an alarming rate. Due to changes in eating and exercising habits, it is not uncommon for college students to experience weight gain. Since overweight and obese individuals are at an increased risk for many serious health problems it is important to encourage this population to increase their physical activity. One way this could be done is to promote the use of stairwells over elevators. Purpose: The purpose of this study was to examine the effectiveness of increasing the physical appeal on stair usage in the main stairwell of the O'Leary Library at the University of Massachusetts Lowell. Methods: In the Spring of 2008, battery powered sensors using infrared technology were set up in the main stairwell of O'Leary Library to record baseline data of stair usage. A collaboration with a local teen art group in August 2008 improved the stairwell's appearance, making it more desirable to climb. Stair usage data has been collected each semester since the intervention and continues to be collected. Results: Descriptive stats will be used to look at changes and trends in stair usage over the years. The data will then be broken down further in order to compare usage by semesters and/or months using t-tests.



Physics

466 Concourse 1:20-2:20 Board 73

Christopher Agostini

Joan Brenner (Faculty Sponsor)

Department of Physics, Bunker Hill Community College, Boston, MA, 02129

Time, Causality and Synchronicity

The diverse range of philosophical and scientific debates for time, from antiquity to present day, is analyzed and illustrated, and a contrast between the universe's dependence on time and the reality of time is made. With the establishment that the speed of light is constant, time went from mere independent to dependent as space became intimately entangled to form the four-dimensional space-time. Within this fabric, duration can be measured and days are experienced, and from this a mathematical model for causality was given. Then, for simultaneous events that are casually unrelated, the theory of synchronicity states these events, if meaningfully related and unlikely to occur together by chance, may otherwise be grouped by their meaning just as events may be grouped by cause. Later research will investigate these groupings to help understand the forces governing all types of simultaneous events in furtherance for defining time.



467 Concourse 1:20-2:20 Board 71

Colleen Allen

Grant O'Rielly (Faculty Sponsor)

Department of Physics, UMass Dartmouth, N. Dartmouth, MA, 02747-2300

Identification of Pions from Photonuclear Experiments at MAX-lab

One of the important questions in nuclear science is to describe the properties of the nucleon in terms of a QCD-based framework. In the low-energy nuclear region the QCD calculations are impossible to do using standard techniques, so it is necessary to use alternative approaches to solve them. One process where these other techniques are both valid and useful is near-threshold pion photoproduction. This process involves a rearrangement of the quarks in the nucleon and thus is directly accessing the underlying quark structure. The newly upgraded tagging facility at MAX-lab in Lund, Sweden is capable of tagging photons at energies up to 200 MeV and is ideally suited for measurements of pion photoproduction in the energy range above threshold. Standard particle identification methods are insufficient to separate the pions from the very large proton and electron background. However, by searching for the 4.12 MeV muon from the pion decay in the detector, it is possible to identify candidate pion events. A final cross-check of the pion identification is made through examining the decay curve of the candidate pion events and comparing this with the known pion lifetime. In order to determine accurate cross sections, it is necessary to correct the pion yield for events lost through the particle identification cuts, as well as the misidentification of background events as pions. The particle identification techniques and analysis will be shown.



468 Concourse 1:20-2:20 Board 74

Daniel Kelleher

Amit Tandon (Faculty Sponsor)

Department of Physics, UMass Dartmouth, N. Dartmouth, MA, 02747-2300

Modeling Mixing Using Random Walks in a Sheared Environment

It is well known that a random walk leads to a Gaussian distribution. By creating a random walk for a large number of particles simultaneously, the resulting graphs mimic the process of mixing in a fluid at rest. We examine mixing in the presence of shear flows by a Lagrangian particle tracking approach. The results will be verified by examining the particle distribution function and comparing it with the tracer statistics of the advection-diffusion equation. Finally using concepts of dynamical systems we will associate the mixing dispersion statistics to Lyapunov exponents in finite time.



469 Concourse 1:20-2:20 Board 72

Jason Lemrise

Grant O'Rielly (Faculty Sponsor)

Department of Physics, UMass Dartmouth, N. Dartmouth, MA, 02747-2300

Proton Identification using Plastic Scintillator Counters at MAX-lab

One of the most important questions in nuclear science is describing the properties of the nucleon in terms of the framework provided by QCD. The QCD calculations in the low-energy nuclear region are impossible to do using standard techniques, making it necessary to use alternate approaches to solve these calculations. Two processes for which these techniques are both valid and useful are pion photoproduction and nuclear Compton scattering below the Delta-resonance. The newly upgraded tagging facility at MAX-lab in Lund, Sweden is capable of tagging photons at energies up to 200 MeV, and is ideally suited to perform measurements of these fundamental processes in the low-energy region. High-quality measurements are needed to test the predictions of the various quark-based models. To achieve the required precision, it is necessary to understand the detectors used for the measurements. For the pion photoproduction experiments, it is necessary to understand both the detection efficiency for different particle types and the energy determination from the plastic scintillator counters. Since the $C-12(g,p)$ cross-section is well known, its determination using the proton yield from the counters and the photon flux from the tagger serves as a good test of the systematics of the new MAX-lab facility. An overview of the particle identification and energy determination for protons will be shown.



470 Concourse 1:20-2:20 Board 70

Daniel Walsh

Jay Wang (Faculty Sponsor)

Department of Physics, UMass Dartmouth, N. Dartmouth, MA, 02747-2300

Interactions of Intense, Ultra-Short Lasers with Atoms

We study interactions of intense, ultra-short laser pulses with atomic systems in the strong perturbation regime. Laser matter interactions are of current interest in research in atomic, molecular and optical physics. In our project, numerical solutions of the time dependent Schrodinger equation of atomic systems interacting with a strong laser will be investigated. We will use a numerical method where the spatial coordinate is discretized on a grid and the temporal evolution is carried out using the Runge-Kutta scheme. We refer to this as the space discretized Runge-Kutta (SDRK) method. The results of the SDRK method will be compared to those of other methods such as the split operator approach in terms of effectiveness and stability. The wavefunctions of model systems will be calculated, and relevant properties such as ionization rates will be studied as a function of laser intensity and duration. We will also compare the exact numerical results with often-used approximations such as the strong field approximation to study their validity.



Plant, Soil, and Insect Sciences

471 Auditorium 2:35-3:35 Board 13

Brittany Horgan

Will Snyder (Faculty Sponsor)

Department of Nutrition & Food Science, UMass Amherst, Amherst, MA, 01003

Successful Farmers Markets in Low-Income Communities

Food access is a complex issue that connects policy makers, farmers, organizers and consumers alike! Many communities facing food insecurity have come up with initiatives to address the problems of food insecurity by creating more farmers markets. Low-income communities in urban environments have become especially interested in finding ways to generate greater food access in the city. Many organizers in these low-income communities, such as The Food Project, are currently working to make the redemption of food stamps/SNAP, WIC, and senior coupons more accessible at the urban farmers markets. In a research partnership with The Food Project, this thesis examines the use of alternative payment forms at farmers markets sites in the state of Massachusetts. Three particular market sites located in the cities of Lynn, Holyoke and Lawrence, Massachusetts are the focus of the project. These cities are similar in socio-economic status and thus offer a good basis for comparison. Using data from the Mass Department of Agriculture; the study finds that the Lynn market in particular has received the highest redemptions of food stamps compared to all other markets in the state. In order to find out why some markets have been more successful than others, the study examines the particular organizing methods market managers have been practicing. Interviews with market managers in Lynn, Lawrence and Holyoke provide perspective on what the best management practices may be. Some of the more successful organizing methods identified by this research include: support from local business, effective advertising, market location accessibility and community ownership. In conclusion the study presents recommendations for farmers market managers in regards to how to run a market in a low-income community most effectively.



472 Room 101 1:20-2:20 Board 54

Gina Kwong

Lyle Craker (Faculty Sponsor)

Department of Biology, UMass Amherst, Amherst, MA, 01003

The Synergistic Effect of Essential Oil Combinations as Antimicrobial Agents in Personal Care Products

Consumers are increasingly looking for natural alternatives in their personal care products. The drive for natural ingredients in cosmetics has shown to be a positive investment. Personal care industries have been looking to formulate the most effective and natural preservative to prevent and control microbial growth in cosmetic products. Essential oils have been used since ancient times as preservatives in personal care products. Substantial research on using single essential oil as antimicrobial agents has been reported in the literature, however, few cases on the synergistic effects of combined essential oils have been documented. This study investigates the synergistic effect of three essential oils, cinnamon (*Cinnamomum zeylanicum*), clove (*Eugenia caryophyllata*), and tea tree oil (*Melaleuca alternifolia*) against *Staphylococcus aureus* in a bench test fully recognized by the FDA to address the safety and stability of personal care products. The essential oils were selected on the documented antimicrobial activity against various bacteria, fragrance strength, and the multiusefulness of the oils. The goal of this study is to determine the maximum threshold in using a combination of essential oils as an effective preservative without causing reactions or side effects. The antimicrobial activity of the essential oils is evaluated by adding the oils alone and in combination to a *Staphylococcus aureus* containing broth in 96-well microtiter plates. The effect of the oils is measured using a microplate reader after a 24 hour incubation. Tests on the essential oils and synergistic effects are ongoing and will be reported at the conference.



Political Science

473 Auditorium 3:50-4:50 Board 25

Audra Riding

Michael Baum (Faculty Sponsor)

Department of Political Science, UMass Dartmouth, N. Dartmouth, MA,
02747-2300

Health Planning in a Democratic Society: the Brazilian versus American Experience

Health planning is a difficult and politically volatile issue in many modern democratic states. The purpose of this study is to examine what effect political participation and levels of voice and accountability have on health outcomes in Brazil and the United States. Since its re-democratization period in the late 1980s, Brazil has implemented a series of health councils which give members of the general public a voice in determining local health policies. Today, 98% of Brazilian cities have implemented health councils. In the late 1970s the United States experimented with a similar concept, known as Health Service Agencies, but these ultimately failed. Using data from the World Bank, Polity IV, and World Health Organization, this study argues that levels of political participation and voice and accountability have a positive impact on basic health indicators, such as infant mortality rates and health expenditures. This relationship reveals that health outcomes are not merely determined by monetary or technological investments in health care. By engaging the public in health policies, Brazil has transformed its health system from one of the worst in the world to one that has provided universal coverage to all of its citizens. The United States, however, has failed in its attempts to engage participatory venues and continues to invest increasing levels of its GDP in healthcare with diminishing returns. These results indicate that the United States must place a heavier emphasis on political participation in health policy, instead of solely focusing on monetary and technological investments.



474 Auditorium 3:50-4:50 Board 24

Jeffrey Rothschild

Jane Fountain (Faculty Sponsor)

Department of Political Science, UMass Amherst, Amherst, MA, 01003

The Office of Harmonization for the Internal Market: Creating a 21st Century Public Agency

Dr. Jane Fountain and I researched the institutional changes and political implications of the Office for Harmonization in the Internal Market's (OHIM) transformation to a paperless office. OHIM has been the official authority of the European Commission (EC) for the registration of Community trademarks since 1996 and for the Community registered design since 2003. This research explores how OHIM management, under President Wubbo de Boer, implemented numerous performance measures to better serve its users and streamline and simplify the trademark process. The management struggled with a lack of external criticism and difficult intermediaries who preferred the agency did not simplify or make its processes more efficient. Yet, despite these barriers, OHIM created a Quality Management Unit, a User Satisfaction Survey, a Service Charter, and a Manual of Trademark Practices to increase the transparency and quality of its decisions on trademark and design applications, as well as an IT "Laboratory" to conduct research and development on new technologies. The management also restructured the staff, introduced short term contracts and new training programs, and focused on internal mobility of the staff, all controversial decisions received differently by the staff. Additionally, this research examines how national offices, which previously had the monopoly on trademarks in their respective countries and were used to significant revenue streams from their own national trademarks, have received OHIM. Due to the structure of the Community agency under the EC, a representative from each national office sits on OHIM's administrative board. In 2005 and 2009, OHIM had a large surplus, which OHIM management felt was inexcusable for a government agency. However, it needed the approval of its full administrative board to reduce its fees. The national offices, which felt fee reductions may threaten their revenue, were obstinate in the process. In a compromise, an OHIM cooperation fund was developed to provide the national offices with technical cooperation and support.



475 Auditorium 3:50-4:50 Board 23

Robert Vanasse

Eric Einhorn (Faculty Sponsor)

Department of Political Science, UMass Amherst, Amherst, MA, 01003

Planning and Promise in the Development of Ørestad

Urban development projects can deliver significant economic and spatial opportunities as cities attempt to realign themselves in the globalized urban landscape. The development of the new city center of Ørestad southeast of Copenhagen's center, however, is testament to the uncertainties of this process. The project has been characterized by undesirable financial, organizational, and spatial features that, it is argued, have not been exogenous but resulting from a shifting planning policy brought on by local and global political-economic changes. Making sense of this transformation, its causes, and most importantly its results will aid our understanding of the complex process of urban development.



476 Auditorium 3:50-4:50 Board 26

Fesehaye Zewdie

Joan Brenner (Faculty Sponsor)

Department of Political Science, Bunker Hill Community College, Boston, MA, 02129

America's Decision to Drop the Atomic Bomb on Japan

The decision, after carefully investigating other alternatives, to unleash the atomic bomb on the cities of Hiroshima and Nagasaki in Japan was one of the most difficult decisions that President Truman had to make during his presidency. This research paper covers a series of arguments and debates on the alternatives to end the war with the Japanese and the steps that President Truman took to force the Japanese to accept unconditional surrender. In addition, this project explains the obsession to ultimately intimidate or impress the Russians in order to secure the political and military supremacy of the United States. This remained a deep concern for Truman along with the estimated number of American casualties had he continued with the decision to invade Japan. The bloody and exhausting battle experiences with the non-surrendering Japanese defense forces on Iwo Jima and Okinawa are also thoroughly explained as they became the bases for the casualty calculations. This research project consists of information through the careful reading of the books including but not limited to: Uranium Wars by Amir Aczel, Downfall: The End of the Imperial Japanese Empire by Richard Frank, The Making of the Atomic Bomb by Richard Rhodes and other many scientific sources.



Psychology

477 Room 101 2:35-3:35 Board 49

Matthew Abbott

Adrian Staub (Faculty Sponsor)

Department of Psychology, UMass Amherst, Amherst, MA, 01003

Anticipatory Eye Movements During Language Comprehension: Visual and Strategic Factors

Past research has shown that listeners make rapid use of semantic information within sentences to predict how sentences are most likely to continue. Experiments using the Visual World paradigm (Cooper, 1974; Altmann & Kamide, 1999; Kamide, Altmann, & Haywood, 2003) demonstrate that listeners extract information from verbs to make anticipatory eye movements to the most likely referent in a visual scene. For example, while hearing the verb eat, the listener directs his or her eyes toward the only edible object in the scene, e.g. a cake. In the present study, two eyetracking experiments were conducted using this paradigm to assess the scope and limits of this phenomenon. Participants' eye movements were recorded while listening to sentences and viewing visually-displayed scenes. The first experiment involved using photographs of complex scenes, as opposed to simple computerized depictions of objects against a static background that were used in previous research. In the second experiment, filler trials where the verb's object is not present in the scene were removed to evaluate how implicit task demands influence eye movements during the first experiment. The results from this study will inform the theoretical understanding of the connection between eye movements and spoken language comprehension.



478 Room 101 3:50-4:50 Board 39

Felicia Abbuah

Joan Brenner (Faculty Sponsor)

Department of Psychology, Bunker Hill Community College, Boston, MA,
02129

Psychological Effects of the Atomic Bomb: Long Term and Short Term

The atomic bomb caused many problems whether in its making and use. It also had psychological effects on the societies of the world. The purpose of this revision is to view the pain and affects of the atomic bomb short and long term. Websites containing articles and books regarding the psychological effects are the sources that I'll be using. The responses of the survivors to RERF questionnaires revealed many symptoms, such as post traumatic stress disorder (PTSD), which occurs following experiences of great terror, such as floods, earthquakes, and volcanic eruptions. The mental, physical, and emotional symptoms reported following the terrible incident were numerous including, but not limited to, recalling the occurrence and becoming upset, experiencing an increased sense of unresponsiveness and immobility, feeling guilt and discouragement, general fatigue, amnesia, lack of concentration, dizziness, losing consciousness, headache, and nausea. An atomic bomb is an explosive nuclear weapon that derives its destructive force from nuclear reactions, either fission or a combination of fission and fusion. It releases enormous amounts of energy by nuclear fission. With the drop of the bomb blood was shed, lives were taken and others were left to spend their days with the remembrance of the incident.



479 Room 101 3:50-4:50 Board 45

Michaela Barrette

Linda Isbell (Faculty Sponsor)

Department of Psychology, UMass Amherst, Amherst, MA, 01003

How Mood Influences Categorization Processes and Behavior toward Group Members: A Helping Behavior Study

Research demonstrates that affect plays a significant role in how we form impressions of others and make judgments about them in everyday life. This study examines the role of affect in how individuals categorize out-group members. Recent research (Forster, 2009) demonstrates that priming a global processing style causes people to focus on similarities between groups (thus promoting reliance on superordinate categories, e.g., "college students"), whereas priming local processing causes people to focus on differences (thus promoting reliance on subordinate categories, e.g., "Amherst college students" versus "UMass students"). In accordance with the Malleable Mood Effects Hypothesis (Hunsinger, Isbell, & Clore, under review) we hypothesized that happy moods would promote reliance on a primed processing style. Thus, global priming should promote reliance on superordinate categories (e.g., "students"), whereas local priming should promote reliance on subordinate categories (e.g., "Amherst College students"). In contrast, sad moods tend to inhibit reliance on primed information. Thus, sad moods are expected to lead to effects that are the opposite of those predicted for happy moods. To test this hypothesis, participants were randomly assigned to complete a happy, sad, or neutral mood manipulation task. They were then exposed to a map test to prime global or local processing before they viewed videos of students who they were told were from Amherst College. Participants then made similarity judgment about themselves and Amherst College students.



480 Room 101 3:50-4:50 Board 41

Jillian Benson

Ivy Ho (Faculty Sponsor)

Department of Psychology, UMass Lowell, Lowell, MA, 01854

Women's Body Image and Well-Being

The purpose of this study is to examine whether women's body uneasiness and body satisfaction is associated with their psychosocial well-being. Female students are given questionnaires to measure body uneasiness, body satisfaction, depression, social functioning, and eating behaviors. Data collection is ongoing at this time. It is predicted that, compared to women who report less uneasiness with their bodies, women who report high body uneasiness will report more interpersonal problems, more depression, and more restrained eating behavior. It is also predicted that, compared to women with low body satisfaction, women with high body satisfaction would report less interpersonal problems, less depression, and less restrained eating behavior.



481 Room 101 10:45-11:45 Board 37

Marisa Biondi

Zsuzsa Kaldy (Faculty Sponsor)

Department of Psychology, UMass Boston, Boston, MA, 02125

Measuring Iconic Memory Capacity in 6-month-old Infants

Background: Typical same/different tests of infants' memory - where infants' reactions are tested when a change is made to a set of objects, say, while briefly occluded or invisible - amount to 'whole report' tests. Whole report tests typically underestimate memory capacity; the crucial innovation was the partial report paradigm (Sperling, 1960). Aims: Adapt and apply a partial report test of infants' very short term memory (VSTM), or iconic memory span. Methods: Five groups of 10 to 12 infants (age range: 5;0-6;30) were tested, each with a different set size: 2, 4, 6, 8 or 10 items. In each trial, infants were presented with a set of identically shaped, but differently colored items, spaced symmetrically around central fixation. After a 1000 ms exposure, a randomly chosen pair of neighboring items disappeared. Following a 500 ms delay, the two items reappeared, always with one changed to a new color and the other unchanged. This display remained on for 2000 ms (eye movements were recorded throughout the trial with a Tobii T120 eye tracker). The sudden offset of the two items itself was the partial report post-cue, designed to draw attention and trigger their coding from VSTM into more durable short-term memory. Only by remembering all items in the set would infants be able to distinguish between the changed vs. unchanged items. Results: In what amounts to a two-alternative forced choice (2AFC) test, we measured which of the two reappearing items was 1) fixated first and 2) for a greater total time. For a set size of 2, 4 and 6, infants showed significant novelty effects, looking first and longer at the changed item. With higher set sizes (8 or 10), results were negative. Conclusion: We created a partial report paradigm for infants. Infants remembered two items cued randomly from a set of up to 6 items, indicating a robust capacity of iconic memory of at least 6 items.



482 Room 101 2:35-3:35 Board 43

Megan Hadley

Rohan Madan

Dimitrios Booras

Doreen Arcus (Faculty Sponsor)

Department of Psychology, UMass Lowell, Lowell, MA, 01854

Foster Care Awareness on Campus

Thousands of Massachusetts children under 18 are in need of care and protection that they do not receive from their parents. Under the care and protection of the state, these children are enrolled in foster care. One of the biggest challenges for this system is the inadequate number of families available to provide foster care. Compared with 8694 children in care at the end of 2009, there were only 2265 approved foster families who were not restricted to a specific case (e.g., relative care; MA DCF, 2009). As the honors component for a course in Developmental Psychopathology, we are organizing and evaluating an annual event at UMass Lowell designed to promote awareness of the needs of children in care and the need for families to foster. An informational session will kick off a month long drive to collect shoes for children, and a survey will assess whether attendees at the session are persuaded to consider fostering at some future point. We will describe our program and results, and discuss implications for long term foster parent recruitment.



483 Room 101 2:35-3:35 Board 55

Jessica Spencer

Ursula Boynton

Pamela Ludemann (Faculty Sponsor)

Department of Psychology, Framingham State College, Framingham, MA,
01702

Online Dating: Perceptions of Women's and Men's Dishonest Descriptions

This study used a novel method to investigate the different ways men and women are perceived as misrepresenting themselves in online profiles. A sample of 115, mostly Caucasian, college students were presented with a mock online dating profile depicting either a male or a female. These students were asked to assess whether or not the characters exaggerated any of their information and, if so, what categories of information were inaccurate. Questionnaires assessed perceived areas of deception, reasons for the deceptions, and attitudes toward lying and body self-esteem. Preliminary results suggest that gender differences in perceived exaggerations of the mock online dating profiles were absent. However, men and women perceived that the male character lied about his finances and social status, whereas the female character was perceived as lying about physical appearance. This study provides support for previous survey-based research suggesting that women and men lie about different traits when seeking dating partners.



484 Room 101 3:50-4:50 Board 50

Rachel Carroll

Pamela Ludemann (Faculty Sponsor)

Department of Psychology, Framingham State College, Framingham, MA,
01702

Why are College Students Anxious? Social and Academic Demands of Student Life

This research was designed to evaluate whether anxiety in a collegiate setting stems from predisposed traits or from situational stress. Additionally, gender differences in anxiety were examined. Surveys assessing anxiety, anxiety disorders and situational stressors were completed by 160 college students. The preliminary results suggested that anxiety was perceived as primarily caused by situational stressors. Furthermore, students' high on anxiety traits or disorders reacted more intensely in stressful situations than students who did not report predisposed anxiety traits. Finally, it was also found that women scored higher on anxiety levels than men. For anxious students, stress reduction measures may be beneficial for promoting academic success.



485 Room 101 10:45-11:45 Board 38

Deanna Collins

Susan McPherson (Faculty Sponsor)

Department of English, Quinsigamond Community College, Worcester, MA,
01606

The Psychology of Color and Its Application to Website Design

Every person perceives color differently as colors invoke a range of emotions. Knowing the underlying cause of the emotional connection to each color allows groups such as designers and graphic artists to understand the best ways to use color in relation to advertising. This knowledge can be applied to website design, which is a fast growing form of marketing and advertising, to achieve optimal results in business and networking. My research investigates how the brain processes color and why certain emotions are applied to specific colors. Since color is an important tool in website design, the application of this knowledge could enhance the ability of the website to reach its target audience, as well as help the business it is advertising.



486 Auditorium 3:50-4:50 Board 34

Amanda Irving

Vanessa Colomba

Doreen Arcus (Faculty Sponsor)

Department of Psychology, UMass Lowell, Lowell, MA, 01854

Attributional Style and Trauma History

To examine whether young adults' beliefs about themselves and others would vary with the degree of trauma they had experiences, 100 college students completed the Attributional Style Questionnaire (ASQ; Peterson et al., 1981) and wrote short narratives in response to ambiguous picture stimuli. The ASQ asks individuals to interpret a series of hypothetical situations--some positive and some negative--and attribute causality to the individual or the environment. The narratives are currently being coded for complexity and emotional tone. This poster will describe results and discuss the implications for understanding the long term consequences of traumatic experiences.



487 Room 101 2:35-3:35 Board 37

Jamie Connelly

Doreen Arcus (Faculty Sponsor)

Department of Psychology, UMass Lowell, Lowell, MA, 01854

College Adjustment for Students from the Foster Care System

Nationally, 13% of the youth in the foster care system enroll in higher education. Unfortunately only 3% obtain a bachelor's degree in comparison with 27% of the general population (Emerson, 2007). Obtaining a bachelor's degree is important for financial stability and independence for everyone, but perhaps even more so for children who were involved in the foster care system, who may not have anyone else to depend on. Very little information is known about the college experiences of youth in foster care, but a study by Dworsky (2009) found that students in California and Washington, who were involved with the foster care system, enjoyed participating in programs offered specifically for foster care youth. They also found all of the services they received to be important, specifically in financial aid, housing assistance, mentoring, help choosing courses and/or a major, as well as tutoring. Participants also reported feeling a sense of community or family from the program and that they received help coping with stressful situations. There are currently no data to show that these programs have been able to increase the number of students from the foster care system who earn a bachelor's degree because it is difficult to track, but the assistance and ability to cope with problems should help the students make progress toward a degree. The state of Massachusetts has set up financial assistance for foster youth who enroll in public education through tuition waivers and grants, but most public schools do not have programs to specifically work with children from the foster care system. Because Lowell is in the top 5% of cities and towns in regard to foster care involvement (MA Citizens for Children, 2001), UMASS Lowell would be a great place to start a program for these students. Using an online survey I will investigate the experiences of former/current foster care youth at UMASS Lowell; specifically their experiences in foster care, trauma history, college adjustment, current relationships, coping strategies and what they feel will help keep them in enrolled in college. The results will be examined for trends among the data and scores on the college adjustment and trauma history scales will be compared to national norms and results from the general population at UMASS Lowell.



488 Auditorium 1:20-2:20 Board 5

Danielle Dean

Linda Isbell (Faculty Sponsor)

Department of Psychology, UMass Amherst, Amherst, MA, 01003

Mood Effects on the Use of Weight Stereotypes During Interview Question Selection

Affective experiences are ubiquitous in our everyday lives. As such, it is not surprising that they have a profound influence on how we process information across a variety of domains. Research generally reveals that happy moods lead individuals to rely more on stereotypes when judging others, whereas sad moods do not. This study extends prior research by investigating how mood influences what information individuals seek out about another person. Following a happy or sad mood manipulation, participants interviewed either an average weight or an overweight female job applicant in a computerized task. As predicted, an interaction between participants' mood and job applicant weight emerged, $F(1, 112) = 4.04, p = .05$. This interaction revealed that happy participants relied on negative weight-related stereotypes and asked the average weight applicant more positive questions than the overweight applicant (3.85 v. 3.29), $F(1, 112) = 3.78, p = .05$, whereas sad participants selected an equal number of positive questions to ask both applicants, regardless of weight (3.47 v. 3.70 for the average and overweight applicants, respectively), $F(1, 112) < 1$. These findings support the hypothesis that happy participants relied on negative weight stereotypes when selecting interview questions, whereas sad participants did not. This work has important consequences for any situation in which individuals acquire information to form an impression, such as an interview context.



489 Room 101 3:50-4:50 Board 55

Lori Dikun

Maureen Perry-Jenkins (Faculty Sponsor)

Department of Psychology, UMass Amherst, Amherst, MA, 01003

The Relationship Between Violated Expectations and Marital Quality During The Transition to Parenthood

Research indicates that the transition to parenthood is a challenging time for married couples. This study examines how husbands' and wives' violated expectations, about various aspects of parenting and marriage, across the transition to parenthood are related to spouses' feelings of love for one another. Data from 153, dual-earner, expectant couples are utilized. Parents participated in face-to-face interviews five times across the transition to parenthood and were asked to answer questions about their marital relationship as well as a series of questions assessing their expectations regarding the division of labor, their parenting ability, leisure time, the marital relationship and work-family balance. Results revealed a significant, positive correlation between wives' violated expectations about the work-family balance and their feelings of love towards their husbands, such that as wives reported more challenges managing work and family issues than expected, the less love they reported for their husbands. There was also a significant negative correlation between wives' violated expectations about leisure time and both wives and husbands' feelings of love towards their partner. Specifically, the less time wives have for personal activities (e.g., exercise, relaxing, time alone) compared to what they expected the less marital love both spouses reported. Further analyses will examine the additive effects of multiple violated expectations as predictors of change in marital love across the transition to parenthood.



490 Room 101 2:35-3:35 Board 51

Kelly Donohue

Rebecca Spencer (Faculty Sponsor)

Department of Psychology, UMass Amherst, Amherst, MA, 01003

Sound as a Contextual Cue for Sleep-Dependent Memory Consolidation

Sleep benefits learning. Performance improvements on a number of tasks are greater following a 12-hour interval with sleep relative to a 12-hour interval spent a wake. Sensory cues during learning and subsequent sleep can enhance this sleep benefit. Using an odor as a contextual cue, Born et al. (2007) found that there was an increase of memory consolidation during sleep if the material was learned in the presence of the odor and the participant then slept in the presence of the same odor stimulus (Born et al, 2007). The goal of our study was to examine the generality of the enhancement of sleep-dependent consolidation with sensory cues. Specifically, we were interested in a potentially more practical stimulus, sound. We had 60 participants each take part in a word-pair learning task. This task had three components, encode and immediate recall which were done in the first session and delayed recall which was executed 12 hours later. Participants were split into three groups. All of the groups were exposed to the task with the sound of the ocean playing in the background. For three of these groups, the 12 hour period between sessions contained sleep (e.g., 8 pm. to 8 am). Of these groups, one group slept with sound of the ocean throughout the night. To test the hypothesis that the benefit of the sound is to trigger the context associated with the memory, a second group slept with the sound of rain during sleep. The third group served as a control group and no sound was played during sleep. Delayed recall was tested the following morning in the absence of sound. Our results demonstrated that sleeping with any sound (whether it was the same or a different sound than the material was learned with) decreased the amount of information that was remembered in the morning. We hypothesize that unlike smell, sound may provide a mild disruption of sleep which decrements the off-line processing of memories.



491 Room 101 2:35-3:35 Board 48

Katelyn M Pfeiffer

Katelin Egan

Deborah McMakin (Faculty Sponsor)

Department of Psychology, Framingham State College, Framingham, MA,
01702

Assessing the Effects of Weight Related Feedback on Body Esteem: Do Accuracy and Relationship Matter?

Assessing the Effects of Weight Related Feedback on Body Esteem: Do Accuracy and Relationship Matter? Research indicates that receiving inaccurate weight related feedback can adversely affect body esteem. This study examined the effects of body esteem, perceived harm of feedback, and likelihood to intervene when witnessing a female receive inaccurate and accurate weight-related feedback from strangers or friends. Participants included 120 female college students who were randomly assigned to read one of four scenarios depicting inaccurate or accurate weight related feedback from strangers or friends. Participants completed a pre- and post body esteem measure and reported perceived harm of the feedback and likelihood to intervene with the scenario events. Preliminary results indicated that participants who witnessed a female receiving inaccurate weight related feedback from a stranger reported higher likelihood to intervene than when the feedback was accurate or came from a friend. Results also indicated that participants who witnessed a female receiving inaccurate weight-related feedback reported lower body esteem than those who witnessed the female receive accurate weight related feedback. Participants perceived inaccurate weight-related feedback as more harmful than accurate weight related feedback. Factors that influence the psychological impact of weight related feedback are discussed.



492 Auditorium 1:20-2:20 Board 1

Shannon Egna

Lisa Scott (Faculty Sponsor)

Department of Psychology, UMass Amherst, Amherst, MA, 01003

The Development of Attention and Memory Abilities during the First Year of Life

During infancy, the development of the ability to tell the difference between two faces within an uncommonly experienced face group declines from 6- to 9-months-of-age (Kelly et al., 2007; Pascalis, et al., 2002; 2005; Scott & Monesson, 2009; in press). This decline in face discrimination has recently been found to be dependent on experience learning to match a face with an individual-level proper name during the first year of life (Scott & Monesson, 2009; in press). However, it is unknown how the development of attention and memory abilities contributes to the neural specialization of structures underlying face processing or whether experience with objects leads to similar discrimination and neural specialization. Here, four groups of infants completed pre-training (6 months) and post-training (9 months) behavioral (Visual-Paired Comparison) and electrophysiological (Event-Related Potentials; ERPs) assessments, which indexed face and object discrimination. The behavioral task was designed to examine infants' attention and memory for trained versus untrained stimuli by measuring fixation durations across conditions. ERP components, which index attention (Negative Component; Nc) and memory representations (Positive Slow Wave; PSW) were examined both before and after training in response to trained and untrained stimuli. Following the pre-training assessment, two groups of infants were sent home with training books of monkey faces or of objects (strollers), which were labeled at the individual level (i.e., all faces and strollers had individual names). Two more groups of infants were sent home with books of monkey faces or strollers labeled at the category level (i.e. all faces were named "monkey" or "stroller"). When infants returned at 9-months results revealed both behavioral and electrophysiological (Nc; PSW) differences across training groups and between ages. These results suggest that infants trained at the individual level exhibited differential attention and memory for trained stimuli relative to those trained at the category level. Moreover, these results further implicate the importance of learning individual level names for the development of face processing.



493 Auditorium 1:20-2:20 Board 7

Kristie Fierro

Heather Richardson (Faculty Sponsor)

Department of Psychology, UMass Amherst, Amherst, MA, 01003

Binge Drinking in Adolescent Male and Female Rats

Alcohol is the most commonly used substance during adolescence. Teenagers engage primarily in “binge drinking,” defined by the National Institute of Alcohol Abuse and Alcoholism as an excessive pattern of alcohol consumption that brings a person’s blood levels to 0.08 gram% (g%) or higher, ~4/5 drinks in women/men within a 2-hour period. Epidemiology studies show that early binge drinking is associated with increased risk of addiction, emotional disorders, and cognitive deficits later in life. The present study uses an operant self-administration model of binge drinking to elicit high bouts of voluntary alcohol intake during adolescence. This model is used to 1) investigate sex differences in drinking parameters and blood alcohol levels in adolescent male and female rats and 2) determine the long term effects of binge drinking during adolescence on the body’s response to stress in adulthood.



494 Room 101 2:35-3:35 Board 50

Peter Garas

Jeffrey Blaustein (Faculty Sponsor)

Department of Psychology, UMass Amherst, Amherst, MA, 01003

The Long-term Neuroendocrine Effects of Pubertal Stress Exposure in the Female Mouse

Puberty is a very dynamic time in life with major changes occurring both physically and mentally. Using a female mouse model, our lab has recently shown that a stressor during puberty, in this case shipping, causes behavioral defeminization involving decreased sexual receptivity to the ovarian hormones, estradiol and progesterone. The goal of this study is to elucidate changes in the adult brain that result from a pubertal stressor. Specifically, the neuronal expression pattern of estrogen receptor- α (ER- α), a receptor necessary for proper response to estradiol, was examined in adulthood of female mice that were stressed or not during puberty. In experiment one, mice were shipped at 3, 4, or 6 weeks of age, ovariectomized at 8 weeks and underwent six weeks of sex behavior testing. The purpose was to replicate the original finding that mice shipped during the peripubertal period show a defeminized response to ovarian steroid hormones in adulthood. In experiment two, mice were shipped at either 4 or 6 weeks of age, ovariectomized at 10 weeks, and underwent sex behavior testing for two weeks. One week later, brains were removed, and sections were analyzed for number of ER- α containing cells using immunocytochemistry. We predict a decrease in ERs in the peripubertally stressed mice that are hyporesponsive to estradiol in adulthood. These experiments will result in a better understanding of the cellular mechanisms by which a peripubertal stressor results in an enduring decreased response to estradiol.



495 Room 101 10:45-11:45 Board 50

Patrick Geuder

Susan Dutch (Faculty Sponsor)

Department of Psychology, Westfield State College, Westfield, MA, 01086

Susceptibility to the Horizontal-Vertical Illusion: Automatic vs. Analytic Processing

Differential susceptibility to the horizontal-vertical illusion under conditions of automatic vs. analytic processing was tested utilizing the methods of Bodenhausen(1990). Specifically, participants were tested either under optimal conditions (automatic processing) or under non-optimal conditions (analytic processing). This was done by alternately assigning 20 participants to either a "morning" or "evening" group; i.e., they were either tested between 8:00-9:30 AM (morning group) or between 8-9:30 PM (evening group). At the end of the session, the researcher individually asked participants to self-report as to whether they considered themselves a be a "morning" or an "evening" person. This self-report was used to classify the participants as being in either the "optimal" (i.e., congruent) or "non-optimal" (i.e., incongruent) group. More specifically, the congruent group is defined as "morning" people who were tested in the morning (or vice versa) and the incongruent group was defined as participants assigned to a group that did not match their self-reported categorization (i.e., morning" people who were tested in the evening or "evening" people who were tested in the morning). Following Bodenhausen (1990), we assume that the congruent group of participants will utilize automatic processing while the congruent group will utilize analytic processing when judging the horizontal-vertical illusion. Based on this assumption, we predicted a difference in the susceptibility to the horizontal vertical illusion based on the type of processing utilized. Results indicate that the incongruent group (utilizing analytic processing) is less susceptible to the illusion than the congruent group (utilizing automatic processing). Ramifications of these results will be discussed.



496 Auditorium 1:20-2:20 Board 4

Sophie Higgins

Joan Liem (Faculty Sponsor)

Department of Psychology, UMass Boston, Boston, MA, 02125

Objectification and Sexual Entitlement in Women Aged 18-25

Research into many aspects of female sexuality is limited. This study will examine the relation between female sexual entitlement, defined as the sense of feeling entitled to pleasure from sexual experiences, and self-objectification. While prior studies have focused on the ability to experience sexual desire and pleasure, this study will focus on entitlement because without a sense of entitlement to pleasure, it is unlikely that such pleasure can be sought out and achieved. Self-objectification is defined as occurring when women or girls internalize the view that they are no more than their body (or body parts) and that their value lies in how they can be used by others. Objectification theory posits that women are conditioned to take an appearance-based rather than competence-based view of themselves, resulting in a range of consequences including body shame, sexual body esteem, and body-consciousness during sex. Body shame is defined as shame related to one's appearance, often brought about by one's comparison to societal ideals. Sexual body esteem encompasses self-perceptions relating to sexual attractiveness and desirability. Body-consciousness during sex is the habitual awareness and monitoring of one's body during sexual experiences. It is hypothesized that self-objectification decreases sexual entitlement and does so by increasing body shame, decreasing body esteem, and increasing body consciousness during sexual activity. An internet survey has been used to collect data from women aged 18-25 in the greater Boston area (N= 600).



497 Room 101 2:35-3:35 Board 38

Catherine Balduf

Theresa Iannetta

Deborah McMakin (Faculty Sponsor)

Department of Psychology, Framingham State College, Framingham, MA,
01702

The Perceived Loneliness and Stigmatization Levels of Online Daters

Previous research indicates a connection between loneliness levels and date seeking through online dating sites and face to face interactions. However, less is known about perceived stigmatization levels of those who seek dates online and whether or not they are perceived to be lonely. The purpose of this study was to investigate if perceived levels of loneliness and stigmatization differed by gender and mode of date seeking. A sample of 120 college students were randomly assigned to read one of four scenarios depicting either a male or female seeking a date online or through a face to face encounter. Participants then completed the Social/Emotional Loneliness Inventory and the Stigmatization Scale. A series of two factor ANOVA's and correlations will be computed to examine differences in perceptions of loneliness and stigmatization. It is hypothesized that college students will perceive online date seekers to be lonelier and more stigmatized than face to face date seekers, regardless of their gender. It is also hypothesized that college students will perceive females who seek dates online as the most lonely, compared to males who seek dates online or face to face and females who seek dates face to face. Overall, online daters will be perceived as lonelier and as more stigmatized by college students than face to face daters. The perceptions that today's online daters face in terms of loneliness and stigmatization levels will be discussed.



498 Room 101 2:35-3:35 Board 53

Roger Matar, Amanda Irving , Doreen Arcus (Faculty Sponsor)
Department of Psychology, UMass Lowell, Lowell, MA, 01854

First Jobs Academy for Youth Aging out of Foster Care

Among the 10,331 individuals in foster care at the end of 2009, 40% were between ages 12 and 17 and another 14% were young adults in the transition from foster care to independence (MA DCF, 2009). Youth who “age out” of foster care are vulnerable group, at risk for a number of negative outcomes including poverty and unemployment. Recently the Annie E. Casey Foundation implemented a novel jobs training program in collaboration with an employer, Hannaford’s grocery stores, in Maine. In addition to training to the youth, First Jobs Academy provided training to managers in areas such as adolescent development, learning styles, and the effects of trauma. As the program is replicated in Massachusetts, we are participating in an evaluation designed to track progress before and after training using both an experimental and control group. We will present a summary of known risk and resiliency factors for youth aging out of foster care and of baseline assessments of youth and managers.



499 Auditorium 1:20-2:20 Board 8

Kristen Janko

Jerrold Meyer (Faculty Sponsor)

Department of Psychology, UMass Amherst, Amherst, MA, 01003

Is Availability of the Serotonin Transporter (SERT) Necessary for Preconditioning in Rats Treated during Adolescence with MDMA?

3,4-methylenedioxymethamphetamine (MDMA, Ecstasy) is an entactogenic drug of choice for many adolescents and young adults at large parties, clubs and raves. In the rat brain, previous research has shown that the presence of a selective serotonin reuptake inhibitor (SSRI) prior to a MDMA binge in adulthood significantly prevents the neurotoxic effect on serotonergic cells that would have normally occurred. Moreover, intermittent low doses of MDMA in the adolescent rat brain have been shown to protect the serotonergic system against a similar toxic insult of MDMA in adulthood ("preconditioning"). The present study examined whether access to the serotonin transporter (SERT) is necessary for such preconditioning to occur in rats exposed to MDMA prior to the adult binge treatment. Every fifth day from postnatal day (PD) 35-60, rats were given either saline or the SSRI paroxetine (10mg/kg, i.p.) 1 hour prior to dosing with saline or MDMA (10mg/kg x 2, s.c.). On PD 67, the four groups were divided in half. One half received saline injections while the other half received the MDMA binge (10 mg/kg once every hour for 4 consecutive hours). Drug-induced changes in behavior were assessed by measuring locomotor activity on the day following the binge (PD 68). On PD 74, the rats sacrificed and brain tissues including the striatum, parietal cortex and hippocampal regions were collected for analysis of SERT binding as a measure of serotonin neurotoxicity. The biochemical analyses are currently being performed. However, preliminary data from the behavioral observations suggest that the administration of an SSRI immediately before adolescent MDMA treatment may prevent the neuroprotection previously seen in the rat brain.



500 Room 101 2:35-3:35 Board 40

Elana Knight

James Chambers (Faculty Sponsor)

Department of Chemistry, UMass Amherst, Amherst, MA, 01003

Using Electrophysiology to Study the GluR1 and GluR2 Subunits of the AMPA Receptor

Glutamate, the main excitatory neurotransmitter in the brain, has many different functions and uses depending on location and receptor subtype. Glutamate receptors play an important role in synaptic plasticity, learning and memory, and have been shown to be involved in multiple neuropathies such as anxiety, Parkinson's disease, and epilepsy. The AMPA receptors, a subfamily of the ligand-gated ion channel, is made up of four subunits – GluR1, GluR2, GluR3 and GluR4. Functional channels are typically found as heterotetramers consisting of two units of GluR2 and two of either GluR1, R3 or R4. Receptors lacking GluR2 subunits can be permeable to calcium in a regulated fashion, but dysfunction can potentially lead to excitotoxicity in neurons resulting in mitochondrial failure and cell death. This condition has been observed in Alzheimers disease, amyotrophic lateral sclerosis, and stroke. Chinese hamster ovary cells (CHO cells), a commonly-used immortal cell line, contain no detectable neurotransmitter receptors, making them useful for testing the responses of specific receptors to different agonists. In order to selectively test the different components of the AMPA receptor, we transfected the CHO cells with a bicistronic plasmid containing either GluR1 or GluR2 DNA along with red fluorescent protein (RFP). Transfected CHO are presently being used for combined patch-clamp electrophysiology and epifluoresence imaging experiments to evaluate the potential of a newly developed protein labeling strategy.



501 Room 101 2:35-3:35 Board 42

Molly Korobkin

Ashleigh Hillier (Faculty Sponsor)

Department of Psychology, UMass Lowell, Lowell, MA, 01854

Feelings of Self-Confidence in Adolescents with Autism Spectrum Disorders:
The Role of a Music Intervention Program

This study examined the extent to which “SoundScape,” an 8-week music intervention program for adolescents with autism spectrum disorders (ASD), served to increase levels of self-confidence among participants. Three types of self-confidence were investigated: social self-confidence, task-oriented self-confidence, and general self-confidence. Social self-confidence is the ability to successfully use social skills, engage in social interaction, and maintain relationships. Task-oriented self-confidence is the ability to successfully participate in musical activities such as using music production software. General self-confidence is the addition of both social self-confidence and task-oriented self-confidence. Past studies have revealed that adolescents diagnosed with autism perceive themselves to be less competent in social, physical, and academic pursuits. Music programs have increased participants’ musical abilities, attention behaviors, social skills, and behavioral challenges. As such, we hypothesized that positive effects in self-confidence would be seen following participation in the music program. Interviews in the third and seventh weeks of the 8-weekly sessions were performed. Questions ranged from “How well do you think you are doing compared to the others in the program?” to “Is the program having any positive or negative effects on you?” Interviews will be coded for the three types of self-confidence by the researcher and a third-party uninformed in the research. The coded interviews for each participant will be compared between week three (early in the program) and week seven (at the end of the program) in a within groups design. Conclusions will be made based on the results and suggestions for future research will be discussed.



502 Room 101 2:35-3:35 Board 45

Emma N Fortin, Kristen Murphy, Stephanie L Herring, Victoria G Regan, Stephanie Kunst , Bridgett Perry-Galvin (Faculty Sponsor)
Department of Psychology, Framingham State College, Framingham, MA, 01702

Male Versus Female Attitudes and Behavior toward Relationship Cheating

When it comes to the controversial “hot-button” issue of infidelity, people are likely to have a range of opinions regarding what is deemed both acceptable and unacceptable in a given situation. This survey examined the relation of gender as well as self-esteem to attitudes and behaviors toward cheating on a significant other. A sample of 60 undergraduates (30 females) from a small liberal arts college completed questionnaires that measured self-esteem as well as their attitudes and behaviors toward cheating on a significant other. Results indicated a strong positive correlation for males between remorse and cheating behavior, and an even stronger positive correlation for females between remorse and cheating behavior. Results also indicated a strong positive correlation for females between cheating behavior and self esteem. These findings suggest that the relationship between cheating and remorse is strong for women but not related for men. Interestingly, the findings suggest that females who exhibit more cheating behavior actually feel better about themselves than one would expect. In contrast, the lack of a relationship between cheating and self-esteem for males suggests that cheating behaviors and male self-esteem are not related. Results are discussed in light of the impact of dating relationships during college years on student self-esteem levels.



503 Room 101 3:50-4:50 Board 53

Ashley E Noonan

Stephanie LaGrassa

Pamela Ludemann (Faculty Sponsor)

Department of Psychology, Framingham State College, Framingham, MA,
01702

College Students' Reported Misuse of Prescription Drugs

The College Students' Reported Misuse of Prescription Drugs study was conducted to examine the misuse of prescription medication used for treating ADHD. The goal of this study was to better understand and determine reasons for stimulant misuse as related to academic and social contexts. This study was also used to examine students' acceptance of prescription drug misuse depending on the reasons for the misuse. Surveys assessing personal and peer misuses, justification of misuse, and access to prescription medications were completed by 120 State college students between the ages of 18 to 25. In support of our hypothesis, results showed that students with legitimate prescriptions for stimulants reported that they had been approached for sale of their medications. Also consistent with our hypothesis, more students reported academic reasons for misuse than for recreational reasons and that academic misuse was not uncommon. Evidence showed that students presented with scenarios depicting prescription misuse by a peer for academic reasons rated such use as more acceptable than misuse for recreational purposes. This risk of academic misuse by a hypothetical student was also perceived as more likely to occur before final exams than at mid-semester. Our evidence of prescription drug availability and justification of misuse by college students is of concern.



504 Auditorium 1:20-2:20 Board 6

Dawn M Palladini

Megan Linehan

Justin Bailey (Faculty Sponsor)

Department of Psychology, Framingham State College, Framingham, MA,
01702

Negative Consequences on College Students' Alcohol Consumptions: Sexual and Aggression Risks

This study was designed to explore college students' perceptions of potential negative consequences of drinking. One hundred and one college students read one of two scenarios depicting a gender ambiguous typical college student who either enjoyed drinking on the weekends or did not enjoy drinking. Participants were asked to rate how likely they thought the scenario character would engage in risky alcohol-related thoughts, sexual behaviors, and aggression. They also provided information about their own alcohol-based experiences in the same risk areas. Results indicated that both men and women perceived the drinking scenario character to have more negative overall consequences than the non-drinker. The results of the scenario character indicated that men and women perceived the drinker than non-drinker to show more aggression, hook up under the influence, engage in unprotected sex and to be involved in sexual assaults. Their self reports indicated moderate to higher rates of involvement in alcohol consumption and risky behaviors between men and women. These included higher rates in unprotected sex, not remembering the previous night, have gotten sick, had sexual intercourse with a stranger, hooked up (everything but intercourse), been touched inappropriately and have become physically aggressive. These findings suggest that college students perceive risks, but continue to not apply these awareness' to their own high risk alcohol behaviors.



505 Room 101 10:45-11:45 Board 49

Henry Lo

Zsuzsa Kaldy (Faculty Sponsor)

Department of Psychology, UMass Boston, Boston, MA, 02125

A Saliency-Mapping Method for Testing Infants' Visual Working Memory for Speed vs. Luminance

The purpose of this study is to understand the process of development of visual object recognition in infants. We hypothesized that infants remember and detect earlier in development those features which are more characteristic of objects. To test this hypothesis, we will be testing infants' visual working memory for the features of color, luminance, and motion (speed). In order to obtain 'fair' comparisons between the different features, we first obtain equally salient featural differences in a saliency-calibration experiment. Following this, we intend to present the three types of stimulus change to the infant among an array of baseline stimuli. We will determine whether infants remember these changes by comparing their looking times in change and no-change conditions. We expect infants to remember color better than luminance or motion.



506 Room 101 10:45-11:45 Board 48

Amanda Madden

S. Tiffany Donaldson (Faculty Sponsor)

Department of Psychology, UMass Boston, Boston, MA, 02125

The Effect of Housing on the Expression of Anxiety and Subsequent Drug Abuse Vulnerability in Long-Evans Rats

Preclinical literature concerning psychostimulant addiction has repeatedly illustrated that there is a correlation between anxiety and drug addiction vulnerability. Animals that have a naturally higher anxiety level respond more to novel objects/environments and show increased sensitivity to psychostimulants. While anxiety levels have a strong genetic component, it is likely that there are other factors contributing to the expression of that genetic predisposition. The current study is investigating the hypothesis that housing will mediate the expression of those anxiety traits, and reduce the vulnerability to drug addiction that goes along with them. 85 Male Long-Evans rats were bred to express either high-anxiety (HA) or low-anxiety (LA) and were placed into isolated, social, or enriched housing conditions after weaning. All animals were later tested for novelty response in a Conditioned Place Preference paradigm, for anxiety in an Elevated Plus Maze, and for stimulant response to low-dose amphetamine (0.5 mg/kg) in a Locomotor Activity (LMA) paradigm. Preliminary analysis of trends in the data seems to indicate that housing conditions do play a mediating role in the expression of genetic anxiety traits, but further analysis will be necessary before any conclusions can be made. This investigation will also include brain tissue analysis to determine what, if any, effects housing has on brain areas and neurotransmission implicated in drug addiction.



507 Room 101 3:50-4:50 Board 43

Bridget M St. Pierre

Joel Margi

Jason Lawrence (Faculty Sponsor)

Department of Psychology, UMass Lowell, Lowell, MA, 01854

Attachment Style and Technology: A Look at Technological Communicative Behaviors in Three Distinct Attachment Classifications

This study examined whether people with different relationship styles have distinct ways of using social networking technology (e.g., facebook, texts, emails, twitter) in their romantic relationships. According to attachment theory, individuals can have one of three relationship styles: 1) people with a secure relationship style tend to trust others and feel comfortable showing their emotions; 2) people with an anxious style are overly dependent and worry that others will abandon them; 3) people with an avoidance style tend to suppress their emotions and keep distant from others. One hundred twenty-five college students completed a questionnaire that assessed their relationship styles, positivity and supportiveness of their networking messages, and level of relationship satisfaction. The results showed that the more secure students' relationship style the more they sent positive and supportive messages to their partners and the higher their relationship satisfaction. The more anxious the students' relationship style, the less they sent positive and supportive messages to their partners and the lower their relationship satisfaction. There was no relationship between students' avoidance style and how many positive and supportive messages they sent their partner and relationship satisfaction. These results provide further evidence that relationship styles predict distinct behaviors within a relationship.



508 Room 101 2:35-3:35 Board 56

Lauren McKay

Paul Nestor (Faculty Sponsor)

Department of Psychology, UMass Boston, Boston, MA, 02125

Examining the Relationship Between Social Anhedonia and Gaze-Evoked Inhibition of Return

Social anhedonia (SA), a major negative symptom of schizophrenia, is defined as an individual's lack of the ability to feel pleasure by participating in social interactions. This study is an investigation into a possible relationship between SA and inhibition of return (IOR), a visual attention phenomenon in which visual return to a previously-cued location is markedly slower than it is to an uncued location. The current hypothesis is based upon previous research in the UMASS-Boston Applied Neuropsychology Lab in which individuals with schizophrenia demonstrated an abnormal IOR response to eye-gaze cues. College students ($n=30$) will respond to the Cognitive Slippage Scale, the Revised Social Anhedonia Scale, and the Snaith-Hamilton Pleasure Scale to assess their levels of disturbed thinking and SA. Those results will be compared to their IOR responses as gathered by measuring saccadic eye movements and manual responses to trials based on Posner's standard paradigm as modified to utilize eye-gaze cues that mimic visual cues employed throughout common social interactions. It is hypothesized that elevated levels of SA will correlate with abnormal IOR responses marked by faster visual return to previously-cued locations as opposed to uncued locations. Evidence of a relationship between SA and IOR in a general population will justify future work examining the same relationship within a schizophrenic population.



509 Room 101 10:45-11:45 Board 47

Jaye McLaren

Robert Kunzendorf (Faculty Sponsor)

Department of Psychology, UMass Lowell, Lowell, MA, 01854

Narrative Study of Best and Worst Experiences in Sport

This study uses a qualitative analysis to assess subjects' descriptions of their best and worst experiences in sport. 105 UMass Lowell students provided these descriptions as part of a previous study on sport and character. This study takes the qualitative data that did not yield any results and analyzes them with narrative analysis. Agency vs. communion narratives ("I" vs. "we" narratives) and nominative first person vs. objective first person narratives ("I" vs. "me" narratives) are to be categorized as "present positive," "present negative," "present neutral," or "absent." These categories are then to be analyzed across three sets of independent variables: one within-subject variable and two between-subject variables. The within-subject variable contrasts the best versus worst experiences in sports, while the between subject variables include gender (male versus female), playing high school sports versus not playing, and the interaction between gender and the latter variable. Lastly, the study assesses seven personality facets that might either reflect or influence best versus worst sport narratives. The results of this study might be useful for coaches and athletes alike, because analysis of these sport narratives might show how the particular characteristics or traits of athletes covary with the way they communicate their views and experiences.



510 Room 101 2:35-3:35 Board 54

Corrie Miller

Deborah McMakin (Faculty Sponsor)

Department of Psychology, Framingham State College, Framingham, MA,
01702

Are Social Networking Profiles Too Personal?

Social networking sites have become increasingly popular in the last four years. However, both popular and scientific literature have indicated that social networking users often post highly personal information such as their home address, thereby increasing their vulnerability to identity theft, stalking, and home invasions. Despite these safety risks, there is scant research investigating social networking users' use of privacy settings and factors that influence perceptions of online safety. The purpose of this study was to investigate privacy setting awareness and consider if gender and type of information posted on a profile influenced perceptions of online safety. A sample of 120 college students completed a social networking and privacy policy awareness survey and were then randomly assigned to read one of four social networking profiles depicting a male or female with either highly personal information or impersonal information. Participants then completed measures of perceived privacy policy awareness and online safety for one of the four profiles. A series of ANOVA's and correlations will be computed to examine if there are differences in perceived online safety by gender and type of information. It is predicted that participants will report higher safety concerns for those whose profile contained highly personal information than those whose profile did not contain highly personal information regardless of their gender. In addition, college students will report highest concerns for online safety for females who post very personal information. Implications for privacy policy and safety awareness will be discussed.



511 Room 101 3:50-4:50 Board 49

Leah Mitchell

Pamela Ludemann (Faculty Sponsor)

Department of Psychology, Framingham State College, Framingham, MA,
01702

Humor and Conflict: A Look at Humor Appreciation, Perceptions of Partners' Humor, and its Link to Relationship Satisfaction

The goal of this study was to expand on scenario-based reports of types of humor and how relationship satisfaction is affected by the perception and appreciation of these humor types using self-report relationship history and hypothetical situations. A sample of 115 college students, mostly Caucasian women, read a conflicted or pleasant scenario and imagined themselves as satisfied or dissatisfied with their current partners. They then evaluated their perceptions and appreciation of their partners' humor within the scenario contexts. Self-report questionnaires on relationship satisfaction and humor types were also completed. Results showed that participants who imagined being dissatisfied and in conflict with their partners, appreciated their partners' humor the least. Participants also used positive humor types when they felt positively about their partners and negative humor types when they felt negative. Participants showed mixed results when rating instrumental humor as being negative and positive communications. These results show how inaccurate interpretation of partners' humor can lead to conflict. Results emphasize importance of humor interpretation as a reflection of relationship satisfaction, which may be used in marital counseling and in generalized therapy sessions.



512 Room 101 3:50-4:50 Board 52

Katie Jeffery, Lauren Moran , Pamela Ludemann (Faculty Sponsor)
Department of Psychology, Framingham State College, Framingham, MA,
01702

Social and Family Influences on Smoking

This study was conducted to investigate the impact of social and family influences on the initiation of smoking, as well as attitudes towards smoking restrictions. A sample of 120 primarily Caucasian students, 60 being non-smokers, was presented with a scenario either depicting an administrative imposed or student group imposed policy on student smoking restrictions. Questionnaires assessed attitudes towards the scenario policies, personal and perceived reasons for smoking, and need for social approval. Preliminary results suggest that smokers have more negative reaction towards smoking restrictions than non-smokers. However, both non-smokers and smokers are more opposed to student groups restrictions than administrative imposed restrictions. Results also show that smokers indicate a higher number of social and family influences towards smoking behaviors than non-smokers. This study provides additional evidence that social and family influences do impact and promote the smoking behaviors of young adults.



513 Room 101 2:35-3:35 Board 47

Courtney Wall, Kayla Henry, Paige B Raymond, Emma Morelli , Bridgett Perry-Galvin (Faculty Sponsor)

Department of Psychology, Framingham State College, Framingham, MA, 01702

Self Esteem and the Effects of Jealousy in Committed Relationships

Abstract Romantic relationships in college years can contribute to both high and low satisfaction with the college experience. Interpersonal factors such as self-esteem and jealousy may impact these relationships greatly. This survey examined the relationship between one's self esteem level and the amount of jealousy reported in romantic relationships as well as gender differences in jealousy within relationships. Participants included 48 (24 females) undergraduates from a small liberal arts college in the northeast. Students answered questions about their personal experience with romantic relationships including the areas of personal behaviors and attitudes as well as partner feelings of anger and self worth. A series of t-tests revealed significant gender differences in the areas of partner provoked jealousy, relationship jealousy, and self esteem. Implications of the differences between males and females in their perceptions of jealousy in the romantic relationships are discussed with respect to maintaining healthy relationships..



514 Room 101 3:50-4:50 Board 38

Allison K Lavine, Stephanie N Hall, Salua Oliveira, Justin Bailey (Faculty Sponsor)

Department of Psychology, Framingham State College, Framingham, MA, 01702

How Emotional Pictures, Stress, and Sleep Relate to False Memories:

False memory has been defined as recalling events that never happened or recalling them differently from the way they occurred (Roediger & McDermott, 1995). This study examined the effect emotional pictures, stress and sleep had on the recognition accuracy. A total of 209 students were randomly assigned to view one of three emotional picture conditions (positive, neutral, negative). Students completed questions about stress, cognitive failures (cognitive based mistakes), sleep habits and self esteem. Findings indicated that participants who were exposed to negative emotional pictures had less recognition than participants who were exposed to positive pictures, but there was no effect for the amount of sleep in the previous night. Findings also indicated that participants with higher levels of self-reported stress had significantly more false memories than participants with lower levels of self-reported stress. This study demonstrates that memory for negative events, such as witnessing a crime, may be less accurate than for positive events.



515 Room 101 3:50-4:50 Board 47

Amanda Persaud

Paula Pietromonaco (Faculty Sponsor)

Department of Psychology, UMass Amherst, Amherst, MA, 01003

Cortisol Reactivity During a Conflict Discussion: Effects of Prior Sexual and Physical Trauma

Previous research has concluded that a history of trauma can affect physiological reactivity to stressors (e.g., Powers et al., 2006). Cortisol is an end product of the hypothalamic-pituitary-adrenal (HPA) axis, and it is involved in the body's stress and anxiety responses. This study aimed to explore a link between histories of sexual and physical abuse in husbands and wives and their physiological stress response (indexed by cortisol) during interpersonal conflict. Sixty-six heterosexual newly married couples completed a stress-inducing interpersonal task in which they discussed a source of contention in their relationship for 15 minutes. We then examined levels of salivary cortisol reflecting their physiological stress response to the task. In accordance with prior research on HPA dysregulation in PTSD sufferers, we expected that: a) cortisol levels would be the lowest for sexual abuse, especially for women; and b) participants who experienced no prior physical or sexual abuse would show normal cortisol reactivity. Results of a one-way ANOVA indicated significant differences between the types of abuse experienced in predicting cortisol levels during conflict for men $F(2,63) = 4.67, p = .01$, and another ANOVA revealed marginally significant differences between abuse types in predicting cortisol for women $F(2, 59) = 2.45, p = .10$. These findings suggest that men's physiological response to interpersonal stress may depend on the type of trauma they have experienced. Further research will be needed to confirm this pattern and to more fully explore whether traumatic physical and sexual experiences have different impacts on women's physiological responses.



516 Room 101 2:35-3:35 Board 41

Alyssa J McElwee

Erica Abro

Kira Terrill

Colleen Poulin

Bridgett Perry-Galvin (Faculty Sponsor)

Department of Psychology, Framingham State College, Framingham, MA,
01702

Perceptions of Safe Sex, Sexual Beliefs, and Sexual Risk-Taking

Prevention of STD's and pregnancy are both reasons that college students should be aware of and utilize safe sex practices. The purpose of this study was designed to clarify college students' perceptions of sexual beliefs, specifically attitudes toward safe sex practices, as they relate to self-esteem. A sample of 82 undergraduates (41 males) at a small liberal arts college completed a questionnaire survey that included items on demographics, sexual beliefs and practices, and self-esteem. A series of t-tests and correlations yielded significant gender differences on several measures. Our findings suggest that men and women with more sexual experience have a more negative view towards beliefs and barrier method usage. Unexpectedly, these findings also suggest that self-esteem is unrelated to sexual beliefs in men and women. Findings supported the hypothesis that students reporting more sexual partners also reported more negative views towards beliefs and barrier method usage. Findings suggest that people who report greater numbers of sexual partners report lower usage of safe sex practices. Keywords: sexual beliefs, self-esteem, Sexually Transmitted Diseases, safe sex, condom use



517 Room 101 3:50-4:50 Board 46

Emily Richter

Lynn Shelley (Faculty Sponsor)

Department of Psychology, Westfield State College, Westfield, MA, 01086

Short Term Study in Spain

Westfield Sate College began a short study abroad program in January of 2009, called a J-term. Students are encouraged to see another part of the world and learn about a different culture, all while taking a class and earning college credits. This past January, I traveled to Spain, visiting three cities, Madrid, Segovia, and Granada, while being enrolled in a class called "Adolescent Development: A Cross Cultural Perspective." In addition to enjoying many tourist attractions, we gained in-depth insight into Spanish culture by living in family housing. We were exposed to the cultural similarities and differences between American and Spanish adolescents. I learned about myself as an individual and the privileges I am afforded, and I came to realize the responsibility I have taken on by committing myself to earning money to travel. Because I was the youngest member of the group, I also learned to communicate with older students, and I gained the ability to take care of myself in new situations. Finally, and most importantly, I began to expand my global development. I learned how to get around in a foreign country, knowing minimal Spanish. Spain was the first time I traveled abroad and it opened my eyes to the diversity of other cultures and how important it is to become a global citizen.



518 Room 101 3:50-4:50 Board 51

Tatiana Rugel

Maureen Perry-Jenkins (Faculty Sponsor)

Department of Psychology, UMass Amherst, Amherst, MA, 01003

The Relationship Between Parent Involvement and Child Academic Achievement

In today's society it is not uncommon for both parents in the home to be working. As dual-earner homes become the norm, many parents are more stressed and face challenges being involved in their children's lives. The current study focuses on parental involvement in children's education, which takes place both at home and in school, and its relationship to children's academic achievement. Using data from the Work and Family Transitions Project, a sample of 153 dual-earner families were interviewed in their homes and completed a number of questionnaires related to parent involvement. All families had a six-year old child, who was the oldest child in the family and target child of the study. Parents answered standardized questionnaires that assessed both their involvement at the child's school, interactions with the child's teacher, and level of involvement at home with homework and school projects. Child academic achievement was measured directly with the children using the Wechsler Individual Achievement Test (WIAT); for the purpose of this study, the reading and numerical composite scores were used. Using bivariate correlations, results showed no relationship between mothers' or fathers' overall involvement at home and child academic achievement. In addition, no relationships emerged between parents' involvement with the school and child achievement. Analyses did reveal, however, a positive correlation between the parental endorsement of the school subscale (i.e. parent likes the school, parent trusts the teacher) and higher child scores on the WIAT. Further analyses will be conducted to examine the combined effects of both mother and father involvement for children's achievement.



519 Room 101 2:35-3:35 Board 46

Amar Shere

Matthew Davidson (Faculty Sponsor)

Department of Psychology, UMass Amherst, Amherst, MA, 01003

The Effects of Maternal Exercise on the Neuroendocrine and Behavioral Responses to Stress in Rat Offspring

Exercise has been shown to enhance brain health and plasticity and to reduce the adverse effects of high corticosterone levels due to chronic stress in animals. Additionally, maternal exercise during pregnancy has been shown to produce both physiological and cognitive benefits in rat offspring. What remains unknown is whether maternal exercise can influence the response to chronic stress, as induced by maternal separation, in rat offspring. Maternal separation has been used to induce early life stress and as a model of how parent-child experiences influence offspring responses to challenges later in life. Accordingly, the objectives of the current study were to investigate maternal effects of exercise and the effects of early maternal separation on the neuroendocrine and behavioral responses to stress in rat offspring. Two groups of pregnant Sprague-Dawley rats were established (6 dams per group) with one group able to exercise voluntarily on a running wheel for 10 days prior to giving birth. After birth these groups were subdivided to form 4 groups, with half of the exercise and control litters (approximately 8 pups per litter, split evenly between males and females) undergoing maternal separation for 3h/day on postnatal days 2-14. On postnatal day 21 all pups were weaned and experienced 60 minutes of social isolation stress in which they were separated from both dams and littermates. Plasma corticosterone levels were assessed 0, 60, and 120 minutes from the onset of this isolation. After this isolation, pups were housed with same sex littermates as juvenile groups. Individual pups were then tested on an elevated plus maze to assess anxiety-like behaviors during adolescence. Taken together, these measures allow investigation of the interactions of neurobiological mechanisms of maternal exercise and early life stress to better understand how both positive and negative events early in life can influence later development.



520 Room 101 3:50-4:50 Board 56

Caitlin Sherman

Paula Pietromonaco (Faculty Sponsor)

Department of Psychology, UMass Amherst, Amherst, MA, 01003

The Relationship between Attachment Style and Empathic Accuracy among Newlywed Couples

Prior work suggests that people's expectations and beliefs about romantic relationships, or their attachment styles, predict how they perceive and respond to their partners. The current study examined the extent to which attachment style predicts empathic accuracy for both global information about the partner (i.e., partner's attachment style) and interaction-specific information (i.e., partner's level of support during a conflict interaction). To examine this question, newlywed spouses ($n=81$) completed questionnaires to assess their own attachment style and their perceptions of their partner's attachment style. After a conflict discussion, couple members provided ratings of their own and their partner's level support and responsiveness during the discussion. Overall, global accuracy varied by the match between the perceiver's attachment style and the partner's actual attachment style. Specifically, wives who were more anxiously attached were less accurate in perceiving their husband's level of avoidance, whereas those who were more avoidantly attached were less accurate in perceiving their husband's level of anxiety. A parallel pattern was found for husbands: More anxiously attached husbands less accurately perceived their wife's avoidance, whereas more avoidant husbands less accurately perceive their wife's anxiety. Accuracy in perceiving the partner's support during the conflict interaction generally did not vary by the attachment style of either the target or perceiver. These findings suggest that husbands and wives with contrasting forms of attachment insecurity (one is more anxious and the other more avoidant) are less likely to accurately perceive their spouse's attachment orientation; however, when perceptions focus on a specific interaction, attachment style may not contribute to accuracy.



521 Room 101 3:50-4:50 Board 42

Christina Shimek

Hildy Schilling (Faculty Sponsor)

Department of Psychology, Fitchburg State College, Fitchburg, MA, 01420

Recall of Words Studied While Listening to Music

Participants listened to either Sweet Caroline by Neil Diamond or Canon in D by Pachelbel while they studied a list of either simple words that may be encountered daily or difficult words that might appear on a SAT test. Participants who listened to Pachelbel Canon recalled significantly more words than those who listened to Sweet Caroline. Recall was greater for simple words than for difficult words. There was no interaction between music type and difficulty level of words.



522 Room 101 2:35-3:35 Board 39

Adnolan A Rosario

Maksim Sigal

Unja Hayes (Faculty Sponsor)

Department of Psychology, UMass Amherst, Amherst, MA, 01003

Kids on the Brain: The Effects of Pups on Neural Activation

Kids on the Brain: The Effects of Pups on Neural Activation Maksim Sigal, Nicole Arsenault, Adnolan Rosario & UnJa L. Hayes This study examined the areas activated in the brains of maternal and infanticidal female prairie voles (*Microtus ochrogaster*) in response to pup stimulation. Neural activation was determined using immunocytochemistry to stain for the protein product of the immediate early gene c-fos. In Experiment 1, Fos expression was quantified in spontaneously maternal and infanticidal subjects exposed to a pup in spring or a spring only. In Experiment 2, infanticidal animals were subjected to sensitization, meaning continuous exposure to pups to experimentally promote maternal responsiveness. Fos expression was compared in the brains of those animals that did and did not become maternal. We expect to replicate previous findings of neural areas associated with facilitation and inhibition of maternal behavior, irrespective of how the subject becomes maternal or infanticidal.



523 Room 101 2:35-3:35 Board 52

Andrea Simoni

Agnes Lacreuse (Faculty Sponsor)

Department of Psychology, UMass Amherst, Amherst, MA, 01003

The Influence of Testosterone and Genetic Profiles on Risk Sensitivity in Male Rhesus Macaques

Testosterone has been implicated in increased risk-sensitivity in a variety of species ranging from rodents to humans. However, because of the health risks posed by testosterone treatment in men, human studies have either focused on circulating testosterone or have administered testosterone only in women. Thus, it remains unclear whether testosterone treatment causes an increase in risky behavior in males. Rhesus monkeys are excellent models to investigate this issue, due to their physiological and behavioral similarities to humans. In the present experiment, we examined whether testosterone manipulations influence risk sensitivity in adult male rhesus monkeys. In addition, we investigated genetic influences on this behavior. Six monkeys were treated with a drug that suppresses testosterone and replaced with testosterone or placebo in a cross-over design. They were presented with a preference task between two identical objects differing only in color. The blue object was associated with a safe, consistent reward of 2 raisins (safe option), while the red object (risky option) was associated with a variable reward of either half a raisin (75% of the time) or 6 raisins (25% of the time). Preference for the risky object was examined for each of four experimental phases: baseline, testosterone suppression alone, testosterone treatment and placebo treatment. We failed to find an effect of testosterone treatment on risk sensitivity. Furthermore no association was found between risk sensitivity and polymorphisms in two genes implicated in serotonergic function and risk sensitivity. These preliminary results in monkeys call for additional experiments with larger sample sizes to help understand the relationships between testosterone and risk preferences in males.



524 Auditorium 3:50-4:50 Board 35

Dawn A Rigby

Agnes Stasiewicz

Justin Bailey (Faculty Sponsor)

Department of Psychology, Framingham State College, Framingham, MA,
01702

Perceptions of Romantic Couples based on Physical Attractiveness and Sexual Orientation

The way in which individuals are perceived by others is affected by many factors. Research has shown that two of these factors that have a major impact on perceptions include physical attractiveness and sexual orientation, but the research lacks in perceptions of romantic couples based on these two factors together. This study aimed to examine the perceptions of romantic couples' life and relationship satisfaction based on physical attractiveness and sexual orientation. Participants consisted of 180 undergraduate college students, ages 18-31, who were randomly assigned to read a scenario along with pictures of one of six scenario couple conditions, which varied on physical attractiveness and sexual orientation of a scenario couple. The participants then evaluated the depicted scenario couples on life satisfaction and relationship satisfaction. Participants also rated their own life satisfaction, relationship satisfaction, importance of relationship qualities, homophobia, and answered questions about their own relationship experience. Analyses showed that physical attractiveness and sexual orientation had partial results on several measures that the study examined. One of which was a difference in perceived relationship satisfaction of the scenario couple based on sexual orientation.



525 Auditorium 1:20-2:20 Board 3

Jessica Tavernini

Ronnie Janoff-Bulman (Faculty Sponsor)

Department of Psychology, UMass Amherst, Amherst, MA, 01003

Moral Judgments and the Role of Harm: Differences in Automatic vs. Controlled Processing

The social intuitionist model has recently drawn attention away from the earlier dominance of rational deliberation and towards the importance of feelings and intuition in moral judgments. The relationship between intuition and deliberation has only recently begun to be explored in moral psychology. This study was conducted as a follow-up and extension of two previous experiments to further investigate automatic and controlled processes in moral judgments. The goal was to test for a relationship between the severity of moral judgments and the presence of harm to others and, in the process, to determine whether there is a distinct difference between automatic and reasoned judgments. The study consisted of four conditions (2 x 2 factorial design) in which the presence and absence of social harm were crossed with automatic versus controlled processing. Participants made judgments of a moral violation that consisted of a serious case of plagiarism in which the perpetrator clearly over-benefitted the self and, in two of the four conditions, harmed others in the process. Findings indicated that the presence of harm causes a significant increase in the severity of punishment, but only under controlled processing (i.e., deliberation). The results suggest that the controlled processing system is especially sensitive to non-physical social harm, in which over-benefiting the self clearly comes at the expense of others.



526 Auditorium 10:45-11:45 Board 40

Deanna Toner

Laurel Wainwright (Faculty Sponsor)

Department of Psychology, UMass Boston, Boston, MA, 02125

Naturalistic Visual Search in Autism Spectrum Disorders

Individuals with Autism Spectrum Disorders (ASDs) have been shown to have a superior performance on visual search tasks in laboratory settings, as measured by accuracy and reaction times, when compared to typically developing peers. The aim of this study is to examine whether or not these scanning strengths in children with ASDs can be seen in real life, naturalistic settings. Participants will be school age children and adolescents with ASDs, as well as age matched, typically developing peers. The participants will be shown a series of naturalistic photographs, and asked to find a real life target. Some of the photographs will have social content, where they will be asked to find a human or animal target in a naturalistic setting. For instance, they will be asked to locate a person in a crowd. Some of the photographs will have no social content, where the participants will need to locate an inanimate object in the naturalistic setting. For instance, they will be asked to locate a car in a parking lot. Because a crucial component of Autism Spectrum Disorders is a marked impairment in social interaction, we feel it is necessary to test both social and nonsocial stimuli. The reaction times and accuracy of the participants will be measured and compared. We anticipate that the children with ASDs will be faster and more accurate at identifying the targets with no social content, when compared to typically developing peers, and will be slower and less accurate at identifying the targets with social content. The results will help to explain the autistic cognitive profile, which may lead to more of an understanding of the strengths we see in ASDs and lead to better services in the future.



527 Auditorium 3:50-4:50 Board 36

Morgan Wedge

Mary Kay Cordill (Faculty Sponsor)

Department of Sociology, Cape Cod Community College, West Barnstable, MA, 02668

Music Moving People

Music portrays powerful messages and plays a major role in most social movements. Chad Strokes, of bands State Radio and Dispatch, and activist partner, Sybil Gallagher co-founded a service organization called, Calling All Crows. Through concerts, assemblies, special announcements, and community service, Calling All Crows is dedicated to mobilizing their fans to promote human rights. This organization is specifically focusing on eliminating violent acts against the Sudanese women that have escalated since the start of the genocide of Sudan. By bombing and burning villages, Sudan's troops are destroy the lives of innocent civilians. Economic resources are continually looted and the rape and murder of women have dramatically increased. In 2009, Calling All Crows recruited more than 600 fans who volunteered over 3,000 hours at local service projects across the country and raised \$100,000 for Oxfam America's Darfur Stoves project. These donations will provide at least 5,000 fuel-efficient stoves that will decrease the number of trips Sudanese women will make away from their refugee camps lessening the risk of becoming victims of rape, assault, and murder. This project is designed to inform people about the tragic events happening in Sudan and how the power of music can bring fans and activists together to raise money and advocate human rights. It highlights how Chad Strokes is making his voice known to bring a stop to the genocide in Sudan and encourage people to get involved in the adversity of human injustice in the world that we all share.



528 Room 101 3:50-4:50 Board 40

Alex Weiner

Jerrold Meyer (Faculty Sponsor)

Department of Psychology, UMass Amherst, Amherst, MA, 01003

An Investigation into the Effects of MDMA Exposure on Mitochondrial Respiration in Rat Brain Synaptosomes

3,4-Methylenedioxymethamphetamine (MDMA, “Ecstasy” or “E”) is a very popular recreational drug commonly abused by adolescents. In the last few decades, it has garnered significant attention in the media for its purported neurotoxicity. Specifically, MDMA has been shown to have a neurotoxic effect in animal models on both the functionality and structure of the serotonergic system. One area that has been proposed to be significantly affected by MDMA-induced neurotoxicity in rats is brain mitochondria. More specifically, we hypothesize that high doses of MDMA adversely affect respiration (oxygen consumption) rates in rat brain mitochondria. The first part of the current study is examining the effects of MDMA on respiration rate by isolating rat brain synaptosomes (pinched off nerve terminals containing functional mitochondria) and then exposing them to MDMA in vitro. The second part of the study will measure synaptosomal mitochondrial respiration in animals that have been treated with MDMA in vivo. Preliminary data have revealed that MDMA in vitro mildly decreases oxygen consumption rates in synaptosomes as predicted. Further experiments are aimed at confirming this result as well as conducting the in vivo part of the study.



529 Room 101 3:50-4:50 Board 48

Kathleen Werner

Maureen Perry-Jenkins (Faculty Sponsor)

Department of Psychology, UMass Amherst, Amherst, MA, 01003

Division of Labor and Relationship Conflict Across the Transition to
Parenthood

The division of labor is topic of frequent disagreement and conflict among dual earner couples. For my honors thesis, I am examining the relationship between the division of household and childcare tasks and relationship conflict for a sample of dual-earner, working class couples having their first child. In addition, I am examining the role of gender ideology as a moderator of this relationship. Mothers and fathers were interviewed at five different time points across the transition to parenthood, once during the third trimester and four times post-partum. For the purpose of this study, data from the first time point (third trimester) and last time point (one year post-partum) will be utilized. Mothers' and fathers' reports of the division of household and childcare tasks, conflict in the marriage, and gender ideology were assessed with standardized questionnaires during face-to-face interviews in parents' homes. Initial analyzes revealed a significant, positive correlation between mother's report of division of childcare tasks and mother's reports of conflict, indicating that the more child care tasks mothers completed, relative to fathers, the more conflict they reported. In contrast fathers' reports of the division of child care tasks were unrelated to relationship conflict. In addition, mothers' reports of household tasks were also positively correlated with conflict, indicating that the more household chores mothers performed the more conflict in the relationship. Further analyzes will examine the role of gender ideology as a moderator of the relationship between the division of labor and marital quality.



530 Room 101 2:35-3:35 Board 44

Heather B Flynn, Emily Wharton , Deborah McMakin (Faculty Sponsor)
Department of Psychology, Framingham State College, Framingham, MA,
01702

Perceptions of Personality Traits and Gender Differences among Ideal Mate Preferences

Personality characteristics are often cited as key ingredients to the success or demise of romantic relationships. Scientific literature points to five personality traits, known as the Big Five, to examine the role of personality traits on partner compatibility. The Evolutionary Model of Parental Investment has been the most prominent theoretical framework for explaining how personality and gender differences contribute to mate preferences. However, little research has focused on perceived compatibility, gender and specific personality traits, namely, neuroticism and agreeableness. This study examined 120 college students' perceptions of partner agreeableness and neuroticism on romantic compatibility. Participants completed a scale measuring their own levels of neuroticism and then read one of four randomly assigned scenarios depicting a male or female scenario character with high or low levels of neuroticism. Participants were then asked to rate levels of partner agreeableness necessary for a romantic match with the scenario character. A series of correlations and two factor ANOVA's will be computed to examine differences in male and female participants' perceptions of levels of neuroticism and agreeableness necessary for compatibility. It is predicted that college students will perceive the female character, regardless of her level of neuroticism, as most compatible with a male partner who is low in agreeableness. Additionally, levels of neuroticism among male participants will be positively associated with levels of agreeableness in ideal prospective romantic partners. Findings will be discussed relative to perceived salient factors in matchmaking and long term relationship compatibility among young adults.



531 Room 101 3:50-4:50 Board 37

Rebecca A DeSimone, Hannah Zwetchkenbaum , Justin Bailey (Faculty Sponsor)

Department of Psychology, Framingham State College, Framingham, MA, 01702

Biphobia and Attitudes Towards Bisexuality

Many factors influence individual's attitudes towards different types of sexual orientation. Past research has shown factors that influence people's attitudes towards homosexuality resulting in homophobia. This study was designed to investigate an under-examined facet of sexuality, bisexuality and the negative attitudes expressed through biphobia. Participants consisted of 180 undergraduate college students with an equal number of women and men in the study. Participants were asked to read a scenario regarding a college student that was heterosexual, homosexual, or bisexual and either male or female and then were asked to answer questions regarding the scenario character as well as their own personal beliefs followed by demographic questions. Results indicated that those with higher religiosity scored higher in homophobia, biphobia, and in viewing bisexuality as an unstable sexual orientation; specifically, men were more likely to view bisexuals as having a less stable sexual orientation than women.



Public Health

532 Auditorium 1:20-2:20 Board 22

Lisa Casey

Teresa Fitts (Faculty Sponsor)

Department of Kinesiology, Westfield State College, Westfield, MA, 01086

Advocating for Physical Activity through a Physical Activity Agility Challenge

This project was developed to advocate for increased physical activity from a multi-disciplinary perspective. The purpose of the Physical Activity Agility Challenge was twofold: to increase the physical ability of youth ages 4-6 through a Physical Activity Agility Challenge event; and to introduce young persons to law enforcement personnel working in the D.A.R.E. unit. According to the Center for Disease Control and Prevention (CDC), 24% of children ages 2-5 are overweight or obese. CDC surveys also indicate that 48 % of girls and 26 % of boys do not get vigorous activity on a regular basis. Law enforcement personnel have been found to be effective partners in school and community settings in establishing and maintaining safe environments. Fostering good relationships with local D.A.R.E. officers at an early age enables young students to engage in early positive interactions. The Physical Activity Agility Challenge included 10 stations focusing on balance, agility and fitness. D.A.R.E. officers and other volunteers assisted by teaching participants about the activities of everyday policing. Observational data relating to the engagement of the participants was collected and will be presented. Reflections on developing a multi-disciplinary advocacy project will also be presented. The Physical Activity Agility Challenge Advocacy Project provides an example of a structured program that introduces youth to physical activity and community policing in a fun, safe, environment. Service-learning opportunities such as this provide students with a chance to apply classroom information to a hands-on project.



533 Auditorium 1:20-2:20 Board 21

Christina Tomasetti

Abby Genovese

Teresa Fitts (Faculty Sponsor)

Department of Kinesiology, Westfield State College, Westfield, MA, 01086

Celebrating Stanley Park Through Yoga

The purpose of this service-learning project was to examine the development, opportunities and challenges inherent in the implementation of a physical activity advocacy project. According to a 2008 study by the Center for Disease Control (CDC), only 27% of people over the age of 18 participated in physical activity during their leisure time. A project was developed as an assignment in an honors class focusing on multi-disciplinary approaches to the physical inactivity crisis. Yoga has been found to decrease blood pressure, improve stress levels, enhance sleep and improve the immune response (Atkinson & Permuth-Levine, 2009). The project was intended to promote the idea of healthy, stress-relieving, leisure activities. In addition, the goal was to provide a space for students, faculty, staff and individuals from the larger community to join together to do yoga and stretching in the natural and beautiful setting of Stanley Park. Attendance records and qualitative data focusing on feedback relating to stress levels and enjoyment were recorded. Reflections on conducting a community-based service-learning project aimed at increasing physical activity were also provided. Celebrating Stanley Park Through Yoga provides an example of a multi-disciplinary approach to the improving physical activity opportunities in a small community.



534 Auditorium 1:20-2:20 Board 20

Magdalene Horton

Laura Hayman (Faculty Sponsor)

Department of Nursing, UMass Boston, Boston, MA, 02125

Sociodemographic Characteristics Associated with Fruit and Vegetable Intake

Numerous studies examined individual and contextual factors that influence dietary behaviors. Minimal population-based data are available, however, regarding the relationship between sociodemographic characteristics and fruit and vegetable intake. This study included 1454 participants (26% black; 57% female) from the population-based Lipid Research Clinics Princeton Follow-Up Study including 432 parents (age 66.5+/-6.6 years) and 1022 adult children (age 39.9+/-4.9 years). Dietary intake was measured with the Block Quantified Food Frequency Questionnaire. Fruit and vegetable intake was defined as the number of servings per day. A mixed-effect multivariate analysis examined associations between fruit and vegetable intake and all covariates (age, sex, education, marital status, race and generation), adjusted for within-family correlation. In fully-adjusted model, sex, age, and education were independently associated with fruit and vegetable consumption. Females consumed 0.38 more fruit and vegetable servings per day than males ($p=0.01$). Compared to participants with some high school education, participants with some college education consumed 0.70 more servings of fruit and vegetables per day ($p=0.01$); participants with a bachelor's degree consumed 0.78 more servings per day ($p < 0.01$) and participants with a graduate degree consumed 1.67 more servings per day ($p < 0.01$). Fruit and vegetable intake increased with increasing educational level (p for trend < 0.001). With every year increase in age, participants consumed 0.04 more servings of fruit and vegetables per day ($p=0.01$). Results of this population-based study indicate females consume more fruits and vegetables than males; educational level and age positively and significantly influence daily consumption of fruit and vegetables. No multigenerational clustering of dietary behaviors was observed. The mechanisms through which sociodemographic characteristics influence dietary behaviors remain to be fully explicated.



535 Auditorium 1:20-2:20 Board 29

Vanessa Laine

Daniel Gerber (Faculty Sponsor)

Department of Public Health, UMass Amherst, Amherst, MA, 01003

Health Program for the Inhabitants of Cite Soleil, a slum in Haiti

Haiti has once flourished as the first black republic country and has recently celebrated its 206th independence anniversary. However, Haiti has been known as a country of many conflicts, mainly political ones that has driven its population further into poverty leaving no choice but resettlement for the privileged ones. Haiti is now labeled as the “poorest country in the western hemisphere”. With its political turmoil, Haiti’s poorest of the poor living in slums like Cite Soleil, meaning Sun City, have had the greatest exposure to gang violence that further deteriorates their health conditions apart from their dreadful living conditions. This paper/project is about creating a health program that targets the population of Cite Soleil. Based on the amount of exposure the residents of Cite Soleil have experienced from the many political instabilities and sometimes just basic gang violence, they are in need of tremendous support to provide basic necessities. This health program will educate this population about the basic first aid care and preventive methods against infectious diseases that are common within that population, while acknowledging their socioeconomic status.



536 Auditorium 1:20-2:20 Board 25

Dawn Rigby

Antone Dias (Faculty Sponsor)

Department of Psychology, Framingham State College, Framingham, MA,
01702

Paradigm Shift in American Medical Practices: Adopting a Holistic Approach

This thesis examines the differences in current health care practices across individualistic and collectivist culture, specifically looking at the United States in comparison to China. A brief history of medical and healing practices across these cultures is discussed. Two current biological perspectives are explored through viewing and researching data collected from articles in scholarly journals, as well as in archives and radio interviews. American medical treatment programs emphasize focus in the technology of drug-therapy and surgical procedures, through the utilization of a complex network of practitioners. In contrast, Eastern Asian medicine emphasizes the prevention and treatment of disease through methods that include acupuncture and herbal medicine. This thesis proposes that the current biological perspectives on health care practices in the individualist culture would have more benefits in enhancing the quality of life of the patient if there was a merging of both biological perspectives. After extensive comparison of Western and Eastern perspectives on wellness and health, this thesis will discuss suggestions for an incorporation of the above into a holistic approach for a new paradigm, a discussion of great importance in the Western world of today.



537 Auditorium 1:20-2:20 Board 17

Kaitlyn Teser

Teresa Fitts (Faculty Sponsor)

Department of Kinesiology, Westfield State College, Westfield, MA, 01086

Improving the Health of Individuals with Intellectual Disabilities through Healthy Athlete Screenings at Special Olympic Events

Individuals with intellectual disabilities (ID) are among society's most neglected populations (Special Olympics Inc., 2005). ID affects approximately 2.5 million people. Persons with ID are more likely to have physical disabilities, mental health problems, hearing impairments, vision impairments and communication disorders (Ouellette-Kuntz, Garcin, Lewis, et al., 2005). Medical professionals are not adequately trained or experienced to care for persons with ID, yet individuals with ID have a 40% greater risk for health issues. (Special Olympics Inc, 2005). Since 1997, Healthy Athlete Screenings have been held at Special Olympic events. Athletes are provided health screenings in seven medical disciplines at local, regional and world Special Olympic competitions. Healthcare professionals volunteer for Healthy Athlete Screenings and make referrals to local healthcare practitioners when appropriate. In addition, knowledgeable medical personnel train health care professionals and students to work with the ID population. Data are collected and analyzed to increase an understanding of the needs of persons with ID. Data from a Healthy Athletes Screening will be presented, as will reflections from a student who worked as an intern for Special Olympics. The Healthy Athletes Screening Program is one of several ways to assist ID populations through exchange, education, and empowerment.



538 Auditorium 1:20-2:20 Board 18

Stephanie Travers

Justin Bailey (Faculty Sponsor)

Department of Psychology, Framingham State College, Framingham, MA,
01702

Correlation Between Spirituality and Physical & Psychological Health of Young Adults

This study was conducted to determine if there is any correlation between spirituality and physical and/or psychological health by measuring undergraduate college students' level of spirituality as well as levels of physical health and psychological health. Framingham State College undergraduate students were invited to participate in the study by completing an online survey developed to measure levels of each variable. The survey consisted of open-ended and multiple choice questions related to their demographic information, values, beliefs, and behaviors. Results revealed a slight, positive correlation between students' spirituality and psychological health and a statistically significant positive correlation between spirituality and physical health. The spiritual and physical dimensions of life are connected; however, additional research is necessary to determine if one impacts another.



539 Auditorium 1:20-2:20 Board 16

Anthony Wilson

Erin Walsh

Teresa Fitts (Faculty Sponsor)

Department of Kinesiology, Westfield State College, Westfield, MA, 01086

Wii Fit Festival: A Service Learning Project

The purpose of the Wii Fit Fest was to provide participants with an opportunity to experience and more fully understand the benefits and challenges in using fitness technology products. In the U.S., 65% of American households play computer or video games. Only 34% of today's youth perform sufficient amounts of physical activity to meet recommended guidelines (Centers for Disease Control and Prevention, 2008). Active gaming may help youth stay active and reduce sedentary time. However, interactive exercise gaming systems (exergaming) are not just for youth, but for individuals and groups across the lifespan. The Wii Fit Festival was a service learning project conducted as an assignment in a Supervising Sport and Fitness Programs class to promote knowledge about fitness technology products. The project was designed to incorporate event management principles into the application of a fitness technology based event. Organizing and implementing the Wii Fit Fest was a way to learn about promoting physical activity through fitness technology while providing a service to the community. Community participation, attendance and overall enthusiasm were assessed using both qualitative and quantitative methods. Student learning relating to event planning was evaluated by personal reflections, activity logs and class debriefing. Fitness technology events provide students with an opportunity to demonstrate promotional skills in a structured learning environment that serves and benefits the larger community.



Social Thought and Political Economy

540 Auditorium 3:50-4:50 Board 29

Kit Chang

Luke Salisbury (Faculty Sponsor)

Department of Literature, Bunker Hill Community College, Boston, MA,
02129

Race & Propaganda During the Pacific War

When one begins to look at the circumstantial roles of each player in the Pacific War of World War II, perhaps a most conveniently overlooked detail is the fact that the conflict was mostly between Great Britain/the United States (the West) and Japan (the East), thereby lending the conflict a racial tone. This study will attempt to detail the most common racial perceptions within war propaganda during this period, including sources such as publications and slogans during the period, as well as other popular writings on the subject. Using these perceptions, the patterns of racial hatred will also attempt to be identified, despite the differing cultural perspectives between war fronts. Ultimately, the prejudice that wartime propaganda repeatedly drew upon existed even before the onset of hostilities. Both factions, therefore, should appear quite similar beyond the most superficial analyses, and it is on this similarity that the war and the atomic bomb will be reexamined.



541 Auditorium 3:50-4:50 Board 22

Sarah Finlayson

Mary Kay Cordill (Faculty Sponsor)

Department of Sociology, Cape Cod Community College, West Barnstable, MA, 02668

Japanese Internment: An American Tragedy

The bombing of Pearl Harbor was a day of unbearable loss for many soldiers and their families. The unrelenting attack on the American Naval base was an event with deep rippling effects that to this day, almost seventy years later can still be felt. The loss of American lives was tragic enough on its own, but the unforeseen backlash that unjustly persecuted the Japanese American communities across the United States was an unnecessary travesty. This backlash spurred the internment of almost 120,000 people of Japanese descent which included over half that were American citizens who had their civil liberties violated. The purpose behind this research paper is to piece together the events that fueled this injustice, the role of government in the incarceration of innocent American citizens, life in the concentration camps, and what steps were finally taken to secure the release of the detainees. This paper will also discuss an individual that was directly affected by being interned and how that altered the course of her life, coupled with the minority of other Americans who actually spoke out and fought for the closure of the internment camps. This person is Yuri Kochiyama who was not only a detainee but also fought for redress in the 1980's. Ultimately, her experience in the internment camp, alongside the rampant racism she was subjected to, fueled Yuri's passion for equality among all races. This would lead her to the Civil Rights movement, through which she found a friendship/mentor in Malcolm X. Although the friendship between Malcolm X and Yuri Kochiyama was short lived, after less than 2 years, Malcolm X was shot while they were sitting together on stage at a civil rights gathering.



Social Work

542 Auditorium 1:20-2:20 Board 10

Noah Luszczyk

Mary Kay Cordill (Faculty Sponsor)

Department of Sociology, Cape Cod Community College, West Barnstable, MA, 02668

Food for Thought: Examining the World Hunger Movement

Today, world hunger is an extensive issue that affects countless people across the globe in spite of sufficient global food resources. It is estimated that over 1.02 billion people around the world are hungry, including roughly 35 million in the United States. Hunger and malnutrition are most commonly found in those living below the poverty line, and many of the poor have little chance of climbing out from their current situation. Many reasons are given for the poor staying poor and, consequently, the hungry staying hungry. The World Health Organization's Commission on the Social Detriments of Health cites the combination of bad policies, economics, inadequate living conditions, the inequitable distribution of resources, and regional conflict as the primary causes of world hunger. While there are thousands of charities, soup kitchens, communal programs, and non-profit organizations that strive to end hunger, their solutions are not considered to be long term. The project examines several possible solutions derived through the work of Robert Egger, a leading activist and proponent of ending world hunger through federal policy and nonprofit cooperation. It will attempt to outline procedures that will help promote self sufficiency amongst the hungry, assess the impact of Egger's work, and examine what role the average person can play in finding a solution.



543 Concourse 1:20-2:20 Board 9

Christy Rogerson

Tom Grady (Faculty Sponsor)

Department of Social Work, Bristol Community College, Fall River, MA, 02720

The Effects of Drug Abuse and Misuse and Resources Available!

One of the most pressing issues in the SouthCoast of Massachusetts is drug abuse, from misusing prescription medications such as Percocet and Oxycontin to the street form of opiates (heroin). This research includes the negative medical, physical, emotional, financial, and social effects of addiction. The main goal is to provide people in our community with resources to assist them in their recovery and with the emotional support that is proven to be a very important aspect of the process of recovery. An additional goal is to forward the idea that substance abusers and their loved ones need not go through this painful process alone, and if more people took advantage of the many resources available, they would succeed in recovery. Pamphlets will be available for people to take home to read in privacy.



Sociology

544 Auditorium 3:50-4:50 Board 32

Angela Kantner

Millie Thayer (Faculty Sponsor)

Department of Social Work, UMass Amherst, Amherst, MA, 01003

The Role of Child's Play: Ethnography of a Low-income, Ecuadorian Primary School

In Ecuador, six out of every ten children live in poverty. Using field research compiled during five-months of volunteer work in an urban school for underprivileged children in Quito, Ecuador, this ethnography seeks to understand the role of play and its relation to students' social experiences. Lack of literature surrounding the topic of poverty and childhood, specifically in Latin America, warrants deeper research on the topic and greater scrutiny of available material, as much information concerning childhood is presented from a middle- to upper-class perspective. This research explores the impact of class differences on students' social environments as well as the forms and importance of play in their lives. The analysis provides insight into the effects of socioeconomic class on acceptable behaviors, gendered dimensions of the children's relationships as well as ways that gender and aggression are manifested in play as a result of class experiences. By analyzing the forms of play engaged in by students at the Unidad Educativa de San Patricio, stark differences are observed between the play of these low income Ecuadorian children and the type of play depicted as a culturally accepted 'norm'. I argue that the form of play used by these students does not reflect developmental capability, but rather social values based on gender and class.



545 Auditorium 3:50-4:50 Board 27

Sang-Yoon Kim

Joan Brenner (Faculty Sponsor)

Department of Sociology, Bunker Hill Community College, Boston, MA, 02129

Psychological Effects on Social Networking: Cultural Differences Reflected on Social Networking in USA and South Korea

Social networking has been one of the most common places where people communicate for the last 5 years. The purpose of this research is to explain what makes people use social networking and how they are encouraged to. This research focuses on psychological effects of social networking in USA and South Korea. Particular social networking focused on for this research was Facebook in USA and Cyworld in South Korea. The sources of the research were articles from Psychology journals and Business journals that examine social networking. The sources were found through Bunker Hill Community College Library database and World Wide Web. Also this research explored news articles and interviews from reputable newspapers in USA and South Korea. This research is expected to reflect and show differences in the behaviors of people in use of social networking in USA and South Korea, and suggest overall thoughts on social networking and psychology.



546 Auditorium 3:50-4:50 Board 33

Molly Mayer

Mary Kay Cordill (Faculty Sponsor)

Department of Sociology, Cape Cod Community College, West Barnstable, MA, 02668

Abortion: Women's Right to Choose

Molly Mayer Abortion: Women's Right to Choose The pro-choice movement is frequently portrayed in the media, the news, and politics, and is constantly being opposed by the pro-life party; but what does the pro-choice movement stand for? Though this movement is well known, some people do not know the details and importance of the pro-choice association. This research project will explore the issues which originally sparked this revolution, and the president of NARAL Pro-Choice America, Nancy Keenan, and her contributions to this worldwide cause. Nancy has been a chief commentator on women's reproductive-health concerns. Her work to reform reproductive rights, defend women's access to legal and safe abortions, and her commitment to public service, and the effectiveness of her work merits attention. Nancy Keenan was included on the list of top 100 most powerful women in Washington, DC by Washingtonian Magazine. Nancy's services to the pro-choice movement have called much attention to herself, and NARAL Pro-Choice America: she has been appeared in the national media explaining her efforts, and securing women's rights. Her speeches and work have often been quoted in the Washington Post, Newsweek, The New York Times and other national publications. The goals shared by Nancy Keegan and her fellow supporters include safely and legally providing abortions to women who did not intend pregnancy, promoting policies to assist prevention of unintended pregnancies, making abortion less necessary, and make access to medical, non-surgical methods of abortion more easily accessible to women.



547 Auditorium 3:50-4:50 Board 31

Kristen Redford

Amy Schalet (Faculty Sponsor)

Department of Sociology, UMass Amherst, Amherst, MA, 01003

Religion and Sexuality: How College Students Reconcile the Two

Many aspects of life change when a person transitions from high school to college. Aside from the obvious lack of parental supervision, the plethora of student activities from which to choose, and the overall feeling of invincibility and independence, a less noticeable change occurs. The vast majority of college students do not attend any religious service on a regular basis anymore. This is significant because many students, either voluntarily or through parental force, attended church to some degree in high school. I wonder, especially for those who enjoyed religious activities as high school students, if the stereotypical hyper-sexualized college lifestyle at least partially influences a previously religiously participating person to reduce or all together discontinue his or her religious observance. The converse relationship also intrigues me. Are college students who still practice a religion less likely to participate in the hyper-sexualized college culture? This study seeks to find answers to these two questions. I began by searching for relevant studies. Many scholars had investigated the relationship between religion and college life, sexuality and college life, religion and adolescents, or sexuality and adolescents. No source that I found directly addressed both religious identity and sexual attitudes and practices among college students. The relationships are indeed important, though: Within religious institutions, issues of sexuality are so stigmatized and often untouched in conversation with adolescents. I predict that as a consequence, college students feel they cannot reconcile their religious upbringings with their sexual desires, attitudes, and practices, and may therefore cut out the aspect that makes them feel bad: religion. Thus, by avoiding the subject of sexuality, religiously observant parents and religious authorities do themselves a disservice. I seek to investigate these relationships through in depth interviews with approximately 12 college students who self-identified as practicing religion in high school. Approximately half of the group still practices to some extent in college. To enhance comparability between them, both practicing and no-longer practicing students have Christian backgrounds.



548 Auditorium 3:50-4:50 Board 28

Elana Schwam

Jennifer Lundquist (Faculty Sponsor)

Department of Sociology, UMass Amherst, Amherst, MA, 01003

The Subculture of Ultimate Frisbee and its Role in Alternative Gender Expression Among Players

Ultimate Frisbee is one of the only sports that is self-officiated (no referees) and has co-ed divisions that compete on an international level. The purpose of this paper is to find if and how this unique aspect of the sport as well as its self-described progressive liberal culture allows for alternative gender expression and identity formulation among Ultimate Frisbee players. I used secondary research on traditional conceptions of masculinity and femininity to contextualize my analysis as well as literature on gender and sport out of the critical feminist and postmodern tradition (Messner, 2007; Messner & Sabo, 1994). I conducted an ethnographic study through participant-observation of various co-ed and women's teams in the New England area for five months. I participated as a player on elite College and Club teams, as well as intramural and pick-up teams. I also conducted several formal interviews with players and coaches and browsed popular public Ultimate Frisbee blogs and forums. My study shows that the game of Ultimate Frisbee is not gender neutral by any means. Instead, men and women are constantly violating and reinforcing traditional gender norms in what I call "gender flexibility." My ethnographic research has shown me that the liberal culture and context that Ultimate Frisbee is defined in allows for alternative gender performances for both men and women. However, even though Ultimate Frisbee offers models for peaceful conflict resolution and gender equity there are still many instances in my research where players reinforce hegemonic gender roles through their words and actions.



549 Auditorium 3:50-4:50 Board 30

Jill Shanahan

Lisa Maya Knauer (Faculty Sponsor)

Department of Sociology, Anthropology, and Crime and Justice Studies,
UMass Dartmouth, N. Dartmouth, MA, 02747-2300

Ethnographic Field Work: Ethics and Methodology

This presentation highlights issues that emerged in the course of my thesis project, "Twin Epidemic: Injection Drug Use and HIV/AIDS Prevention and Education: Then, Now and Future?" The purpose of this study is to look at how one Southeastern Massachusetts community developed a grassroots response to the "twin epidemics" of substance abuse (mainly intravenous drug use) and HIV/AIDS in the late 1980's, based on Harm Reduction theory. Working in HIV Prevention and Education and the state level, I have been given opportunity to witness the decline in funding and other resources for AIDS prevention programs. In this presentation I will draw on two years of participant observation in the drug using community of New Bedford, Ma. while I was simultaneously working in the field of Prevention and Education. Having first hand interactions with the drug using communities through my occupation gave me an authentic perspective I would not have been able to achieve otherwise. However, at the same time, because of my occupational position and the issue of client confidentiality, many ethical and methodological issues arose while doing this research. This case study in applied anthropology is a instructive example of navigating through ethical dilemmas which resulted in the alteration of my methodology. The presentation on reworking methodologies (primarily sample selection) due to ethical concerns, could be useful in any type of ethnographic research. By altering my methodologies I was able to retain my own professional integrity and client confidentiality, while also building a network of informants which would not cross the boundaries of my professional ethics.



Studio Art

550 Concourse 1:20-2:20 Board 62

Matthew Incontri

Marc Mannheimer (Faculty Sponsor)

Department of Studio Art, Northern Essex Community College, Haverhill, MA, 01830

The Story of Pixar's World Domination

Movies have forever been a huge part of the entertainment world. They have the power to evoke feelings of fear, happiness, hate and love. Movies have been known to be performed by live actors, using robotics, and special graphics when needed. But when the world was introduced to the first fully animated digital feature length movie, Toy Story, the film making industry would take a technological twist. Pixar animation studios conquered this task of creating the worlds first fully animated digital movie. Ever since the birth of their first creation, Toy Story, Pixar have been at the top of the film world, from receiving Oscars to forming a partnership with Disney. I researched the depths of Pixar's beginnings as a small technological project to being run by Apple's Co-owner, Steve Jobs. Pixar animation studios doesn't only just produce digital animations, they also have created ground breaking digital animation software for the rest of the world to use. In my study I show the time involved and techniques used to create a film such as Monsters Inc. or Finding Nemo. I discuss the art directions they used to get the final piece on the big screen. The world of digital animation would be almost barbaric without the professionals at Pixar animation studios.

Presenter	Abstract Number		
Abbott, Matthew J.	477	Bliss, Joseph A.	421
Abbuah, Felicia A. 4	78	Bloch, Emily	66
Aberdale, Jillian M.	214	Bober, Michael J.	243
Abro, Erica	516	Bodley-Gomes, Brianna	456
Achildiev, Tatiana	268	Boehm, Michael J.	212
Acquah, Kweku	317	Bolduc, Kevin O.	24
Acton, Hallie E.	47	Bollinger, Julie E.	434
Adams, Stephan	99	Bonazoli, Alexandra J.	215
Adelman, Levi Y.	225	Booras, Dimitrios	482
Adler, Alexandra N.	63	Borowik, Anna	302
Agostini, Christopher J.	466	Botvin, Joshua D.	244
Allen, Colleen M.	467	Boucher, Alicia D.	361
Amirault, Daniel R.	356	Bouley, Elizabeth J.	400
Amrhein, Carly M.	370	Bourdon, Erika	455
Anderson, Christina M.	362	Boynton, Ursula	483
Anderson, Kristen K.	264	Bradley, Courtney E.	435
Anecone, Nathan R.	90	Breen, Kathryn M.	34
Anglin, Rachel A.	65	Brennan, Kelsey	364
Ansong, Kwadwo A.	281	Brennan, Meaghan F.	103
Archibald, Roxanne Y.	64	Brenton, Elizabeth C.	104
Arsenault, Danielle R.	65	Brietzke, Abigail R.	411
Austein-Miller, Geoffrey	318	Brill, Michael	168
Austin, Samantha	435	Broderick, Kelly	105
Austin, Tim	352	Broverman, Andrea M.	226
Babbitt, Matthew	148	Brun, Traci J.	319
Babitskaya, Svetlana B.	462	Brunelle, Amanda L.	67
Bachman, Marcos A.	282	Buckner, Michael A.	269
Bakanowski, Brittany M.	77	Bunzick, Laura	49
Balaban, Samantha	180	Burch, Lauren T.	5
Balduf, Catherine	497	Burns, Brennan	100
Banks, Amy L.	415	Bushey, Robert N.	453
Barnes, Emily J.	379	Butler, Denise A.	285
Barrenechea, Mario B.	357	Cabana, Rebecca	443
Barrette, Michaela K.	479	Calderara, Kaitlin E.	50
Barry, Shannon L.	203	Candland IV, Harold A.	463
Bartsche, David	102	Capone, Vincent	389
Bates, Emily	118	Cappucci, Brad	77
Bell, Ana-Maria	120	Carden, Erin M.	247
Bell, John Michael M.	377	Carlson, Alena	320
Bello, Sarah G.	138	Carpenito, Kirby-Rose	455
Benhayoun, Nabil	283	Carr, Justine M.	396
Benson, Alyssa D.	284	Carr, Katherine A.	118
Benson, Jillian	480	Carroll, Maureen A.	137
Bergeron, Amanda L.	452	Carroll, Rachel A.	484
Berman, Jacqueline	23	Carroll, Victoria	38
Bett, William	91	Casey, Lisa M.	532
Biondi, Marisa	481	Casey, Sarah M.	401
Bissell, Julie A.	373	Centi, Danielle	149
Bitter, Edward M.	48	Cerquera, Brian B.	363
		Chamberlain, Hannah J.	380

Chan, Mimi	169	DeFuria, Jason	74
Chang, Kit	540	Del Valle, Omayra	87
Chapman, Haley	150	Demo, Michael A.	208
Charette, Nick G.	137	Demopoulos, Christopher L.	271
Cherney, Michelle L.	376	Denaro, Zanele P.	439
Chery Jr, Armand	101	Dennis, Madison J.	110
Chest, Alan-Michael	106	Dennis, Venutra R.	118
Chipps, Sarah	436	Dennstedt, Emily	39
Choi, Aryoung	456	DePiano, Christina J.	71
Choly, Maximilian	358	DeSimone, Rebecca A.	531
Christensen, Sandra E.	437	Dewa Ayu, Santi	92
Christopher, Katelyn M.	121	Dezan, Nicole A.	153
Clark, Melissa	68	Diatalevi, Russell	420
Clarke, Samantha	151	Dib, Grace C.	455
Close, Michael A.	454	Dikun, Lori E.	489
Clouser, Amanda F.	270	Do Nascimento, Nara F.	365
Cloyes, Mac	135	Do, Thao X.	321
Cocci, Shannon P.	122	Doane, Bethany	93
Colburn, Molly J.	390	Doane, Bethany M.	250
Collins, Deanna M.	485	Dondero, Justin M.	279
Colomba, Vanessa	486	Donohue, Kelly C	490
Conant, Emily	69	Donovan, Megan E.	402
Conde, Sidafa	200	Donzanti, Allison	118
Conde, Sidafa	197	dosSantos, Thaissa	457
Conlon, Bryan	118	Dowling, Steven E.	118
Connelly, Jamie	487	Ducharme, Danielle M.	350
Contractor, Sherezad R.	51	Duffy, Abby	286
Coomey, Joshua H.	380	Duffy, Caroline M.	272
Costa, Kirstyn B.	378	Duggan, Jeanne B.	69
Costa, Matthew K.	216	Dulong, Jennifer	185
Cournoyer, Shielding E.	184	Dupras, Felicia M.	426
Couto, Valerie	438	Duprey, Mikaela	118
Coyle, Molly L.	123	Dusoe, Keith	322
Crotty, Megan A.	107	Dyrmishi, Ada	323
Crudup, Monet C.	108	Eam, Pagna	196
Cullati, Lauren	455	Eccleston, Alison J.	227
Cupero, Justine	381	Eckart, Nicole E.	287
Curley, Kelleyanne	70	Edmonds, Brendan	93
Cushing, Lindsey L.	258	Egan, Jennifer	217
Czajkowski, Aniela R.	454	Egan, Katelin E.	491
Da Silva, Bibiana O.	456	Egenhofer, Kerstin	25
da Silva, Jr, Airton R.	419	Egna, Shannon	492
Dalia, Alden A.	245	Erb, Scott M.	366
D'Allessandro, Gina L.	109	Escriu-Sune, Marta	95
Damaso, Justin E.	449	Evans, Bronwen	111
Datta, Meenal	315	Evernden, Dana L.	147
Davis, Scott M.	259	Faraci, Jessica L.	288
Dean, Danielle O.	488	Farmer, Caitlin M.	112
Dechtiar, Ana D.	152	Fay, Laura E.	188
DeFeo, Andrew D.	171	Fierro, Kristie	493

Finlayson, Sarah	541	Hall, Daniel J.	173
Finn, Tracy J.	124	Hall, Russell L.	219
Fitzgerald, Ryan	324	Hall, Stephanie N.	514
Floyd, William	260	Hall, Victoria L.	291
Flynn, Heather B.	530	Hanlon, Garrett G.	53
Fogarty, Heather E.	22	Hanna, Nicole M.	328
Foley, Christine E.	458	Haralampieva, Violeta K.	26
Fortier, Nicole M.	6	Harkey, Jennifer	403
Fortin, Emma N.	502	Harris, Mindi J.	54
Fox, Jr., Joseph M.	421	Harris, Mindi J.	58
Francis, La'Kesha	289	Haselton, Emma E.	391
Frary, Eric A.	96	Hathaway, Nick J.	273
Freeman, Hannah E.	290	Hayes, Olivia A.	1
Fricker, Matthew S.	170	Healey, Daniel W.	35
Frye, Anna E.	52	Henry, Kayla	513
Furman, Jillian M.	7	Hermann, Lisa M.	229
Garant, Lauren E.	382	Heron, Matthew	383
Garas, Peter K.	494	Herring, Stephanie L.	502
Garlo, Elizabeth J.	235	Higgins, Sophie	496
Geissert, Allison C.	204	Hoell, Patrick	366
Genovese, Abby L.	533	Holmes, Glenn L.	189
Genovese, Abby L.	302	Holzwanger, Erik A.	292
Gentleman, Vanessa R.	228	Hopkins, Adelaide	418
Gerbick, Lauren M.	440	Horava, Sarena	316
Germain, Kaitlyn	438	Horgan, Brittany	471
Geuder, Patrick S.	495	Horton, Magdalene M.	534
Gianatassio, Ryan L.	325	Huberman, Matt A.	198
Gill, Monica	154	Hudesman, Harry N.	9
Glaser, Lindsay A.	155	Iaconetti, Jennifer	158
Glennie, Corinne R.	97	Iannetta, Theresa R.	497
Glynn, Stephen J.	326	Incontri, Matthew R.	550
Godin, Stephen K.	427	Iokheles, Anna	40
Goggin, Rachel E.	172	Irving, Amanda	498
Goldberg, Daniel	72	Irving, Amanda	486
Gomez-Marchena, Ana Carolina	218	Irving, Emily E.	408
Goncalves, Amanda A.	156	Isaacs, Matthew	209
Goodwin, Natalie A.	157	Isaacs, Stephanie K.	187
Grant, Zachary J.	197	Jacek, Victor J.	65
Grass, Devin W.	186	Janko, Kristen E.	499
Greene, Mark	425	Jeffery, Katie	512
Griecci-Woodsum, Antonina F.	8	John, Elsa	412
Grolman, Joshua M.	43	Johnson, Patricia	159
Guarracino, Daniel	118	Johnson, Trina M.	114
Gunnell, Hannah M.	125	Jones, Charlotte L.	206
Guo, Jialing	353	Jones, Sandra L.	442
Guy, Candice K.	399	Judge, Erin	139
Haber, Shaina	118	Kabbani, Lara	280
Hadley, Megan	482	Kamau, Mercy W.	442
Hakala, Kathryn	113	Kamenetsky, Oleg A.	404
Hakimi, Bejan M.	327	Kantner, Angela R.	544

Kaplan, Erica A.	384	Lemay, Meghan J.	4
Karanja, Kevin	329	Lemrise, Jason	469
Kelleher, Daniel	468	Lepore, Elizabeth	236
Kendall, James	457	Leshinski, Danielle M.	415
Kennedy, Dawn C.	118	Leveille, Willems	346
Khanmalek, Azeen J.	220	Levin, Alan R.	375
Khasin, Maya	428	Li, Nicholas	82
Khorasani, Abraham	293	Libertine, Amanda M.	405
Kia, Oliver A.	374	Liddell, Kathryn	12
Kim, Dae W.	460	Lilly, Jocelyn M.	354
Kim, Sang-Yoon	545	Linehan, Megan J	504
Kimball, Ann M.	199	Litchfield, Matthew K.	126
King, Kacie	441	Liu, Lynn	274
King, Natalie	442	Lo, Henry	505
Kinnard, Kevin	408	Loder, Kristen	87
Kirangi, Kenneth D.	330	Lombardi, Kevin M.	28
Kirsch, Sam H.	210	Lombardi, Kevin M.	30
Klausner, Dalia M.	397	Lopus, Marcie	464
Klisiewicz, David	132	Lucht, Ericca C.	275
Knight, Elana B.	500	Lucius, Cori	455
Knihtila, Ryan R.	331	Ludwig, Natasha	222
Koch, Caroline E.	221	Lund, Dianne E.	118
Kocjan, Paulina	294	Lundquist, Kristina	443
Kokuba, Ryoko	201	Luszcz, Noah J.	542
Korobkin, Molly F.	501	Lynch, Brendan G.	93
Kropp, Lance M.	413	Macharia, Eedwin G.	434
Krupka, Meghan T.	46	MacLure, Michael J.	453
Kuehne, Jennifer	347	Madan, Rohan	482
Kuffel, Carmelo N.	452	Madden, Amanda M.	506
Kunst, Stephanie P.	502	Malatos, Joseph M.	261
Kwawu, Sandra k.	115	Manning, Meghan A.	449
Kwong, Gina S.	73	Manso, Brenda	442
Kwong, Gina S.	472	Margi, Joel K.	507
Lachance, April M.	332	Marine, Joe	243
Laga, Kyle M.	82	Marino, Christine E.	351
Lagerstedt, Christina M.	74	Marino, Kelley M.	393
LaGrassa, Stephanie M.	503	Marrale, Abbie S.	408
Laine, Vanessa	535	Masse, Melissa J.	385
Lamontagne, Jacqueline M.	267	Masterjohn, Katharine	297
Lamontagne, Kevin D.	41	Matar, Roger	498
Lamothe, Rebecca C.	295	Mathews, Jacqueline	454
Lareau, Rachel M.	10	Matlin, Arielle R.	13
Lavine, Allison K.	514	Matos, Dominick A.	298
L'Ecuyer, Rebecca	392	Mayer, Molly E.	546
Ledger, Liane E.	230	Mayhew, Patrick D.	2
Lee, Scott J.	296	McCabe, Marissa A.	161
Lefebvre, Amanda M.	348	McCall, Ainsley	333
Lehan, Brendan M.	11	McCormack, Heather M.	75
Lehotsky, Elise	27	McDougall, Joshua R.	89
Lehtinen, Catherine	160	McElwee, Alyssa J.	516

McGloin, Stephanie M.	62	Nguyen, Margaret T.	337
McGovern, Kelly L.	237	Nguyen, Tam	55
McKay, Lauren E.	508	Nielsen, Kendra J.	141
McKeever, Roxanna P.	444	Noel, Sadie	361
McKenna, Dillon	408	Noonan, Ashley E.	503
McKennon, Justin P.	213	O'Connor, James M.	423
McKinley, Stephen A.	422	O'Connor, Jessica	37
McLaren, J. Alexandria M.	162	O'Connor, Kayleigh M.	62
McLaren, Jaye E.	509	O'Connor, Kelley M.	367
McNamara, Patricia A.	334	O'Leary, Sean C.	415
McNulty, Allison C.	299	Oliveira, Salua M.	514
McNulty, Bronwyn	140	O'Malley, Donica C.	56
McNulty, Matthew	116	Osakwe, Adanma I.	239
McPherson, Stephanie M.	178	O'Shea, Danielle M.	465
Meegan, Dan J.	248	Owusu-Ansah, Benjamin K.	98
Meehan, Alexa M.	335	Pacifico, Marisa A.	77
Meehan, Christopher R.	394	Paiva, Thomas J.	33
Mellish, Heather M.	265	Palladini, Dawn M.	504
Mercedes, Greici V.	336	Pallone, Stephanie M.	31
Mercedes, Greici V.	45	Paon, Ashley E.	118
Merrill, Brett M.	408	Pastore, Sophia	14
Mientka, Kristen A.	246	Patel, Rima R.	240
Miklinevich, Kaitlyn M.	276	Patti, Christina M.	446
Milano, Nicholas J.	238	Pease, Sarah	117
Miller, Corrie	510	Pejo, Ervin	277
Minter, Samantha L.	457	Perezella, Donna	395
Miranda, Erica	442	Perlman, Stacey E.	127
Mitchell, Leah B.	511	Persaud, Amanda D.	515
Morales-Lopez, Jorge F.	223	Person, Katherine E.	78
Moran, Lauren	512	Pezzello, Christina M.	79
Moravia, Michel E.	42	Pfeiffer, Katelyn M.	491
Morelli, Emma	513	Pham, Khanh N.	301
Morrison, Nicholas R.	231	Phou, Lina	15
Morse, Clayton J.	460	Pinheiro, Chris	69
Mostafa, Lubna	29	Pinheiro, Michael P.	202
Muellejans, Ruth A.	251	Piotrowska, Katarzyna M.	433
Mullin, Lauren G.	300	Pitt, Joshua D.	386
Mulroy, Meagan L.	190	Pitts, Alyson	129
Munger, J. Michael	30	Poitras, Christopher R.	87
Munro, Joshua I.	262	Poole, Charles D.	200
Murphy, Benjamin J.	422	Poole, Charles D.	198
Murphy, Gillian S.	235	Potts, Jessica M.	163
Murphy, Kristen	502	Poulin, Colleen P.	516
Murphy, Michael C.	211	Pourghasemi, Pasha	416
Myers, Michaela L.	174	Powell, Michael R.	191
Nagel, Kelsey A.	76	Powell, Robert P.	368
Nalette, Jo-Ann M.	452	Pradhan, Sushant	388
Nazzaro, Alison	445	Previlon, Jessica	355
Neville, Matthew	232	Prince-Moughan, Jenifer M.	369
Ngo, Thao	434	Prouty, Erika	302

Psyris, Thomas	447	Schwam, Elana	548
Quercio, Michael J.	387	Secinaro, Kristina	207
Quiasua, Bibiana	303	Secinaro, Kristina M.	455
Quinn, Caitlin M.	164	Seery, Emily M.	407
Quinn, Kelly M.	57	Sfeir, Nathana	249
Quinones, Marvin	252	Shah, Ankit V.	430
Ramirez, Paola A.	3	Shan, Shao-Kang	175
Raymond, Paige B.	513	Shanahan, Jill	549
Redford, Kristen	547	Shanley, Ryan M.	143
Reed, Jaimie	80	Sharaf, Nematullah	278
Reed, Jennifer L.	16	Shay, David	133
Rega, Christine C.	304	Shepard, Sarah M.	448
Regan, Victoria G.	502	Shere, Amar	519
Reif, Mackenzie	58	Sherman, Caitlin P.	520
Remillard, Catherine D.	459	Shimek, Christina M.	521
Reynolds, Melodie F.	257	Sigal, Maksim	522
Rheault, Nicole M.	459	Silva, Rafael	416
Richards, Alyson L.	118	Simmons, Eric J.	176
Richter, Emily S.	517	Simoni, Andrea M.	523
Riding, Audra L.	473	Slygh, Max	59
Rigby, Dawn A.	524	Smith, Andrew G.	339
Ritchie, Sarah E.	195	Smith, Diane A.	368
Rivel, Alon	165	Smith, Tyrone A.	266
Rivero, Jennifer M.	179	Snow, Sarah M.	263
Robare, Kelsey L.	81	Soares, Aiza	449
Robillard, Jesse T.	429	Spencer, Bradford	340
Robinson, Victoria	359	Spencer, Jessica	483
Rodriguez, Uriel F.	166	Sprague, Alexandra K.	32
Rogalin, Henry	338	St Pierre, Roodolph	341
Rogers, Christina a.	458	St. Pierre, Bridget M.	507
Rogerson, Christy L.	543	Stangas, Nick	425
Rooke, Kiersten S.	224	Stanikmas, Felicia M.	460
Rosario, Adnolan A.	522	Stasiewicz, Agnes A.	234
Rossi, Richard F.	360	Stasiewicz, Agnes A.	524
Rothschild, Jeffrey A.	474	Steele, Donald P.	88
Routhier, Alissa A.	434	Steilen, Dani R.	408
Roy, Ryan	82	Stevens, Matthew C.	342
Rugel, Tatiana L.	518	Stevenson, Rachael M.	306
Russell, Chris	142	Stewart, Elizabeth M.	307
Ryan, Laura E.	370	Stewart, John P.	253
Saia, Caitlin	241	Stone, Caleb	254
Salazar, Emiliano Q.	17	Storer, Nancy C.	452
Salerno, James M.	416	Strathearn, Megan	18
Sanders, Bailey	406	Studt, Benjamin I.	459
Sanon, Christina	233	Suarez, Gimena S.	308
Savinski, Sabrina	118	Sullivan, Anna	371
Sayan, Ardalan	305	Sullivan, James K.	416
Scantlebury, Gregory P.	424	Sutor-Segoshi, Megan S.	83
Schaub, Jeremy	349	Swartz, Samuel A.	192
Schmidt, Ellinor D.	44	Swenson, Kirsten J.	255

Swiecicki, Josh	256	Werner, Kathleen S.	529
Sypteras, Frances	456	Whalen, Jeromie P.	145
Taddeo, Mark E.	368	Wharton, Emily A	530
Tannheimer, Ray A.	90	White, Alissa	461
Tavernini, Jessica I.	525	Wieber, Brandon M.	119
Taylor, Cassandra A.	414	Wilcox, Brian m.	128
Tedone, Thomas S.	94	Williams, Josalyn C.	20
Telman, Cory R.	19	Willis, Joseph T.	146
Terrill, Kira	516	Wilson, Anthony	539
Teser, Kaitlyn B.	537	Wilson, Lane H.	314
Thistle, Laura J.	409	Wojnarowski, Ashley B.	410
Thomas, Adam J.	193	Wright, James P.	21
Thorpe, Conner	431	Xu, Jing	177
Tishler, Nicole E.	84	York, David G.	345
Tobias, Jared	136	Young, Rachel A.	36
Tokar, Dmitry	432	Yuen, Mankin	82
Tomasetti, Christina	533	Yurkova, Irina	451
Toner, Deanna C.	526	Zac, Amanda R.	181
Torpey, Megan C.	30	Zelas, Cory R.	205
Trabucco, Gina M.	309	Zeller, Adam	61
Tran, Baovy	310	Zeller, Adam	58
Travers, Stephanie M.	538	Zewdie, Fesehaye H.	476
Triano, Daniel W.	194	Zucco, Brian J.	183
Trindade, Antero M.	366	Zwetchkenbaum, Hannah A.	531
Troy, Stephen T.	243		
Truong, Derek	134		
Urban, Melissa	85		
Uwandu, Chiedozie C.	311		
Valaskatgis, Rachelle	372		
Van Houtte, Olivier P.	86		
Van Houtte, Olivier P.	312		
Vanasse, Robert D.	475		
Vasques, Kenneth A.	313		
Vayda, Matthew A.	182		
Videira, Unelia	450		
Vincent, Jacquelyn E.	130		
Virgilio , Tawny R.	131		
Wall, Courtney	513		
Walsh, Cassandra L.	417		
Walsh, Daniel C.	470		
Walsh, Erin E.	539		
Wanamaker, Amy L.	60		
Wang, Jing	343		
Webb, Caitlin Y.	242		
Wedge, Morgan C.	527		
Weiner, Alex J.	528		
Weiss, Rose	398		
Welford, Emma J.	144		
Wells, Sarah P.	167		
Welsh, Jason R.	344		

Berkshire Community College

Stone, Caleb 254

Bristol Community College

Botvin, Joshua D. 244

Eam, Pagna 196

Kokuba, Ryoko 201

Masse, Melissa J. 385

Paiva, Thomas J. 33

Rogerson, Christy L. 543

Smith, Tyrone A. 266

Bunker Hill Community College

Abbuah, Felicia A. 478

Agostini, Christopher J. 466

Austin, Tim 352

Babitskaya, Svetlana B. 462

Candland IV, Harold A. 463

Cerquera, Brian B. 363

Chang, Kit 540

Dondero, Justin M. 279

Francis, La'Kesha 289

Guo, Jialing 353

Heron, Matthew 383

John, Elsa 412

Kabbani, Lara 280

Kia, Oliver A. 374

Kim, Sang-Yoon 545

Kropp, Lance M. 413

Marino, Kelley M. 393

McCabe, Marissa A. 161

McCall, Ainsley 333

Nguyen, Tam 55

Perezella, Donna 395

Previlon, Jessica 355

Quiasua, Bibiana 303

Robinson, Victoria 359

Sanon, Christina 233

Taylor, Cassandra A. 414

Zewdie, Fesehay H. 476

Cape Cod Community College

Brietzke, Abigail R. 411

Cherney, Michelle L. 376

Costa, Kirstyn B. 378

Do Nascimento, Nara F. 365

Finlayson, Sarah 541

Haselton, Emma E. 391

Jones, Charlotte L. 206

Kuehne, Jennifer 347

Luszcz, Noah J. 542

Mayer, Molly E. 546

Meegan, Dan J. 248

Meehan, Christopher R. 394

Pitt, Joshua D. 386

Schaub, Jeremy 349

Sfeir, Nathana 249

Stewart, John P. 253

Wedge, Morgan C. 527

Fitchburg State College

Bachman, Marcos A. 282

Bober, Michael J. 243

Dalia, Alden A. 245

Marine, Joe 243

Shimek, Christina M. 521

Suarez, Gimena S. 308

Troy, Stephen T. 243

Framingham State College

Abro, Erica 516

Balduf, Catherine 497

Banks, Amy L. 415

Boynton, Ursula 483

Brennan, Kelsey 364

Brun, Traci J. 319

Carroll, Rachel A. 484

Christopher, Katelyn M. 121

Del Valle, Omayra 87

Dennis, Madison J. 110

DeSimone, Rebecca A. 531

Dupras, Felicia M. 426

Egan, Katelin E. 491

Erb, Scott M. 366

Flynn, Heather B. 530

Fortin, Emma N. 502

Hall, Stephanie N. 514

Henry, Kayla 513

Herring, Stephanie L. 502

Hoell, Patrick 366

Iannetta, Theresa R. 497

Jeffery, Katie 512

Kunst, Stephanie P. 502

LaGrassa, Stephanie M. 503

Lavine, Allison K. 514

L'Ecuyer, Rebecca 392

Lefebvre, Amanda M. 348

Leshinski, Danielle M. 415

Linehan, Megan J. 504

Loder, Kristen 87

McElwee, Alyssa J.	516	Choi, Aryoung	456
McNulty, Allison C.	299	Da Silva, Bibiana O.	456
Miller, Corrie	510	dosSantos, Thaissa	457
Mitchell, Leah B.	511	Kendall, James	457
Moran, Lauren	512	Kim, Dae W.	460
Moravia, Michel E.	42	Kuffel, Carmelo N.	452
Morelli, Emma	513	MacLure, Michael J.	453
Murphy, Kristen	502	Minter, Samantha L.	457
Noonan, Ashley E.	503	Morse, Clayton J.	460
O'Leary, Sean C.	415	Nalette, Jo-Ann M.	452
Oliveira, Salua M.	514	Remillard, Catherine D.	459
Palladini, Dawn M.	504	Rheault, Nicole M.	459
Pfeiffer, Katelyn M.	491	Stanikmas, Felicia M.	460
Poitras, Christopher R.	87	Storer, Nancy C.	452
Poulin, Colleen P.	516	Studt, Benjamin I.	459
Pourghasemi, Pasha	416	Sypteras, Frances	456
Powell, Robert P.	368		
Raymond, Paige B.	513	North Shore Community College	
Regan, Victoria G.	502	Doane, Bethany	93
Rigby, Dawn A.	536	Doane, Bethany M.	250
Rigby, Dawn A.	524	Edmonds, Brendan	93
Salerno, James M.	416	Lynch, Brendan G.	93
Silva, Rafael	416		
Smith, Diane A.	368	Northern Essex Community College	
Spencer, Jessica	483	Anderson, Christina M.	362
Stasiewicz, Agnes A.	234	Anderson, Kristen K.	264
Stasiewicz, Agnes A.	524	Incontri, Matthew R.	550
Sullivan, James K.	416	McDougall, Joshua R.	89
Taddeo, Mark E.	368	Prince-Moughan, Jenifer M.	369
Terrill, Kira	516		
Travers, Stephanie M.	538	Quinsigamond Community College	
Trindade, Antero M.	366	Collins, Deanna M.	485
Wall, Courtney	513	Lopus, Marcie	464
Wharton, Emily A.	530	McLaren, J. Alexandria M.	162
Zwetchkenbaum, Hannah A.	531	O'Connor, James M.	423
		Owusu-Ansah, Benjamin K.	98
		Sullivan, Anna	371
Holyoke Community College			
Pinheiro, Michael P.	202		
		Salem State College	
Massachusetts College of Liberal Arts		Brenton, Elizabeth C.	104
Robillard, Jesse T.	429	Dulong, Jennifer	185
		Gentleman, Vanessa R.	228
Middlesex Community College		Gerbick, Lauren M.	440
Anecone, Nathan R.	90	Holmes, Glenn L.	189
Tannheimer, Ray A.	90	Patti, Christina M.	446
		Ritchie, Sarah E.	195
Mount Wachusett Community College		Valaskatgis, Rachelle	372
Bergeron, Amanda L.	452	Videira, Unelia	450
Bodley-Gomes, Brianna	456	Wieber, Brandon M.	119
Bushey, Robert N.	453		

UMass Amherst

Abbott, Matthew J.	477	Close, Michael A.	454
Aberdale, Jillian M.	214	Clouser, Amanda F.	270
Acton, Hallie E.	47	Cloyes, Mac	135
Adams, Stephan	99	Conant, Emily	69
Adelman, Levi Y.	225	Conlon, Bryan	118
Adler, Alexandra N.	63	Contractor, Sherezad R.	51
Amirault, Daniel R.	356	Coomey, Joshua H.	380
Anglin, Rachel A.	65	Cullati, Lauren	455
Archibald, Roxanne Y.	64	Curley, Kelleyanne	70
Arsenault, Danielle R.	65	Cushing, Lindsey L.	258
Austein-Miller, Geoffrey	318	Czajkowski, Aniela R.	454
Babbitt, Matthew	148	da Silva, Jr, Airton R.	419
Bakanowski, Brittany M.	77	D'Allessandro, Gina L.	109
Balaban, Samantha	180	Datta, Meenal	315
Barnes, Emily J.	379	Dean, Danielle O.	488
Barrenechea, Mario B.	357	Dechtiar, Ana D.	152
Barrette, Michaela K.	479	DeFeo, Andrew D.	171
Barry, Shannon L.	203	DeFuria, Jason	74
Bates, Emily	118	Demo, Michael A.	208
Bello, Sarah G.	138	Demopoulos, Christopher L.	271
Benhayoun, Nabil	283	Dennis, Venutra R.	118
Benson, Alyssa D.	284	DePiano, Christina J.	71
Berman, Jacqueline	23	Dezan, Nicole A.	153
Bitter, Edward M.	48	Diatalevi, Russell	420
Bliss, Joseph A.	421	Dib, Grace C.	455
Bloch, Emily	66	Dikun, Lori E.	489
Bolduc, Kevin O.	24	Donohue, Kelly C.	490
Bonazoli, Alexandra J.	215	Donovan, Megan E.	402
Bourdon, Erika	455	Donzanti, Allison	118
Breen, Kathryn M.	34	Dowling, Steven E.	118
Broderick, Kelly	105	Ducharme, Danielle M.	350
Broverman, Andrea M.	226	Duffy, Caroline M.	272
Brunelle, Amanda L.	67	Duggan, Jeanne B.	69
Buckner, Michael A.	269	Duprey, Mikaela	118
Bunzick, Laura	49	Eccleston, Alison J.	227
Burns, Brennan	100	Eckart, Nicole E.	287
Capone, Vincent	389	Egenhofer, Kerstin	25
Cappucci, Brad	77	Egna, Shannon	492
Carden, Erin M.	247	Evernden, Dana L.	147
Carpenito, Kirby-Rose	455	Faraci, Jessica L.	288
Carr, Katherine A.	118	Fierro, Kristie	493
Carroll, Victoria	38	Floyd, William	260
Casey, Sarah M.	401	Fogarty, Heather E.	22
Centi, Danielle	149	Foley, Christine E.	458
Chamberlain, Hannah J.	380	Fortier, Nicole M.	6
Chapman, Haley	150	Fox, Jr., Joseph M.	421
Chipps, Sarah	436	Frye, Anna E.	52
Clark, Melissa	68	Furman, Jillian M.	7
Clarke, Samantha	151	Garant, Lauren E.	382
		Garas, Peter K.	494

Gill, Monica	154	Lagerstedt, Christina M.	74
Glaser, Lindsay A.	155	Laine, Vanessa	535
Godin, Stephen K.	427	Lamontagne, Kevin D.	41
Goggin, Rachel E.	172	Lamothe, Rebecca C.	295
Goldberg, Daniel	72	Lee, Scott J.	296
Goncalves, Amanda A.	156	Lehan, Brendan M.	11
Goodwin, Natalie A.	157	Lehotsky, Elise	27
Grass, Devin W.	186	Lehtinen, Catherine	160
Greene, Mark	425	Lemay, Meghan J.	4
Griecci-Woodsum, Antonina F.	8	Lepore, Elizabeth	236
Grolman, Joshua M.	43	Levin, Alan R.	375
Guarracino, Daniel	118	Li, Nicholas	82
Haber, Shaina	118	Libertine, Amanda M.	405
Hakala, Kathryn	113	Liddell, Kathryn	12
Hakimi, Bejan M.	327	Liu, Lynn	274
Hall, Daniel J.	173	Lombardi, Kevin M.	28
Hall, Victoria L.	291	Lombardi, Kevin M.	30
Hanlon, Garrett G.	53	Lucius, Cori	455
Harkey, Jennifer	403	Lund, Dianne E.	118
Harris, Mindi J.	54	Malatos, Joseph M.	261
Harris, Mindi J.	58	Marino, Christine E.	351
Hathaway, Nick J.	273	Marrale, Abbie S.	408
Healey, Daniel W.	35	Mathews, Jacqueline	454
Horava, Sarena	316	Matlin, Arielle R.	13
Horgan, Brittany	471	Matos, Dominick A.	298
Hudesman, Harry N.	9	McCormack, Heather M.	75
Iaconetti, Jennifer	158	McGloin, Stephanie M.	62
Iokheles, Anna	40	McGovern, Kelly L.	237
Irving, Emily E.	408	McKeever, Roxanna P.	444
Isaacs, Matthew	209	McKenna, Dillon	408
Isaacs, Stephanie K.	187	McKinley, Stephen A.	422
Jacek, Victor J.	65	McNulty, Matthew	116
Janko, Kristen E.	499	McPherson, Stephanie M.	178
Johnson, Patricia	159	Merrill, Brett M.	408
Kamenetsky, Oleg A.	404	Miklinevich, Kaitlyn M.	276
Kantner, Angela R.	544	Milano, Nicholas J.	238
Kaplan, Erica A.	384	Morrison, Nicholas R.	231
Kennedy, Dawn C.	118	Mostafa, Lubna	29
Khanmalek, Azeen J.	220	Muellejans, Ruth A.	251
Khasin, Maya	428	Munger, J. Michael	30
Khorasani, Abraham	293	Munro, Joshua I.	262
King, Kacie	441	Murphy, Benjamin J.	422
Kinnard, Kevin	408	Myers, Michaela L.	174
Klausner, Dalia M.	397	Nagel, Kelsey A.	76
Knight, Elana B.	500	Nazzaro, Alison	445
Koch, Caroline E.	221	Nielsen, Kendra J.	141
Krupka, Meghan T.	46	O'Connor, Jessica	37
Kwong, Gina S.	73	O'Connor, Kayleigh M.	62
Kwong, Gina S.	472	O'Malley, Donica C.	56
Laga, Kyle M.	82	Pacifico, Marisa A.	77

Pallone, Stephanie M.	31	Sherman, Caitlin P.	520
Paon, Ashley E.	118	Sigal, Maksim	522
Pastore, Sophia	14	Simmons, Eric J.	176
Patel, Rima R.	240	Simoni, Andrea M.	523
Pease, Sarah	117	Slygh, Max	59
Pejo, Ervin	277	Smith, Andrew G.	339
Perlman, Stacey E.	127	Sprague, Alexandra K.	32
Persaud, Amanda D.	515	Stangas, Nick	425
Person, Katherine E.	78	Steilen, Dani R.	408
Pezzello, Christina M.	79	Stevens, Matthew C.	342
Pham, Khanh N.	301	Stevenson, Rachael M.	306
Phou, Lina	15	Strathearn, Megan	18
Pinheiro, Chris	69	Sutor-Segoshi, Megan S.	83
Potts, Jessica M.	163	Swenson, Kirsten J.	255
Psyris, Thomas	447	Swiecicki, Josh	256
Quercio, Michael J.	387	Tavernini, Jessica I.	525
Quinn, Caitlin M.	164	Telman, Cory R.	19
Quinn, Kelly M.	57	Thistle, Laura J.	409
Redford, Kristen	547	Tishler, Nicole E.	84
Reed, Jaimie	80	Tokar, Dmitry	432
Reed, Jennifer L.	16	Torpey, Megan C.	30
Rega, Christine C.	304	Trabucco, Gina M.	309
Reif, Mackenzie	58	Urban, Melissa	85
Richards, Alyson L.	118	Van Houtte, Olivier P.	86
Rivel, Alon	165	Van Houtte, Olivier P.	312
Rivero, Jennifer M.	179	Vanasse, Robert D.	475
Robare, Kelsey L.	81	Vasques, Kenneth A.	313
Rodriguez, Uriel F.	166	Vayda, Matthew A.	182
Rogers, Christina a.	458	Wanamaker, Amy L.	60
Rooke, Kiersten S.	224	Weiner, Alex J.	528
Rosario, Adnolan A.	522	Weiss, Rose	398
Rothschild, Jeffrey A.	474	Welford, Emma J.	144
Roy, Ryan	82	Wells, Sarah P.	167
Rugel, Tatiana L.	518	Werner, Kathleen S.	529
Russell, Chris	142	Whalen, Jeromie P.	145
Saia, Caitlin	241	White, Alissa	461
Salazar, Emiliano Q.	17	Williams, Josalyn C.	20
Sanders, Bailey	406	Wright, James P.	21
Savinski, Sabrina	118	Xu, Jing	177
Sayan, Ardalan	305	Young, Rachel A.	36
Scantlebury, Gregory P.	424	Yuen, Mankin	82
Schmidt, Ellinor D.	44	Yurkova, Irina	451
Schwam, Elana	548	Zelas, Cory R.	205
Secinaro, Kristina	207	Zeller, Adam	61
Secinaro, Kristina M.	455	Zeller, Adam	58
Seery, Emily M.	407	Zucco, Brian J.	183
Shan, Shao-Kang	175		
Sharaf, Nematullah	278	UMass Boston	
Shepard, Sarah M.	448	Achildiev, Tatiana	268
Shere, Amar	519	Ansong, Kwadwo A.	281

Bett, William	91	St Pierre, Roodolph	341
Biondi, Marisa	481	Swartz, Samuel A.	192
Boehm, Michael J.	212	Thomas, Adam J.	193
Butler, Denise A.	285	Toner, Deanna C.	526
Carlson, Alena	320	Tran, Baovy	310
Chan, Mimi	169	Triano, Daniel W.	194
Choly, Maximilian	358	Truong, Derek	134
Christensen, Sandra E.	437	Uwandu, Chiedozie C.	311
Crotty, Megan A.	107	Wang, Jing	343
Davis, Scott M.	259	York, David G.	345
Dewa Ayu, Santi	92		
Do, Thao X.	321	UMass Dartmouth	
Duffy, Abby	286	Allen, Colleen M.	467
Egan, Jennifer	217	Austin, Samantha	435
Escriu-Sune, Marta	95	Bell, Ana-Maria	120
Evans, Bronwen	111	Bell, John Michael M.	377
Fay, Laura E.	188	Bradley, Courtney E.	435
Fitzgerald, Ryan	324	Cabana, Rebecca	443
Gianatassio, Ryan L.	325	Carr, Justine M.	396
Gomez-Marchena, Ana Carolina	218	Cocci, Shannon P.	122
Haralampieva, Violeta K.	26	Conde, Sidafa	200
Hayes, Olivia A.	1	Conde, Sidafa	197
Higgins, Sophie	496	Costa, Matthew K.	216
Holzwanger, Erik A.	292	Couto, Valerie	438
Horton, Magdalene M.	534	Damaso, Justin E.	449
Johnson, Trina M.	114	Fricker, Matthew S.	170
Jones, Sandra L.	442	Germain, Kaitlyn	438
Kamau, Mercy W.	442	Grant, Zachary J.	197
King, Natalie	442	Hopkins, Adelaide	418
Kocjan, Paulina	294	Huberman, Matt A.	198
Lachance, April M.	332	Kelleher, Daniel	468
Lo, Henry	505	Kimball, Ann M.	199
Madden, Amanda M.	506	Lamontagne, Jacqueline M.	267
Manso, Brenda	442	Lemrise, Jason	469
McKay, Lauren E.	508	Leveille, Willems	346
McNulty, Bronwyn	140	Litchfield, Matthew K.	126
Meehan, Alexa M.	335	Lundquist, Kristina	443
Miranda, Erica	442	Manning, Meghan A.	449
Mullin, Lauren G.	300	Mayhew, Patrick D.	2
Neville, Matthew	232	McKennon, Justin P.	213
Osakwe, Adanma I.	239	Mellish, Heather M.	265
Piotrowska, Katarzyna M.	433	Mercedes, Greici V.	336
Pitts, Alyson	129	Mercedes, Greici V.	45
Powell, Michael R.	191	Poole, Charles D.	200
Pradhan, Sushant	388	Poole, Charles D.	198
Ramirez, Paola A.	3	Quinones, Marvin	252
Reynolds, Melodie F.	257	Riding, Audra L.	473
Rogalin, Henry	338	Shah, Ankit V.	430
Rossi, Richard F.	360	Shanahan, Jill	549
Shay, David	133	Soares, Aiza	449

Kirangi, Kenneth D.	330
Kirsch, Sam H.	210
Knihtila, Ryan R.	331
Lucht, Ericca C.	275
Macharia, Eedwin G.	434
Masterjohn, Katharine	297
McNamara, Patricia A.	334
Murphy, Michael C.	211
Ngo, Thao	434
Nguyen, Margaret T.	337
Routhier, Alissa A.	434
Spencer, Bradford	340
Welsh, Jason R.	344