


4-25-2013

## 2013 - The Eighteenth Annual Symposium of Student Scholars

Follow this and additional works at: <http://digitalcommons.kennesaw.edu/sssprogramms>

 Part of the [Architecture Commons](#), [Arts and Humanities Commons](#), [Business Commons](#), [Education Commons](#), [Engineering Commons](#), [Life Sciences Commons](#), [Medicine and Health Sciences Commons](#), [Physical Sciences and Mathematics Commons](#), and the [Social and Behavioral Sciences Commons](#)

---

### Recommended Citation

"2013 - The Eighteenth Annual Symposium of Student Scholars" (2013). *Symposium of Student Scholars Program Books*. Book 13.  
<http://digitalcommons.kennesaw.edu/sssprogramms/13>

This Book is brought to you for free and open access by the Center for Excellence in Teaching and Learning at DigitalCommons@Kennesaw State University. It has been accepted for inclusion in Symposium of Student Scholars Program Books by an authorized administrator of DigitalCommons@Kennesaw State University. For more information, please contact [digitalcommons@kennesaw.edu](mailto:digitalcommons@kennesaw.edu).



18TH ANNUAL  
**SYMPOSIUM OF  
STUDENT SCHOLARS**

*AND Undergraduate Research  
Reception*

APRIL 2013

*18th Annual*  
*Symposium of Student Scholars*  
*Undergraduate Research/Creative Activity*  
*Reception*

**APRIL 25, 2013**  
**CONVOCATION CENTER**

**PROGRAM**

4:00pm – 5:00pm

Undergraduate Research Reception

Remarks by Dr. Ken Harmon, Provost, Vice President for Academic Affairs, Professor of Accounting

Names read by Dr. Amy Buddie, Associate Director for Graduate Student Support and Undergraduate Research/Creative Activity - Center for Excellence in Teaching and Learning, Associate Professor of Psychology

5:00pm – 6:00pm

Poster Session

6:00pm – 8:00pm

Oral Presentations and Performances

April 25, 2013

Dear Mentors and Mentees,

We wish to thank you for attending this special ceremony in honor of all of you for your engagement in scholarship activities in 2012-2013. We hope that your experience has been significant and trans-formative. Your journey has only begun. The two of you will interact for years to come and become professional colleagues. At KSU we believe that undergraduate scholarship is an essential component of our mission to mentor students and provides an opportunity to deepen your learning and ultimate post-graduate success. This mentoring relationship will not only increase retention, progression, and graduation success but will also create a pool of committed, successful, and active alumni. We thank you for engaging in the process of discovery, not only in research and creative activities, but also in the professional relationship.

Sincerely,



Michele DiPietro, Ph.D.  
Associate Professor of Statistics and  
Executive Director of CETL



Amy Buddie, Ph.D.  
Associate Professor of Psychology and  
CETL Associate Director for Graduate Student Support and Undergraduate Research/Creative  
Activity

# TABLE OF CONTENTS

<b>Undergraduate Research/Creative Activity Reception Honorees .....</b>	<b>12</b>
Bagwell College of Education.....	13
<i>Early Childhood Birth through Kindergarten .....</i>	<i>13</i>
<i>Early Childhood Education .....</i>	<i>13</i>
Coles College of Business.....	13
<i>Accounting.....</i>	<i>13</i>
<i>Information Systems .....</i>	<i>13</i>
<i>Management .....</i>	<i>14</i>
College of Humanities and Social Sciences .....	14
<i>Anthropology .....</i>	<i>14</i>
<i>Communication.....</i>	<i>15</i>
<i>English .....</i>	<i>15</i>
<i>English Education.....</i>	<i>15</i>
<i>Geographic Information Sciences .....</i>	<i>16</i>
<i>Geography .....</i>	<i>16</i>
<i>History .....</i>	<i>16</i>
<i>International Affairs .....</i>	<i>16</i>
<i>Modern Language and Culture.....</i>	<i>17</i>
<i>Psychology .....</i>	<i>17</i>
College of Science and Mathematics .....	20
<i>Biochemistry.....</i>	<i>20</i>
<i>Biology .....</i>	<i>21</i>
<i>Chemistry .....</i>	<i>22</i>
<i>Computer Science.....</i>	<i>24</i>
<i>Mathematics.....</i>	<i>24</i>
College of the Arts .....	25
<i>Art.....</i>	<i>25</i>
<i>Art History.....</i>	<i>25</i>
<i>Music Performance .....</i>	<i>25</i>
<i>Theatre and Performance Studies .....</i>	<i>25</i>
University College .....	26
<i>First Year Experience Programs .....</i>	<i>26</i>
<i>Interdisciplinary Studies.....</i>	<i>27</i>
WellStar College of Health and Human Services .....	27
<i>Human Services .....</i>	<i>27</i>

<b>Presentation Abstracts .....</b>	<b>28</b>
Bagwell College of Education.....	29
<i>Early Childhood Birth to Five Year .....</i>	<i>29</i>
Teaching Creative Arts Using Children’s Literature: Woodblock Printing Techniques and Using Pencils by Erin Stead Emily Williamson Faculty Mentor: Yanghee Kim .....	29
<i>Early Childhood Education .....</i>	<i>30</i>
Fourth Graders Creating Scripts on Colonial Times: An Integrated Project Across the Curriculum Jennifer Elie Faculty Mentor: Stacy Delacruz, Sohyun An .....	30
Coles College of Business.....	31
<i>Information Systems .....</i>	<i>31</i>
The Significance of “I” in Brain Computer Interfaces Lisa Sapp Faculty Mentor: Adriane Randolph .....	31
Perceptions of Faculty Mentors of Undergraduate Research Lisa Sapp, Shavon Trice Faculty Mentor: Amy Buddie .....	32
<i>Management .....</i>	<i>33</i>
LOL KOREA Sangwook Ham, Jae Euk Yoo, Jasmine Wright Faculty Mentor: Kristine Hwang, Yanghee Kim .....	33
College of Humanities and Social Sciences .....	34
<i>Anthropology .....</i>	<i>34</i>
Finding the Path of Heroes: Creating Stories in a Fantasy Role Playing Setting Duncan Balinger Faculty Mentor: Brandon Lundy .....	34
Man or Mountain? Comparing Constructed and Geographic Defenses in Rajasthan India Duncan Balinger Faculty Mentor: Teresa Raczek .....	35
Children of the Uruguayan Diaspora: Negotiating Identities of the South in the North Paola Garcia Faculty Mentor: Debarati Sen .....	36
Defining Deafness: A Look at the American Sign Language Club at Kennesaw State University Mollie Gilstrap Faculty Mentor: Brandon Lundy .....	37
Environmental Assessment of Vineyard Mountain Trail, Allatoona Dam Army Corps of Engineers Land Olivia Pisano Faculty Mentor: Wayne Van Horne .....	38
Forensic Anthropology and Genetics: A Discussion of Variation and Holistic Approaches to the Medico-Legal Discipline Kelci Ragsdale Faculty Mentor: Susan Kirkpatrik Smith .....	39
Reciprocity of Informal Education in a Museum Setting Samantha Roberts Faculty Mentor: Brandon Lundy .....	40
Population Correlation: Archaeological Site Size in the Mewar Plain, India Caitlin Syfrett Faculty Mentor: Teresa Raczek .....	41

How mitochondrial DNA is used within Anthropology to Trace Human Migration Patterns and Detect Genetic Variation among Homo sapiens April Tolley Faculty Mentor: Susan Kirkpatrik Smith .....	42
<i>Communication</i> .....	43
An Organizational Culture Analysis of the Consulate of Brazil Natalia Cabral Faculty Mentor: Audrey Allison .....	43
<i>English</i> .....	44
Fourteenth Century Female Stigmas in Troilus and Criseyde Natalie Chambers Faculty Mentor: Chris Palmer .....	44
Yeats, Hanrahan, and Something In-Between Tracey Cordle Faculty Mentor: Jane Barnette, John Gentile.....	45
An Escape from Reality, or the Reality of Escape? Chris Glosson Faculty Mentor: Linda Stewart.....	46
<i>English Education</i> .....	47
Exploring Students' Affinity Spaces to (Re)invent the English Classroom Derek Wright Faculty Mentor: Ryan Rish .....	47
<i>Geographic Information Science</i> .....	48
The Reconstruction of Tree Species Composition of Presettlement Forests Using GIS Feature Extraction of Historic Land Survey Plats William Gavin Faculty Mentor: Wayne Van Horne .....	48
<i>Geography</i> .....	49
Student Engagement in Campus Environmental Activism Michelle Allen Faculty Mentor: Lynn Patterson .....	49
Greening Economic Development in Georgia? Nick Davenport Faculty Mentor: Lynn Patterson .....	50
Sap flow for Select Tree Species in a Forest Patch at Kennesaw State University, GA Anthony Starks, Muhammad Mughal Faculty Mentor: Paula Jackson, Mario Giraldo .....	51
<i>History</i> .....	52
Creative Spaces Ryan Gibson Faculty Mentor: Donna Merrell .....	52
Cave Spring Oral History Project Sharifa Potter Faculty Mentor: Julia Brock.....	53
<i>International Affairs</i> .....	54
Beyond Secession: Examining the Full Spectrum of Ethnic Autonomy Demands Jason Gress Faculty Mentor: Tavishi Bhasin .....	54

Do the Right Thing: The Impact of INGO Legitimacy Standards on Stakeholder Input in INGO Activities Max Harris Faculty Mentor: Christopher Pallas.....	55
The State of the Iron Lady: Female Prime Ministers and their Socio-Military Policies, 1960-2010 Plamen Mavrov Faculty Mentor: Amir Azarvan .....	56
We Fight, Therefore We Are: A Twofold Analysis of Menachem Begin, the Patriarchal Pedagogue of Modern Terrorism Plamen Mavrov Faculty Mentor: John Moran .....	57
Promising Days in Ghana: Policy Recommendations to Address Ghana's Burgeoning Petroleum Sector Sumi Moon, Plamen Mavrov, Justin Rivard Faculty Mentor: Nurudeen Akinyemi.....	58
<i>Modern Language and Culture</i> .....	59
The Theme of Poverty in "La siesta del martes" by García Márquez and "Paso del Norte" by Juan Rulfo Hector Gutiérrez Faculty Mentor: June Laval .....	59
Masacres y mentiras en dos obras hispanoamericanas Scott Lee Faculty Mentor: June Laval .....	60
Summaries of German Studies Research: Three Senior Seminar Projects Caleb Russo, Eric Naugle, Cherlee Rohling Faculty Mentor: Sabine Smith.....	61
The "Cacique" As Protagonist in Three Latin American Short Stories Cynthia Tatis Faculty Mentor: June Laval .....	62
Miracles and Hypocrisy in "Talpa" and "Anacleto Morones" by Juan Rulfo Jessica Vaquera Faculty Mentor: June Laval .....	63
<i>Psychology</i> .....	64
Exercise Behaviors and College Students: Locus of Control, Planning, and Participation in Fitness Katherine Arce Faculty Mentor: Nicole Martin.....	64
Clarifying the Relationship between Stress and Decision Making Kelley Campbell, Elizabeth Williams, Karen Maddox, James Turner, Melony Parkhurst Faculty Mentor: Adrienne Williamson .....	65
Cross-Gender Friendships: Can Men & Women Just be Friends? Brittany Edwards, Alyssa Varhol, Jennifer Brooks Faculty Mentor: Corinne McNamara .....	66
Relationship Closeness and Blame Taking: How Good of a Friend Are You? Fielding Etheridge, Jennifer Brooks Faculty Mentor: Jennifer Willard .....	67
Undergraduate Research Experiences and Critical Thinking in First-Year Students Brian Ginburg Faculty Mentor: Amy Buddie .....	68
Short and Long-Term Benefits of a Circus Arts Therapy Program Tommy Gonter, Bria Cantrell, Whitney Warren Faculty Mentor: Lauren Tagliatela .....	69
An Evaluative Reflection of a Global Engagement Project for Learning Community Students Madison Hanscom, Justin Hoenstine, Rebecca Powers Faculty Mentor: Gail Scott .....	70



Sociosexuality, Susceptibility to Rape Myths, and Perceived Aggression Regarding Rape Madison Hanscom, Helen Spence, Ashley Sellers Faculty Mentor: Gail Scott .....	71
Faculty Barriers for Supervising Undergraduate Researchers: The Perceptions of Non-Mentors Scarlet Hernandez, Mary Scannavino, Stephen Ajetomobi Faculty Mentor: Amy Buddie .....	72
Attitudes Toward Repeated Unwanted Contact Alexandra Knight, Alyssa Varhol, Samantha Rowell Faculty Mentor: Corinne McNamara .....	73
Affect Specificity of Positively- and Negatively-Valenced Emotions in Infancy Lindey Maza, Savannah McGrath, Amber Phelps Faculty Mentor: Nicole Martin.....	74
Effects of Mentoring on Self-Concept in Adults Jennifer Smith Faculty Mentor: Gail Scott .....	75
Cultural Differences in Self-Concept Between Orphaned Adolescents in Kenya and Lower Socioeconomic Status Adolescents in the U.S. Kizmat Tention Faculty Mentor: Gail Scott .....	76
AID Atlanta: Qualitative vs. Quantitative Program Evaluation Benjamin Tippens Faculty Mentor: Christine Ziegler.....	77
Prevalence and Perception of Mental Health at KSU Ken Trickey, Courtney Collins, Darya Sipeykina Faculty Mentor: Daniel Rogers.....	78
Intro to Psychology: The Effects of Study Groups on Exam Scores and General Self Efficacy Scores Allison Venoy, Elizabeth Grissom, William Colombo Faculty Mentor: Gail Scott .....	79
The Relationship between Mood and Eating Styles in Response to Food Cues Melodi Zhan-Moodie, Lindey Maza Faculty Mentor: Sharon Pearcey.....	80
Food Craving Behaviors by Students Creg Zierler Faculty Mentor: Lauren Tagliatalata .....	81
College of Science and Mathematics .....	82
<i>Biochemistry</i> .....	82
Self-Focusing and Laser-Induced Ionization Effects in the Propagation of Intense Ultrashort Laser-Pulses through Dielectrics Jiexi Liao Faculty Mentor: Jeremy Gulley .....	82
ABCB1 Expression in Adrenocortical Cells is Uniquely Regulated Compared to Other Cell Types Christopher Raymond Faculty Mentor: Jennifer Powers .....	83
The Effect of Ar Tagging on the H5O2+ Protonated Water Cluster Andrew Shatz, Deborah Adedeji Faculty Mentor: Martina Kaledin .....	84
Ab Initio Study of Uracil: An Introduction to Computational Chemistry Methods Andrew Shatz, Deborah Adedeji Faculty Mentor: Martina Kaledin .....	85
Similarity Networks Reveal Relationships Among Sequence, Function, and Structure Within the Cupin Superfamily of Proteins Richard Uberto Faculty Mentor: Ellen Moomaw .....	86

<i>Biology</i> .....	87
Delineation of Genetic Variation in Wood Frogs ( <i>Lithobates sylvaticus</i> ) near a Northern Edge of Distribution Lucianna Araujo Faculty Mentor: Thomas McElroy .....	87
Building an Interactome: Identifying Novel Akirin-Interacting Factors Aayushi Bhagwanji, Meghan Troutt, Shelby Johnston Faculty Mentor: Scott Nowak .....	88
Survival Response to <i>Echis Carinatus</i> Venom in Human Umbilical Vein Endothelial Cells Veronica Garbar, Chelsea Beard, Taniesha Smith Faculty Mentor: Eric Albrecht .....	89
Comparison of Nitrogen Transformation Rates in Vegetated and Un-Vegetated Marine Sediments of St. Joseph Bay, FL Daniel Hoffman Faculty Mentor: Troy Mutchler .....	90
Characterization of Gene Expression in Stem Cell Derived Neuroblasts Christina Homer, Mohamed Zaidi, Katie Bales Faculty Mentor: Martin Hudson .....	91
Understanding the Role of EphA7 in Neuroblast Cell Division Amelia King Faculty Mentor: Martin Hudson .....	92
Modeling Dorsal Midbrain Neurogenesis In Vitro Colin King, Teresa Smith Faculty Mentor: Martin Hudson .....	93
Toxic Effects of Ionic Liquids on Wetland and Agricultural Plant Growth Johannah Silvius, Shavon Falcon, Jessica Wilson Faculty Mentor: Heather Sutton .....	94
Characterization of Expression Profile of the CER1 Gene and Two Regulatory Elements in Human Mesenchymal Progenitor Cells Jacob Sloan Faculty Mentor: Xueya Hauge .....	95
Characterization of Nascent Proteome in Ischemic-Tolerant Mice Brain Using High Throughput Mass Spectrometry Technology Ezigbobiara Umejiego Faculty Mentor: Melanie Griffin, An Zhou, Fang Bian, Tao Yang .....	96
<i>Chemistry</i> .....	97
An Efficient Way of Analyzing <i>Hoodia Gordonii</i> by High Performance Liquid Chromatography Daniel E. Bailey, Anthony Robert Haney Faculty Mentor: Huggins Z. Msimanga .....	97
How Two Groups Brought Two Polymers Together: "Click" Reactions Using a Recently Invented Linker Matthew Booher Faculty Mentor: Gregory Gabriel .....	98
Discerning Dextromethorphan from Opiates using FTIR and PCA Ariell Samantha Durden, Dechino Kincaid Deangel Duke Faculty Mentor: Huggins Z. Msimanga .....	99
Long-Range Effects in the Reactivity of Oligopeptides Chelsea Harrod, Jordan Bauer Faculty Mentor: John Haseltine .....	100
Synthesis of Lipid-capped Bimetallic Nanoparticles as SERS Substrate James Law, Christina Megedyuk Faculty Mentor: Bharat Baruah .....	101
Toward the Synthesis of Novel Bi- and Tridentate Carbenes and Their Transition Metal Complexes Zachary McCarty Faculty Mentor: Daniela Tapu .....	102

The Effects of Substituents on Benzimidazolium Salts using Electrochemical Analysis Zachary R Mccarty, Dale Eric Miles Faculty Mentor: Huggins Z. Msimanga, Daniela Tapu.....	103
Isolation and Characterization of Salvinorin A from <i>Salvia divinorum</i> by use of GC-MS, FTIR, and NMR Quinton James Meisner, Ivana Elisabeth Turner Faculty Mentor: Huggins Z. Msimanga .....	104
Explorations in the Chemistry of alpha-Acylphosphonates and alpha-Hydroxyphosphonates Joshua Parr, Robert Evans, Houman Khosrownia Faculty Mentor: Christopher W. Alexander .....	105
Determination of Multiple Metallic Species from a Single Sample Multi-Vitamin Using Inductively Coupled Plasma Atomic Emission Spectroscopy Joshua Ray Parr, Steven Mathew Walschot Faculty Mentor: Huggins Z. Msimanga .....	106
Water Soluble N-Confused Tetraphenylporphyrin Pooya Salehi Faculty Mentor: Janet Shaw.....	107
Water Soluble N-Confused Porphyrin Alex Stovall, Michelle Halladay Faculty Mentor: Janet Shaw.....	108
Multivariate Analysis Of Dry Powder Mixtures Of Acetylsalicylic Acid And Salicylic Acid Using Ftir-Atr And Microsoft Excel Craig Swanson, Elizabeth Heilig Faculty Mentor: Marina Koether .....	109
Do Poppy Seeds used as Food Additives Contain Opiates? Ashley Elizabeth Watson, Shafaq Rizwan Faculty Mentor: Huggins Z. Msimanga .....	110
<i>Mathematics</i> .....	111
Mathematical Models of Infectious Diseases Morgan Atterberry Faculty Mentor: Ana-Maria Croicu.....	111
Nim: Perfect Play and Lucky Opponents Min Kim Faculty Mentor: Joe DeMaio.....	112
Total Domination on the Triangular Honeycomb Chessboard Taylor Kindred Faculty Mentor: Joe DeMaio.....	113
The Coupon Collector Problem Michael M Thomas Faculty Mentor: Anda Gadidov .....	114
College of the Arts .....	115
<i>Art</i> .....	115
Technology Enhances Learning of Typography: Interactive eBook Daniela Dewendt, Emily Seed, Greg Thye Faculty Mentor: Kristine Hwang .....	115
Your Typeface Based on Your Personality Debbie Hampe, Selina Walker Faculty Mentor: Kristine Hwang .....	116
<i>Art History</i> .....	117
Hybridization and Nabataean Identity in the Khazneh Facade at Petra Lauren Bearden Faculty Mentor: Kristen Seaman.....	117

<i>Music Performance</i> .....	118
In Other Words, I Am Three": Analyzing The Black Saint and the Sinner Lady as an Extension of Mingus' Psyche Zachary Evans Faculty Mentor: Edward Eanes .....	118
The Uniqueness of Felix Mendelssohn's Life Joshua Martin Faculty Mentor: Edward Eanes .....	119
<i>Theatre and Performance Studies</i> .....	120
Shakespeare's Objectives Meagan Dilworth, Zachary Bromberg Faculty Mentor: Jane Barnette .....	120
A Work of Art Anterior Leverett Faculty Mentor: Margaret Baldwin, Karen Robinson, Jamie Bullins .....	121
Creating Dramaturgical Lobby Displays: CABARET & BUS STOP Houston McArthur, Jaime Melvin Faculty Mentor: Jane Barnette, Dean Adams, Harrison Long .....	122
University College .....	123
<i>First Year Experience Programs (non-degree)</i> .....	123
Differences of Opinion Concerning Bioethics among Kennesaw State University Undergraduates Danielle Ereddia, Melissa Kramschuster, Leslie Brown Faculty Mentor: Amy Buddie, Ken Hill, Phillip Poskus .....	123
College Students' Attitudes Toward Economic Integration James Hamill, Timothy Rucker Faculty Mentor: Amy Buddie, Ken Hill, Phillip Poskus .....	124
College Students' Attitudes Toward Population Growth and Migration Heather Jumper, Lea Addington, Kymberly Whitehall Faculty Mentor: Amy Buddie, Ken Hill, Phillip Poskus .....	125
College Students' Use of Information Technology Rachel Martini, Sydney Green, Jasmine Gipson Faculty Mentor: Amy Buddie, Ken Hill, Phillip Poskus .....	126
Clean Energy: How Knowledgeable are Students? Shannon O'Dell, Claire Bohrer, Sara Knapp Faculty Mentor: Amy Buddie, Ken Hill, Phillip Poskus .....	127
Governance in a Globalized World Liza Stepat, Juergie Landstrom, Christen Barnes Faculty Mentor: Amy Buddie, Ken Hill, Phillip Poskus .....	128
<i>Interdisciplinary Studies</i> .....	129
Primer Design for Population Genetics Studies on Beaked Dodder (Cuscuta Rostrata) Gaius Augustus Faculty Mentor: Joel McNeal .....	129
Wellstar College of Health and Human Services .....	130
<i>Human Services</i> .....	130
Nonprofit Website Research: An Applied Research Project for the Jane Fonda Center Shenell Ramos Faculty Mentor: Jennifer Wade-Berg .....	130
Retirees as a Donor Base: An Applied Research Project for the KSU Foundation's Retirees Association Anna Webb Faculty Mentor: Jennifer Wade-Berg .....	131

<b>Poster Placement Assignment</b> .....	<b>132</b>
<b>Oral Presentation Schedule</b> .....	<b>140</b>
Convocation Center, Room 1054.....	140
Convocation Center, Room 1055.....	141
Convocation Center, Room 2008.....	142
Convocation Center, Room 2015.....	143
<b>Appendix</b> .....	<b>145</b>
Acknowledgements .....	146
Index of Student Researchers .....	147
Index of Faculty Mentors .....	150

UNDERGRADUATE  
RESEARCH/CREATIVE ACTIVITY  
RECEPTION HONOREES

## BAGWELL COLLEGE OF EDUCATION

### **Early Childhood Birth through Kindergarten**

*Teaching Creative Arts Using Children's Literature: Collage Technique using Hand-Painted Papers by Eric Carle*

Michelle Gergel

Faculty Mentor: Yanghee Kim

*Teaching Creative Arts Using Children's Literature: Water Color Techniques by Tomie Depaola Cayce Rogers*

Faculty Mentor: Yanghee Kim

*Teaching Creative Arts Using Children's Literature: Woodblock Printing Techniques and Using Pencils by Erin Stead*

Emily Williamson

Faculty Mentor: Yanghee Kim

### **Early Childhood Education**

*Fourth Graders Creating Scripts on Colonial Times: An Integrated Project Across the Curriculum Jennifer Elie\**

Faculty Mentor: Stacy Delacruz, Sohyun An

## COLES COLLEGE OF BUSINESS

### **Accounting**

*Examining Factors Affecting Consumer Usage of Mobile Marketing*

Amy Oyler

Faculty Mentor: Donald Amaroso

### **Information Systems**

*Extending Neuro-Information Systems to Neuro-Sales*

Ed Birt

Faculty Mentor: Adriane Randolph

*The Significance of "I" in Brain Computer Interfaces*

Lisa Sapp

Faculty Mentor: Adriane Randolph

*Perceptions of Faculty Mentors of Undergraduate Research*

Lisa Sapp, Shavon Trice

Faculty Mentor: Amy Buddie

## **Management**

*LOL KOREA*

Sangwook Ham, Jae Euk Yoo, Jasmine Wright

Faculty Mentor: Kristine Hwang, Yanghee Kim

## COLLEGE OF HUMANITIES AND SOCIAL SCIENCES

## **Anthropology**

*Finding the Path of Heroes: Creating Stories in a Fantasy Role Playing Setting*

Duncan Balinger\*

Faculty Mentor: Brandon Lundy

*Man or Mountain? Comparing Constructed and Geographic Defenses in Rajasthan India*

Duncan Balinger\*

Faculty Mentor: Teresa Raczek

*Children of the Uruguayan Diaspora: Negotiating Identities of the South in the North*

Paola Garcia

Faculty Mentor: Debarati Sen

*Defining Deafness: A Look at the American Sign Language Club at Kennesaw State University*

Mollie Gilstrap

Faculty Mentor: Brandon Lundy

*Environmental Assessment of Vineyard Mountain Trail, Allatoona Dam Army Corps of Engineers Land*

Olivia Pisano

Faculty Mentor: Wayne Van Horne

*Forensic Anthropology and Genetics: A Discussion of Variation and Holistic Approaches to the Medico-Legal Discipline*

Kelci Ragsdale

Faculty Mentor: Susan Kirkpatrick Smith



*Reciprocity of Informal Education in a Museum Setting*

Samantha Roberts\*

Faculty Mentor: Brandon Lundy

*Population Correlation: Archaeological Site Size in the Mewar Plain, India*

Caitlin Syfrett\*

Faculty Mentor: Teresa Raczek

*How mitochondrial DNA is used within Anthropology to Trace Human Migration Patterns and Detect Genetic Variation among Homo sapiens*

April Tolley

Faculty Mentor: Susan Kirkpatrick Smith

### **Communication**

*An Organizational Culture Analysis of the Consulate of Brazil*

Natalia Cabral

Faculty Mentor: Audrey Allison

### **English**

*Fourteenth Century Female Stigmas in Troilus and Criseyde*

Natalie Chambers

Faculty Mentor: Chris Palmer

*Yeats, Hanrahan, and Something In-Between*

Tracey Cordle

Faculty Mentor: Jane Barnette, John Gentile

*An Escape from Reality, or the Reality of Escape?*

Chris Glosson

Faculty Mentor: Linda Stewart

### **English Education**

*Exploring Students' Affinity Spaces to (Re)invent the English Classroom*

Derek Wright

Faculty Mentor: Ryan Rish

## **Geographic Information Sciences**

*The Reconstruction of Tree Species Composition of Presettlement Forests Using GIS Feature Extraction of Historic Land Survey Plats*

William Gavin

Faculty Mentor: Wayne Van Horne

## **Geography**

*Student Engagement in Campus Environmental Activism*

Michelle Allen

Faculty Mentor: Lynn Patterson

*Greening Economic Development in Georgia?*

Nick Davenport

Faculty Mentor: Lynn Patterson

*Sap flow for Select Tree Species in a Forest Patch at Kennesaw State University, GA*

Anthony Starks, Muhammad Mughal

Faculty Mentor: Paula Jackson, Mario Giraldo

## **History**

*Creative Spaces*

Ryan Gibson

Faculty Mentor: Donna Merrell

*Cave Spring Oral History Project*

Sharifa Potter

Faculty Mentor: Julia Brock

## **International Affairs**

*Beyond Secession: Examining the Full Spectrum of Ethnic Autonomy Demands*

Jason Gress

Faculty Mentor: Tavishi Bhasin

*Do the Right Thing: The Impact of INGO Legitimacy Standards on Stakeholder Input in INGO Activities*

Max Harris

Faculty Mentor: Christopher Pallas

*The State of the Iron Lady: Female Prime Ministers and their Socio-Military Policies, 1960-2010*

Plamen Mavrov

Faculty Mentor: Amir Azarvan

*We Fight, Therefore We Are: A Twofold Analysis of Menachem Begin, the Patriarchal Pedagogue of Modern Terrorism*

Plamen Mavrov

Faculty Mentor: John Moran

*Promising Days in Ghana: Policy Recommendations to Address Ghana's Burgeoning Petroleum Sector*

Sumi Moon, Plamen Mavrov, Justin Rivard

Faculty Mentor: Nurudeen Akinyemi

### **Modern Language and Culture**

*The Theme of Poverty in "La siesta del martes" by García Márquez and "Paso del Norte" by Juan Rulfo*

Hector Gutiérrez

Faculty Mentor: June Laval

*Masacres y mentiras en dos obras hispanoamericanas*

Scott Lee

Faculty Mentor: June Laval

*Summaries of German Studies Research: Three Senior Seminar Projects*

Caleb Russo, Eric Naugle, Cherlee Rohling

Faculty Mentor: Sabine Smith

*The "Cacique" As Protagonist in Three Latin American Short Stories*

Cynthia Tatis

Faculty Mentor: June Laval

*Miracles and Hypocrisy in "Talpa" and "Anacleto Morones" by Juan Rulfo*

Jessica Vaquera

Faculty Mentor: June Laval

### **Psychology**

*Exercise Behaviors and College Students: Locus of Control, Planning, and Participation in Fitness*

Katherine Arce

Faculty Mentor: Nicole Martin

*Stress and Cognition*

Ashley Boone, Amy Molina, Carol Redman, Anna Rosenhauer

Faculty Mentor: Adrienne Williamson

*Sexual Perpetration & Rape Empathy Among College Students: A Closer Look*

Jennifer Brooks\*, Katherine Penuela, Samantha Rowell\*

Faculty Mentor: Corinne McNamara

*Clarifying the Relationship between Stress and Decision Making*

Kelley Campbell\*, Elizabeth Williams\*, Karen Maddox\*, James Turner\*, Melony Parkhurst

Faculty Mentor: Adrienne Williamson

*Effect of Exposure to Aggression on Perceptions of Aggressive Behavior*

Juliana Dumas

Faculty Mentor

*Cross-Gender Friendships: Can Men & Women Just be Friends?*

Brittany Edwards\*, Alyssa Varhol\*, Jennifer Brooks\*

Faculty Mentor: Corinne McNamara

*Relationship Closeness and Blame Taking: How Good of a Friend Are You?*

Fielding Etheridge, Jennifer Brooks\*

Faculty Mentor: Jennifer Willard

*Undergraduate Research Experiences and Critical Thinking in First-Year Students*

Brian Ginburg\*

Faculty Mentor: Amy Buddie

*Short and Long-Term Benefits of a Circus Arts Therapy Program*

Tommy Gonter, Bria Cantrell, Whitney Warren

Faculty Mentor: Lauren Taglialatela

*An Evaluative Reflection of a Global Engagement Project for Learning Community Students*

Madison Hanscom\*, Justin Hoenstine, Rebecca Powers

Faculty Mentor: Gail Scott

*Sociosexuality, Susceptibility to Rape Myths, and Perceived Aggression Regarding Rape*

Madison Hanscom\*, Helen Spence, Ashley Sellers\*

Faculty Mentor: Gail Scott

*Faculty Barriers for Supervising Undergraduate Researchers: The Perceptions of Non-Mentors*

Scarlet Hernandez, Mary Scannavino, Stephen Ajetomobi

Faculty Mentor: Amy Buddie

*Attitudes Toward Repeated Unwanted Contact*

Alexandra Knight, Alyssa Varhol\*, Samantha Rowell\*

Faculty Mentor: Corinne McNamara

*Video Games & Their Influence on Rape Myth Acceptance*

Rachel LaPorta, Katherine Penuela, Sandi Masci

Faculty Mentor: Corinne McNamara

*Social Perceptions of Immigrants*

Kathy Martinez-Kautz

Faculty Mentor

*Perceptions of & Attitudes Towards Post-Traumatic Stress Disorder Among College Students*

Sandi Masci, Alexandra Knight, Brittany Edwards\*

Faculty Mentor: Corinne McNamara

*Perceptions of Psychological vs. Physical Abuse and Its Implications on Mental Health Outcomes*

Sandi Masci, Alexandra Knight, Brittany Edwards\*

Faculty Mentor: Corinne McNamara

*Affect Specificity of Positively- and Negatively-Valenced Emotions in Infancy*

Lindey Maza\*, Savannah McGrath\*, Amber Phelps

Faculty Mentor: Nicole Martin

*Effects of Mentoring on Self-Concept in Adults*

Jennifer Smith

Faculty Mentor: Gail Scott

*Cultural Differences in Self-Concept Between Orphaned Adolescents in Kenya and Lower Socioeconomic Status Adolescents in the U.S.*

Kizmat Tention

Faculty Mentor: Gail Scott

*AID Atlanta: Qualitative vs. Quantitative Program Evaluation*

Benjamin Tippens

Faculty Mentor: Christine Ziegler

*Prevalence and Perception of Mental Health at KSU*  
Ken Trickey, Courtney Collins\*, Darya Sipeykina  
Faculty Mentor: Daniel Rogers

*Examination of Individual Differences in Stress-Related Expression of Rigidity in Problem Solving*  
James Turner\*, Karen Maddox\*, Elizabeth Williams\*, Kelley Campbell\*, Melony Parkhurst  
Faculty Mentor: Adrienne Williamson

*Effects of Subtle Victim-Blaming Language on Perceptions and Empathy*  
Alyssa Varhol\*, Rachel LaPorta, Brittany Edwards\*  
Faculty Mentor: Corinne McNamara

*Intro to Psychology: The Effects of Study Groups on Exam Scores and General Self Efficacy Scores*  
Allison Venoy, Elizabeth Grissom, William Colombo  
Faculty Mentor: Gail Scott

*The Relationship between Mood and Eating Styles in Response to Food Cues*  
Melodi Zhan-Moodie, Lindey Maza\*  
Faculty Mentor: Sharon Pearcey

*Food Craving Behaviors by Students*  
Creg Zierler  
Faculty Mentor: Lauren Taglialatela

## COLLEGE OF SCIENCE AND MATHEMATICS

### **Biochemistry**

*Self-Focusing and Laser-Induced Ionization Effects in the Propagation of Intense Ultrashort Laser-Pulses through Dielectrics*

Jiexi Liao

Faculty Mentor: Jeremy Gulley

*ABCB1 Expression in Adrenocortical Cells is Uniquely Regulated Compared to Other Cell Types*

Christopher Raymond

Faculty Mentor: Jennifer Powers

*The Effect of Ar Tagging on the H<sub>5</sub>O<sub>2</sub><sup>+</sup> Protonated Water Cluster*

Andrew Shatz, Deborah Adedeji

Faculty Mentor: Martina Kaledin

*Ab Initio Study of Uracil: An Introduction to Computational Chemistry Methods*

Andrew Shatz, Deborah Adedeji

Faculty Mentor: Martina Kaledin

*Similarity Networks Reveal Relationships Among Sequence, Function, and Structure Within the Cupin Superfamily of Proteins*

Richard Uberto

Faculty Mentor: Ellen Moomaw

**Biology**

*Delineation of Genetic Variation in Wood Frogs (*Lithobates sylvaticus*) near a Northern Edge of Distribution*

Lucianna Araujo

Faculty Mentor: Thomas McElroy

*Building an Interactome: Identifying Novel Akirin-Interacting Factors*

Aayushi Bhagwanji\*, Meghan Troutt\*, Shelby Johnston\*

Faculty Mentor: Scott Nowak

*VirB-Dependent Regulation of the icsP Promoter of Shigella flexneri in an Ampicillin-Resistant lacZ Reporter Plasmid*

Brittani Brown

Faculty Mentor: Melanie Griffin, Helen Wing

*Long-range effects in the reactivity of tripeptide esters*

Sharonda Browne, Andrew Samson

Faculty Mentor: John Haseltine

*Long-Term Viability of Lyophilized Anaerobic Bacteria*

Andrew Carter

Faculty Mentor: Melanie Griffin, Karen Anderson

*Survival Response to Echis Carinatus Venom in Human Umbilical Vein Endothelial Cells*

Veronica Garbar\*, Chelsea Beard\*, Taniesha Smith

Faculty Mentor: Eric Albrecht

*Investigating Lrp regulation of Metabolic Genes in Pseudomonas aeruginosa*

Lisley Garcia, Leonard Amodio III

Faculty Mentor: Melanie Griffin

*Comparison of Nitrogen Transformation Rates in Vegetated and Un-Vegetated Marine Sediments of St. Joseph Bay, FL*

Daniel Hoffman

Faculty Mentor: Troy Mutchler

*Characterization of Gene Expression in Stem Cell Derived Neuroblasts*

Christina Homer\*, Mohamed Zaidi\*, Katie Bales

Faculty Mentor: Martin Hudson

*Understanding the Role of EphA7 in Neuroblast Cell Division*

Amelia King\*

Faculty Mentor: Martin Hudson

*Modeling Dorsal Midbrain Neurogenesis In Vitro*

Colin King\*, Teresa Smith

Faculty Mentor: Martin Hudson

*Toxic Effects of Ionic Liquids on Wetland and Agricultural Plant Growth*

Johannah Silvius, Shavon Falcon, Jessica Wilson

Faculty Mentor: Heather Sutton

*Characterization of Expression Profile of the CER1 Gene and Two Regulatory Elements in Human Mesenchymal Progenitor Cells*

Jacob Sloan\*

Faculty Mentor: Xueya Hauge

*Characterization of Nascent Proteome in Ischemic-Tolerant Mice Brain Using High Throughput Mass Spectrometry Technology*

Ezigbobiara Umejiego

Faculty Mentor: Melanie Griffin, An Zhou, Fang Bian, Tao Yang

## **Chemistry**

*An Efficient Way of Analyzing Hoodia Gordonii by High Performance Liquid Chromatography*

Daniel E. Bailey, Anthony Robert Haney

Faculty Mentor: Huggins Z. Msimanga

*How Two Groups Brought Two Polymers Together: "Click" Reactions Using a Recently Invented Linker*

Matthew Booher

Faculty Mentor: Gregory Gabriel



*Discerning Dextromethorphan from Opiates using FTIR and PCA*  
Ariell Samantha Durden, Dechino Kincaid Deangel Duke  
Faculty Mentor: Huggins Z. Msimanga

*Long-Range Effects in the Reactivity of Oligopeptides*  
Chelsea Harrod, Jordan Bauer  
Faculty Mentor: John Haseltine

*Synthesis of Lipid-capped Bimetallic Nanoparticles as SERS Substrate*  
James Law, Christina Megedyuk  
Faculty Mentor: Bharat Baruah

*Toward the Synthesis of Novel Bi- and Tridentate Carbenes and Their Transition Metal Complexes*  
Zachary McCarty  
Faculty Mentor: Daniela Tapu

*The Effects of Substituents on Benzimidazolium Salts using Electrochemical Analysis*  
Zachary McCarty, Dale Eric Miles  
Faculty Mentor: Huggins Z. Msimanga, Daniela Tapu

*Isolation and Characterization of Salvinorin A from Salvia divinorum by use of GC-MS, FTIR, and NMR*  
Quinton James Meisner, Ivana Elizabeth Turner  
Faculty Mentor: Huggins Z. Msimanga

*Explorations in the Chemistry of alpha-Acylphosphonates and alpha-Hydroxyphosphonates*  
Joshua Parr, Robert Evans, Houman Khosrownia  
Faculty Mentor: Christopher W. Alexander

*Determination of Multiple Metallic Species from a Single Sample Multi-Vitamin Using Inductively Coupled Plasma Atomic Emission Spectroscopy*  
Joshua Parr, Steven Matthew Walschot  
Faculty Mentor: Huggins Z. Msimanga

*Water Soluble N-Confused Tetraphenylporphyrin*  
Pooya Salehi  
Faculty Mentor: Janet Shaw

*Water Soluble N-Confused Porphyrin*  
Alex Stovall, Michelle Halladay  
Faculty Mentor: Janet Shaw

*Structural Studies of Metalloproteases*

Otoe Sugahara, Evelina Pierce

Faculty Mentor: John Haseltine

*Multivariate Analysis Of Dry Powder Mixtures Of Acetylsalicylic Acid And Salicylic Acid Using Ftir-Atr And Microsoft Excel*

Craig Swanson, Elizabeth Heilig

Faculty Mentor: Marina Koether

*Do Poppy Seeds used as Food Additives Contain Opiates?*

Ashley Elizabeth Watson, Shafaq Rizwan

Faculty Mentor: Huggins Z. Msimanga

**Computer Science**

*Facebrain: A Brain-Computer Interface for Facebook*

Ben Warren

Faculty Mentor: Adriane Randolph

**Mathematics**

*Mathematical Models of Infectious Diseases*

Morgan Atterberry

Faculty Mentor: Ana-Maria Croicu

*Nim: Perfect Play and Lucky Opponents*

Min Kim

Faculty Mentor: Joe DeMaio

*Total Domination on the Triangular Honeycomb Chessboard*

Taylor Kindred\*

Faculty Mentor: Joe DeMaio

*The Coupon Collector Problem*

Michael M. Thomas

Faculty Mentor: Anda Gadidov

# COLLEGE OF THE ARTS

## **Art**

*Technology Enhances Learning of Typography: Interactive eBook*

Daniela Dewendt, Emily Seed\*, Greg Thye

Faculty Mentor: Kristine Hwang

*Your Typeface Based on Your Personality*

Debbie Hampe, Selina Walker

Faculty Mentor: Kristine Hwang

## **Art History**

*Hybridization and Nabataean Identity in the Khazneh Facade at Petra*

Lauren Bearden\*

Faculty Mentor: Kristen Seaman

## **Music Performance**

*"In Other Words, I Am Three": Analyzing The Black Saint and the Sinner Lady as an Extension of Mingus' Psyche*

Zachary Evans

Faculty Mentor: Edward Eanes

*The Uniqueness of Felix Mendelssohn's Life*

Joshua Martin

Faculty Mentor: Edward Eanes

## **Theatre and Performance Studies**

*Death, Blood, and Gods*

Minoo Bassery, Jeff Lester, Reanna Osler

Faculty Mentor: Jane Barnette

*Shakespeare's Objectives*

Meagan Dilworth, Zachary Bromberg

Faculty Mentor: Jane Barnette

*Elizabethan Sexuality*

George Harris, Sarah Schad

Faculty Mentor: Jane Barnette

*Greek Theatre Practice*

Zachary Lawson, Jackie Pace, Grace Burke

Faculty Mentor: Jane Barnette

*A Work of Art*

Anterior Leverett

Faculty Mentor: Margaret Baldwin, Karen Robinson, Jamie Bullins

*Creating Dramaturgical Lobby Displays: CABARET & BUS STOP*

Houston McArthur, Jaime Melvin

Faculty Mentor: Jane Barnette, Dean Adams, Harrison Long

*Tertullian's Tactics*

Kristen Smith, Blaire Hillman

Faculty Mentor: Jane Barnette

*The Power of Words*

Jazmine Wallace, Dawn Williams, Brittany Dingle

Faculty Mentor: Jane Barnette

## UNIVERSITY COLLEGE

### **First Year Experience Programs**

*Differences of Opinion Concerning Bioethics among Kennesaw State University Undergraduates*

Danielle Ereddia, Melissa Kramschuster, Leslie Brown

Faculty Mentor: Amy Buddie, Ken Hill, Phillip Poskus

*College Students' Attitudes Toward Economic Integration*

James Hamill, Timothy Rucker

Faculty Mentor: Amy Buddie, Ken Hill, Phillip Poskus

*College Students' Attitudes Toward Population Growth and Migration*

Heather Jumper, Lea Addington, Kymberly Whitehall

Faculty Mentor: Amy Buddie, Ken Hill, Phillip Poskus

*College Students' Use of Information Technology*

Rachel Martini, Sydney Green, Jasmine Gipson

Faculty Mentor: Amy Buddie, Ken Hill, Phillip Poskus

*Clean Energy: How Knowledgeable are Students?*

Shannon O'Dell, Claire Bohrer, Sara Knapp

Faculty Mentor: Amy Buddie, Ken Hill, Phillip Poskus

*Governance in a Globalized World*

Liza Stepat, Juergie Landstrom, Christen Barnes

Faculty Mentor: Amy Buddie, Ken Hill, Phillip Poskus

**Interdisciplinary Studies**

*Primer Design for Population Genetics Studies on Beaked Dodder (Cuscuta Rostrata)*

Gaius Augustus\*

Faculty Mentor: Joel McNeal

## WELLSTAR COLLEGE OF HEALTH AND HUMAN SERVICES

**Human Services**

*Nonprofit Website Research: An Applied Research Project for the Jane Fonda Center*

Shenell Ramos

Faculty Mentor: Jennifer Wade-Berg

*Retirees as a Donor Base: An Applied Research Project for the KSU Foundation's Retirees Association*

Anna Webb

Faculty Mentor: Jennifer Wade-Berg

\* denotes an individual who received funding from CETL in 2011 - 2013.

# PRESENTATION ABSTRACTS

## Teaching Creative Arts Using Children's Literature: Woodblock Printing Techniques and Using Pencils by Erin Stead

Emily Williamson

Faculty Mentor: Yanghee Kim

Bagwell College of Education

Early Childhood Birth to Kindergarten

Erin Stead is the Caldecott Medal winning illustrator of "A Sick Day for Amos McGee." She also illustrated "And Then It's Spring" by Julie Fogliano and "Bear Has a Story to Tell" by Philip C. Stead. She uses printmaking method and technique using oil ink. Erin creates her illustrations by hand using woodblock printing techniques and pencil. When she is all finished with the block carving, she mixes the ink and applies it to the block with a Brayer. Then she waits for the print to dry for a day or so, and then she draws on top of the print with a pencil. An activity that children can use with this technique is using foam instead of wood. Erin Stead uses wood carving tools which would not be appropriate for young children. Therefore, for classroom activities, children use pieces of foam and a pen to create their images.

Woodblock Painting procedures for young children are (a) Gather foam trays; (b) Cut the trays into rectangles; (c) Use the tip of a pen to etch in your design to make whatever you want; (d) Try to fill up your entire shape. Use different lines and you can even poke a few holes if you have the space; (e) When your design is finished, then paint over it with any color of acrylic paint using a soft foam brush or a roller brush; (f) After you've covered the foam with paint, turn your stamp over and press firmly to your paper. Gently smooth over the entire shape; and (g) Carefully pick the stamp off of the paper. Children will see their print underneath!

## **Fourth Graders Creating Scripts on Colonial Times: An Integrated Project Across the Curriculum**

Jennifer Elie

Faculty Mentor: Stacy Delacruz, Sohyun An

Bagwell College of Education

Early Childhood Education

This project describes how a fourth grade class learned concepts related to the social studies standards of Colonial Times by creating and presenting plays about that time period and using digital technology along the way. The teachers sought out to learn how fine arts, social studies, and language arts could be integrated to enhance students' understandings of Colonial Times. Data was gathered through fourth grade digital video journals, iPad guided reading lesson reflections, the written scripts that students created, and teacher interviews. Preliminary findings show that the students increased their content knowledge and applied it as they wrote and revised their scripts. The study also reveals that the technology embedded into the project motivated the students, allowed them to critically reflect on the writing process and their content knowledge, and aided the teacher in providing rich and engaging lessons.



# The Significance of “I” in Brain Computer Interfaces

Lisa Sapp

Faculty Mentor: Adriane Randolph

Coles College of Business

Information Systems

The brain-computer interface (BCI) is defined as an alignment of technology with the human neurological system. A core focus of this field of study is the implementation of systems with the ability to successfully augment or restore lost physical capability of the user. To the novice ear, the idea of intertwining human and machine may sound like science fiction when indeed this notion is based in scientific reality. There are some prominent institutions, such as the United States research segment known as DARPA (Defense Research Projects Agency), acutely interested in the advancement of BCI research as a possible precursor path to true artificial intelligence. Yet, to achieve true artificial intelligence, the initiators of human emotion have to be fully understood. Understanding the essence of the human individual and human interaction are vital components in the advancement of BCI design. Thus, the impetus of successful BCI research, design, and implementation lies not in the structured approach of mechanical design but in the ability to incorporate intense individual interactions that ignite interests, illuminate the importance in impassioned ideas, and impart the imperative of interdisciplinary immersion.

# Perceptions of Faculty Mentors of Undergraduate Research

Lisa Sapp

Shavon Trice

Faculty Mentor: Amy Buddie

Coles College of Business

Information Systems

Research suggests that there are numerous benefits to both students and mentors as a result of engaging in undergraduate research activities (e.g., Hunter et al., 2006). Student benefits include the ability to sharpen critical thinking skills, become more confident in the chosen field of study, and strengthen communication skills. Faculty mentors get the opportunity to promote positive learning experiences, gain assistance with their current research endeavors, and gain the opportunity to be recognized for their contributions to their chosen field of study. In addition, both students and faculty mentors gain an increased sense of satisfaction of their experiences in the educational process. There are numerous studies regarding benefits for students; however, research on the faculty mentors is lacking. Much of the previous research on faculty perceptions of undergraduate research benefits has lacked quantifiable supporting data. To address this research gap, we created a survey regarding the experiences of faculty mentors at KSU. In this survey, we examined faculty members' experiences mentoring undergraduate researchers during the past year (e.g., number of projects, amount of time spent), benefits, reasons students participate in research, etc. The entire survey took approximately 10 minutes to complete. As a result of this research effort, we hope to provide a quantifiable representation of faculty perceptions of undergraduate research. This is an important foundational step that could help foster future dialogue related to improvements, enhancements and potentially an increase in the availability of undergraduate research opportunities.

## LOL KOREA

Sangwook Ham

Jae Euk Yoo

Jasmine Wright

Faculty Mentor: Kristine Hwang, Yanghee Kim

Coles College of Business

Management

In 2012, Korea Economic Daily found that as many as 1.2 million foreigners came to Korea for tourism. This figure is a 51.9% increase compared to the statistics of the past five years and is the highest of the OECD major countries. This figure is also approximately five times higher compared to the average growth rate in the OECD top twenty-five countries. If this trend continues, in 2020, it is expected that as many as two million tourists will visit Korea. However, currently, there is no way for foreign tourists to travel in their own language. Therefore, LOL KOREA aims to remedy this by providing an integrated service in English for foreigners that can be easily accessed online and on their smart phones.

LOL KOREA will provide several services to our users. First, we will detail the necessary information needed for traveling to Korea, like visa types and processing, what key items to bring, Korea's climate and daily life amongst other topics. Secondly, we will provide tourists with up-to-date information about activities to enjoy during their stay, such as where to stay and eat, how to use the public transportation, what events and festivals to attend, which tourist sites to visit, etc. However, our users will also submit their own information about their experiences with these topics through our community forum, enabling travelers to connect and communicate with one another easily and actively.

One of LOL KOREA's greatest strengths, in fact, is that our users can share their information directly. Unlike commercial websites that only post vague praises of advertised pages, our website and smart phone application will be supported by our users, allowing them to directly communicate with their peers about their experiences throughout Korea. This freedom and power will ultimately give them influence on the various vendors in Korea, leading to better service and treatment. Also, LOL KOREA distinguishes itself from its competitors by providing on-the-go smart phone application services. In this way, LOL KOREA will be a comprehensive travel-mate accessible anywhere, anytime.

# Finding the Path of Heroes: Creating Stories in a Fantasy Role Playing Setting

Duncan Balinger

Faculty Mentor: Brandon Lundy

College of Humanities and Social Sciences

Anthropology

For the past few decades, men and women have been gathering around a table to do battle with forces from a different realm that seem more sinister, yet more adventurous than the one they live in. Fantasy role playing games can offer an escape from the drudgeries of the modern world; not only that, they also provide an outlet for the creativity of the players. Through storytelling and narration they can cooperatively build a new world full of magic and heroism. How are these collective creative processes invoked to develop fantasy worlds? And in what way(s) is the cooperative form of storytelling of fantasy role playing games affected or influenced by the players involved? Through participant observation and semi-structured interviews, this study demonstrates how these creative processes are affected by both individual creative expression and cultural material. These tabletop games may also represent a modern form of oral tradition that are contextually fashioned and refashioned in an iterative storytelling process.

# Man or Mountain? Comparing Constructed and Geographic Defenses in Rajasthan India

Duncan Balinger

Faculty Mentor: Teresa Raczek

College of Humanities and Social Sciences

Anthropology

Medieval (Middle) Period fortresses and city walls in Rajasthan, India defended the citizens and their kings within, and many still remain standing today. Drawing from recent exploration and observation of gateways, walls, waterways, construction methods, and natural barriers that I observed this last winter while I was studying in India, I continue that research in this paper.

This study compares the geographical and constructed defenses of these fortifications. My research focuses on the fortresses of Kumbhalgarh, Chittorgarh and the city of Udaipur to evaluate how they were defended and how they were breached. Chittorgarh was a fort of particular importance to the "Rajput" rulers of Rajasthan. During much of its occupation it was considered the capital of Rajasthan, the land of many princes. Compared to Chittorgarh, Kumbhalgarh seems like a lesser fort, as it never served as a capital. However, it is considered to be unbreachable in local legend. By determining the construction methods of these fortifications and studying the surrounding geography of the region, I am able to answer my main research question: What is more important when building fortifications, the construction materials and methods used or the terrain on which the fortification lies?

Literature review and personal observation assist me in this investigation into these great fortresses of India. This paper also seeks out universals in fortification construction by comparing how fortresses in India are built in comparison to other ones around the world. Finding these answers will help researchers find the many strategies that humanity has developed for defense on the battlefield. Also, by examining topographical maps and satellite photos of the area surrounding the fortifications I am analyzing how the geography was used to make the fortress defensible. This paper seeks to understand what makes human beings feel secure and what is truly defensible. In India I personally studied all the gateways surrounding Udaipur: Chand Pol, Amba Pol, Hathi Pol, Delhi Gate, Suraj Pol, Udai Pol, and Kishan Pol. I also examined Udaipur's outer gate and the Monsoon Palace outside the city. I personally walked through Chittorgarh and Kumbhalgarh, as well. I wrote down my observations about their construction methods and features about the surrounding geography. After viewing these fortifications in person, I see how not only how these structures fit into the landscape of Rajasthan, but into local myths and legends.

# Children of the Uruguayan Diaspora: Negotiating Identities of the South in the North

Paola Garcia

Faculty Mentor: Debarati Sen

College of Humanities and Social Sciences

Anthropology

Human migration creates spaces where new ideologies challenge existing ones as immigrants adapt to a new cultural environment, called the diaspora. When a child is born to this diaspora, those ideologies compete throughout socialization. Through auto-ethnographic methods, I explore ways in which a spectrum of identities are formed within the diaspora and its surroundings, and describe some aspects of contention between Uruguayan and North American cultures in early childhood socialization. With a focus on the Uruguayan community in Georgia, I reflect on my own experience of growing up in this diaspora and incorporate aspects of my son's current cultural socialization in a kindergarten classroom as he negotiates the pushes and pulls of the two communities he belongs to. I draw on participant observation of schooling practices and analysis of relevant educational material to shed light on the particular cultural encounters of Uruguayan diaspora, highly under-researched and who are generally placed in the "other" category of statistics that represent Latino or Hispanic groups in the United States. Drawing on relevant theoretical frames from anthropology and contemporary diaspora studies of understanding cultural identity formation in contemporary United States, I engage in an ongoing conversation about the need for multicultural spaces in the classroom and beyond to ameliorate some dialogical tensions that may be experienced in the diaspora.

# Defining Deafness: A Look at the American Sign Language Club at Kennesaw State University

Mollie Gilstrap

Faculty Mentor: Brandon Lundy

College of Humanities and Social Sciences

Anthropology

The purpose of this study was to understand how learning American Sign Language (ASL) influences a person's perceptions of deafness and the deaf community. According to studies done before, ASL is considered the foundation of deaf culture, and it serves as the dividing line between deafness being viewed as pathology or a linguistic cultural minority. To examine the impact that ASL can have on a person's opinion about deaf culture, this study focused on a specific ASL Club on Kennesaw State University's campus. This is the first-ever deaf-friendly club on this campus, so its presence and impact is groundbreaking for the University. Data was collected through observing the group meetings and ASL classes throughout a semester and through in-depth, semi-structured interviews with multiple members of the club (both deaf and hearing), including the two founder-leaders. The findings seem to reveal a positive relationship between understanding the scope of ASL and viewing deafness as a culture rather than a handicap. By introducing ASL classes into school curriculums, it might help alleviate the hearing community's patronizing attitude toward the deaf that is still present in our society, and open people up to a completely new meaning of the concept of language.

Keywords: ASL, Deaf, Deaf community, Deaf culture, KSU, Language and culture

# Environmental Assessment of Vineyard Mountain Trail, Allatoona Dam Army Corps of Engineers Land

Olivia Pisano

Faculty Mentor: Wayne Van Horne

College of Humanities and Social Sciences

Anthropology

In May 2012 initial data for this study was collected at Vineyard Mountain as a project for ANTH 4430: Environmental Anthropology, a course taught at Kennesaw State University. Vineyard Mountain is located adjacent to the Allatoona Dam in Bartow County on land regulated by the Army Corps of Engineers. A publicly accessible trail is maintained at the site and the land has been protected from development since the creation of the dam. Data was collected to inventory the flora of the site and to assess its ecological importance. In order to collect data, students in the course were divided into four teams, each of which studied a different site on Vineyard Mountain. The students collected information on the geology, ecology, and flora of their respective sites. This report provides an analysis of this data, identifying the ecological communities present at the site, their significance, and recommendations concerning land use. While not necessarily rare, these ecological communities are representative of some of the richly diverse ecosystems that exist in Georgia. It is recommended that this area continue to be reserved for light recreational use and educational purposes.



# **Forensic Anthropology and Genetics: A Discussion of Variation and Holistic Approaches to the Medico-Legal Discipline**

Kelci Ragsdale

Faculty Mentor: Susan Kirkpatrick Smith

College of Humanities and Social Sciences

Anthropology

This paper will cover the multiple facets of knowledge Forensic Anthropologists use in order to better ascertain all information from an investigation. Taking an holistic approach to the study of resources available and used by Forensic Anthropologists, this paper will attempt to provide a thorough overview at the degree to which this discipline incorporates the study of human variation as it pertains to identification and human idiosyncrasy. From genetic research to cultural studies of body modification, this paper will show that while highly specialized, Forensic Anthropology draws from many varied fields of study in order to maintain and increase its breadth of knowledge and ability to perform around the world.

# Reciprocity of Informal Education in a Museum Setting

Samantha Roberts

Faculty Mentor: Brandon Lundy

College of Humanities and Social Sciences

Anthropology

Research on museum education focuses almost entirely on museum patrons as learners. However, just as important is developing the knowledge base of the volunteers and educators who carry out the museum's educational mission. This project aimed to better understand the educational relationships between museum volunteers and educators, what benefits the volunteers and educators receive, and how they contribute to the museum's educational mission. The Georgia Science Museum was selected as an appropriate research site due to the large number of volunteers and the extensive use of its educators in school and museum programs. Through observation and semi-structured interviews, it was hypothesized that volunteers and educators receive benefits of personal growth, informal education, community feeling, and educational incentives. The volunteers and educators and their educational incentives positively contribute to the museum's educational mission. The benefits to the museum and the volunteers could be increased with more directive pedagogical leadership and greater consideration by the museum as to the wants, needs, and suggestions of volunteers and on-staff educators in return for their service. This study is important because it shows how museums can have a positive educational impact on people other than patrons, and that community relationships and the positive effects a museum can have can be enhanced.

# Population Correlation: Archaeological Site Size in the Mewar Plain, India

Caitlin Syfrett

Faculty Mentor: Teresa Raczek

College of Humanities and Social Sciences

Anthropology

There is a continuous debate among archaeologists about which methods and formulas should be used to determine the demographics of archaeological sites. Many archaeologists have attempted to develop formulas to estimate population based on site size, roofed floor area, total floor area, and several other specifications that can be determined from the archaeological record. Some have tried a cross-cultural approach in an attempt to find a universal formula, but not all cultures have the same types of habitation, be it multifamily or nuclear family, within a single household. Because of the distinctive family habitation styles within South Asia, however, the development of a regionally tailored formula based on archaeological and ethnographic documentation is necessary. This research aims to fill this need

I am determining and testing the relationship between site sizes, dwelling density, and population based upon the 1901 British Indian census data. I have chosen to use 1901 census data rather than the most recent data because it is less impacted by the recent population boom and modern construction methods. My archaeological sample includes ten Chalcolithic (c. 3000-1700 B.C.E.) sites: five sites from the Ahar Banas cultural complex on the Mewar plain in northwest India and five sites from the Indus river valley culture that spanned from Pakistan to Gujarat state in India. My modern sample consists of ten villages within the same relative areas as the archaeological sites. Drawing from the determined relationships between site size, dwelling density, and population from the modern sites, I am using the excavation data to determine an estimated population range for all of the archaeological sites.

Understanding population dynamics during the Chalcolithic time period is important because this is when people began forming the first villages in the Mewar Plain of Northwest India. Thus began the transition from mobile pastoralist groups to a fusion of agriculture and pastoralism (agro-pastoralism). During this same time period, the Indus River culture was also actively thriving in large cities with large public works and advanced architectural structures. Using the data and formulas developed, I compare the estimated populations of the Ahar Banas and Indus complexes to put them into context of one another during their contemporaneous primes.

# **How mitochondrial DNA is used within Anthropology to Trace Human Migration Patterns and Detect Genetic Variation among Homo sapiens**

April Tolley

Faculty Mentor: Susan Kirkpatrick Smith

College of Humanities and Social Sciences

Anthropology

This research explores how mitochondrial DNA is used within the field of anthropology to trace patterns of human migration and to detect genetic variation within the species *Homo sapiens*. Mitochondrial DNA is DNA found within the mitochondria of organisms, including humans, that is passed down through the mother to her offspring, and through the female offspring to their offspring, and so on. This research reviews what anthropologists have learned from studying mtDNA as well as the benefits of studying mtDNA and its value to anthropologists interested in human migration and genetic variation. Within anthropology, one of the reasons that mitochondrial DNA is studied is in order to trace human lineages into the past to determine the origins of humankind in both space and time. Thus far, mtDNA research supports the view that *Homo sapiens* originated in Africa around 200,000 years ago and migrated outward in the "Out of Africa" expansion. Using mtDNA to research this origin and subsequent population of the planet of humankind provides anthropologists with insight into pathways of migration and mutation rates that led to the variation seen today within the human species. This research explores some of the possible implications of migration routes within and out of Africa and the genetic variation seen among humans that resulted from these migrations. By examining modern human mtDNA from populations across the globe, anthropologists can trace past migration patterns, and thus reveal how or when certain variations within the human species occurred.

# **An Organizational Culture Analysis of the Consulate of Brazil**

Natalia Cabral

Faculty Mentor: Audrey Allison

College of Humanities and Social Sciences

Communication

Using an organizational ethnographic approach, this paper examines the organizational culture of the Consulate of Brazil through a field-based experience at the Consulate's metro Atlanta office. Schein's Model of Culture offers a 3-tiered conceptual framework to discuss organizational (a) behavior, practices, and artifacts, (b) values, and (c) basic assumptions. The paper also addresses the intercultural relationships between the Consulate of Brazil and its different cultural constituencies, using Hall and Hofstede's six cultural dimensions.

## Fourteenth Century Female Stigmas in Troilus and Criseyde

Natalie Chambers

Faculty Mentor: Chris Palmer

College of Humanities and Social Sciences

English

Geoffrey Chaucer's works often offered valuable insights into the social hierarchies in place during his epoch. His epic poem, *Troilus and Criseyde*, offered valuable insights into the social hierarchies in place for women during the fourteenth century. I, however, found a problem that motivated me to do exploratory research into this epic poem of Chaucer's. Criseyde is, traditionally, considered a fourteenth century heroine when, in reality, she is presented as nothing but an illusion and just another powerless female bent to the demands of a patriarchal society. Through examining Chaucer's rhetoric, an understanding of the sub textual meaning in his word choice representing Criseyde can be synthesized. The result of the research was that Geoffrey Chaucer was a prototypical male writer that stripped women of power. Criseyde, particularly, was exposed to the dominance of a patriarchal society, bent to fulfill the needs of the men in her life: Troilus and Pandarus. Contrary to traditional views, Criseyde is not the heroine of the epic poem but rather a woman stuck within the confines of a woman's place in society of Chaucer's epoch.

## **Yeats, Hanrahan, and Something In-Between**

Tracey Cordle

Faculty Mentor: Jane Barnette, John Gentile

College of Humanities and Social Sciences

English

Fascinated with life beyond and among the natural world, Irish poet and storyteller William Butler Yeats allowed Irish folklore, mysticism, and the occult to permeate his work. With a belief system seeped in duality, Yeats put his faith into elements of both Christianity and fairylore, viewing man's existence as division of the "alive" life and the "dead" life, and regarding the occult as mutually attractive and terrifying. In his *Stories of Red Hanrahan*, Yeats extended his dual perspective to include a third element: the liminal, or in-between. This thirdness is neither fully one nor the other, but a pendulum between the two.

This presentation will explore these ideas from the dramaturgical research for KSU's February production of *RED HANRAHAN* (adapted and co-directed by Dr. John Gentile), including the program note writing, the lobby display, website building, and the script development processes and products. Attendees will learn the specifics of this project as well as gaining insight into the complex and exciting world of dramaturgy.

## **An Escape from Reality, or the Reality of Escape?**

Chris Glosson

Faculty Mentor: Linda Stewart

College of Humanities and Social Sciences

English

This research-based presentation uses "Second Life" as a medium for explaining user-generated content that reflects a "resident's" desire for reality or the desire for escape by their imagining of their "in-world" surroundings. From amateur bloggers to professional academics, there is a dispute as to how the game is used in these terms. Some argue the game is a re-creation of real world landscapes, though others consider the landscape design to be an escapist's fantasy. This presenter suggests a third possibility put forth by one user: "You can escape through 'Second Life', but instead of just turning off from the real world, 'Second Life' users are just entering a different one." This presenter will illustrate how 'Second Life' landscapes that range from vampire dwellings to suburban neighborhoods not only blur the lines between reality and escapism, but also may cause escapism to become reality. This recursive effect has far-reaching implications for transforming individual and community cultures.



## Exploring Students' Affinity Spaces to (Re)invent the English Classroom

Derek Wright

Faculty Mentor: Ryan Rish

College of Humanities and Social Sciences

English Education

Dr. James Gee, Arizona State University, argues that affinity spaces are places where informal learning takes place. While this idea may seem simple in theory, it can often be difficult to move from the theoretical aspects of affinity spaces to its practical uses in the classroom. During the student teaching experience, the student teacher decided to research more in-depth about Dr. Gee's affinity space theory and the practical uses of the theory in the classroom. The goal for the research was to examine how 9th grade students would be motivated to explore the literacy events that happen outside of school and how this compares to learning that takes place inside of the classroom.

The research started by having Dr. Gee Skype into the classroom to speak with the students about affinity spaces and learning. Not only did this portal of learning initiate the discussion about affinity spaces, but it caused students to reflect on their own learning in avenues that they would not consider to be learning in. The students then created a multimodal presentation to discuss aspects of what makes their own affinity spaces. In addition to the project, the students thought about the idea of a community in the classroom by assisting other students in their affinity space creation through the use of helping logs.

This project was introduced to help the students gain a better understanding of how they learn both formally and informally in places that are outside of school. It allowed the students to consciously think about literacy events that frame their lives, and it let them consider where all learning takes place.

The research has been proposed to be presented as a panel to the National Council of Teachers of English in Boston, MA.

# **The Reconstruction of Tree Species Composition of Presettlement Forests Using GIS Feature Extraction of Historic Land Survey Plats**

William Gavin

Faculty Mentor: Wayne Van Horne

College of Humanities and Social Sciences

Geographic Information Sciences

Historic 1834 survey plats containing witness tree locations and species descriptions were converted to GIS data products using photo interpretation. The data was used to map and create an inventory of tree species composition of the presettlement forest of northern Bartow County, Georgia. The study area was selected in order to have an areal sample of the forest in the Great Appalachian Valley, an area where there is no extant old forest. The sample area also contains a unique ecological community, the Bartow County sagponds, and the data will be relevant for potential conservation management for this rare community. The quantitative and spatial data indicates that fire-resistant tree species adapted to xeric conditions were dominant in the landscape, resulting in a forest community typified by Post Oaks, Shortleaf Pines, and Scarlet Oaks.

## **Student Engagement in Campus Environmental Activism**

Michelle Allen

Faculty Mentor: Lynn Patterson

College of Humanities and Social Sciences

Geography

Much research has been done to assess individuals' motives for "acting green". However, most of this research focuses on green consumerism, not environmental activism. This study surrounds two environmental student networks: the Greenpeace Student Network and the Sierra Student Coalition. Students within the two networks were surveyed asking a variety of questions including what influenced their motivations to be a student environmental activist and how dedicated they are within their campus environmental organizations. Fifty-two responses were collected and revealed culture, economic factors, and altruism are included in the survey. This research has a geographic focus; survey participants provide their hometown and where they attend college. Not surprisingly, there is a stronger presence of "pro-environmental attitudes" on campuses than in students' hometowns.

## **Greening Economic Development in Georgia?**

Nick Davenport

Faculty Mentor: Lynn Patterson

College of Humanities and Social Sciences

Geography

This project shows the efforts of Georgia's local economic agencies in attracting green industry to their communities. Reviewing economic development and comprehensive plans and results from interviews of economic developers, the research presents the degree each community has put together programs and initiatives to attract green businesses. Results show that green industry in Georgia is still in the process of becoming part of the dialogue with economic developers, and that the industry has yet to take hold as part of economic development plans.

# Sap flow for Select Tree Species in a Forest Patch at Kennesaw State University, GA

Anthony Starks

Muhammad Mughal

Faculty Mentor: Paula Jackson, Mario Giraldo

College of Humanities and Social Sciences

Geography

The purpose of this research was to test a method to determine sap flow in trees. The method tested was the Granier sap flow method, whereby sap flow is determined using the difference in temperature among two probes (inserted into trees), in which one of the probes is heated and the other is not. The difference in temperature, together with an empirical relationship, and the area of conduction of sap, can then be used to determine sap flow and sap velocity in trees.

We used a Dynamax Probe 12 system to obtain preliminary data on sap velocity for two very different trees: Sweetgum (*Liquidambar styraciflua* L.) a broadleaf deciduous tree and Loblolly Pine (*Pinus taeda* L.), an evergreen tree. Because we wanted to observe how sap flow is impacted by specific weather variables such as vapor pressure deficit (VPD) and solar radiation, we monitored weather conditions using a Dynamax Metpak Pro weather station. Data were collected throughout changes in seasonal climate in 2012 and the study was located in a forest patch at Kennesaw State University in Kennesaw, Georgia within a prevailing ecological system known as the Southern Piedmont Dry Oak-(Pine) forest.

Our preliminary results indicated that the use of the method is feasible with consideration for tree size (additional probes are needed for larger trees) and positioning of the weather station (an open field in the vicinity of trees is necessary). Furthermore our preliminary data suggest that VPD plays a significant role in the daily sap flow velocity of both tree species, and our early findings also suggest that sap flow was greater in sweetgum (*Liquidambar styraciflua*) when compared to the pine (*Pinus taeda*) during the peak seasonal flow (spring and summer).

## Creative Spaces

Ryan Gibson

Faculty Mentor: Donna Merrell

College of Humanities and Social Sciences

History

The Creative Spaces activity is a collegiate level exercise that integrates the four components necessary to a 21st century education: research, technology, interdisciplinary study, and (most importantly) experience. Through the mode of experiential learning, students become personally invested in the success of organically created political parties that require constant technical and creative attention. They are required to do weekly research that is constantly applied and subsequently graded on quality. Students also gain valuable experience using technology to interact with other students and the professor through social media and tools such as live polling. On top of dealing with common political questions, students are also challenged with a wide variety of issues including the budget, healthcare, and foreign policy that not only insert interdisciplinary study into their basic political science education, but keep the class relevant to current events without the basic question-answer format. And lastly, by usefully incorporating lecture material into active participation, the overall educational experience is greatly enhanced and students genuinely feel excited about coming to a class that fits their 21st century needs.

## Cave Spring Oral History Project

Sharifa Potter

Faculty Mentor: Julia Brock

College of Humanities and Social Sciences

History

Sharifa Potter worked as an oral history intern at the Museum of History and Holocaust Education in the fall of 2012 (the internship was part of her requirements for a Public History certificate in the History department). She co-managed a community-based project, wherein she and Dr. Julia Brock of MHHE collected oral histories of African American alumni of a Rosenwald school in Cave Spring, Georgia. The interviews, which are part of a broader cultural preservation project on the part of the alumni group, will be used for future scholarly research on the school, for obtaining grant funds, as well as receiving potential designation on the National Register of Historic Places.

# **Beyond Secession: Examining the Full Spectrum of Ethnic Autonomy Demands**

Jason Gress

Faculty Mentor: Tavishi Bhasin

College of Humanities and Social Sciences

International Affairs

Existing studies of autonomy demands focus on secessionist demands. Focusing on secession alone ignores other autonomy demands that may be early indicators of secessionist groups. We conceive of autonomy demands lying along a scale where demands for cultural autonomy lie at the low end, demands for devolution or a federal province in the middle and secession at the high end. We seek to explain the level of autonomy demanded by different ethnic groups along this scale. The strategic interaction between these minority groups and their states best explains the levels of demands made. We hypothesize that as states accommodate autonomy demands over time, ethnic minorities are less likely to demand higher levels of autonomy. Alternately, as states fail to accommodate these demands or reduce levels of autonomy, ethnic minority groups are likely to escalate their demands to even higher levels of autonomy. We examine these hypotheses using illustrative cases and new data on autonomy demands, of sixty ethnic groups from five Asian countries between 1940 and 2010 (building on the Minorities at Risk data).



# Do the Right Thing: The Impact of INGO Legitimacy Standards on Stakeholder Input in INGO Activities

Max Harris

Faculty Mentor: Christopher Pallas

College of Humanities and Social Sciences

International Affairs

Concern for INGO responsiveness and representivity has become a strong theme in the literature on transnational civil society and global governance. However, most critiques of INGO engagement with stakeholders have focused on external incentives or disincentives towards democratic behavior. Scholars have examined how the economic environment in which INGOs operate can result in financially-driven behavior or proposed new external norms or standards to promote stakeholder engagement. What has been largely lacking is an examination of internal INGO decision-making processes that may (or may not) result in a value for stakeholder engagement. Drawing on the literature from business ethics and organizational behavior, we examine INGOs' legitimacy standards: how INGOs understand themselves to be doing the right thing and how they seek to project that righteousness to others. Using a survey of 60 INGO websites, we identify 10 legitimacy types and examine their usage. We find that while most INGOs make a series of technical legitimacy claims that seem designed to attract donors, most INGOs also employ core moral or democratic standards that do not seem to be externally dictated. Moreover, moral standards, which prioritize adherence to a cause, are used much more frequently than democratic standards, which prioritize input. Taken together, these findings suggest that challenges to INGO representivity or responsiveness result not only from external pressures, but also from INGOs' own choice of values.

# **The State of the Iron Lady: Female Prime Ministers and their Socio-Military Policies, 1960-2010**

Plamen Mavrov

Faculty Mentor: Amir Azarvan

College of Humanities and Social Sciences

International Affairs

In relation to men, female heads of government are a rare phenomenon in international politics even though over 40 of them have been officially in power since the beginning of the 20th century. Whenever they do emerge, however, the female leaders in question have been shown to command with the same dominating governing style and authority prevalent among their male counterparts. Hence, the question arises as to whether or not the distinct psychology inherent with being a female even makes a difference in such a prime minister's policies, particularly in regard to healthcare and military spending; if so, a certain consistent spending trend should be observable. The aforementioned fields of government spending are analyzed here because they may be seen as theoretically determining the level of influence biological feminine characteristics such as empathy, compassion, and peacefulness have on a female prime minister's decisions and behavior over the course of her term. This study analyzes 10 female prime ministers (one is distinguished as chancellor) from 1960 to 2010 who have served for a minimum of 4 years with the goal of finding peculiar trends in the level and direction of healthcare and military spending during their premierships. The author hypothesized that there will be no overreaching spending trends among the prime ministers with regard to their healthcare and military spending for several reasons. What was found supported the author's hypothesis and the conclusion was made that healthcare and military government spending do not appear to be influenced by the biologically inherent psycho-behavioral inclinations of female leaders; instead, particularly adopted political ideologies as well as external factors such as war, unemployment, population growth, etc. seem to be the factors that correlate with the data found. Ergo, influences on policy are shown to be external rather than internal. This observation corroborates the assumptions posited by both the Rational Actor Theory and Gender Theory because such events are more likely to elicit a logical and rational response akin to a male's given that the female prime ministers' gender roles have been masculinized as a result of their extensive involvement in high level politics, among other sociological factors. The purpose of this study was to explore a concept of international relations, gender, that is often neglected by mainstream theorists despite its ever-growing prominence and relevance as well as to explore the relationship between Evolutionary Theory and Constructivism in international relations.

# **We Fight, Therefore We Are: A Twofold Analysis of Menachem Begin, the Patriarchal Pedagogue of Modern Terrorism**

Plamen Mavrov

Faculty Mentor: John Moran

College of Humanities and Social Sciences

International Affairs

This case-study analyzes the 20th century Zionist Irgun terrorist group leader, Israeli Prime Minister, and Nobel Peace Prize winner, Menachem Begin through the lenses of two distinct perspectives: modern scholarship and the literature of Fyodor Dostoevsky, with 'The Demons' serving as the pre-modern point of reference. Begin's terrorist campaign against the British occupiers of the Mandate of Palestine (modern-day Israel) during the 1940s is one of the most important political conflicts of the 20th century in regard to non-conventional armed conflict because, aside from the founding of a state upon the campaign's conclusion, the terrorist insurgency set the strategic and tactical precedent by which the majority of, if not all, subsequent ethno-nationalist, religious, esoteric, and revolutionary terrorists would abide by into to the 21st century. The author sought to explain the causal relationships provided by scholars in terms of independent and dependent variables, alternative explanations for the given causal relationships by other scholars, and Dostoevsky's non-scientific analysis. Fyodor Dostoevsky, a giant of 19th century Russian literature, was chosen as the point of classical reference because he was a counter-terrorist, albeit unknowingly. As the precursor to Freud, Dostoevsky utilized psychoanalysis in his fiction in an attempt to understand the nihilistic and increasingly violent transformation (via terrorism) he witnessed firsthand his homeland undergoing in the latter part of the 19th century; ergo, his highly political and prophetic novel 'The Demons', serves as a counter-balance to the scientific direction taken by modern scholarship in regard to ethno-nationalist terrorism, a direction which increasingly concerns evaluations of socio-economic and politico-environmental factors. Dostoevsky's counter-balance lies in the re-focusing of attention back on terrorists' individual and deep psychological influences. This paper also shows that modern scholarship is not completely at odds with Dostoevsky's theories of human behavior and actually echoes and even elucidates his outlook at times. The overreaching purpose of this study was to explore the nexus between classical and modern thought concerning terrorism by analyzing the founder of modern terrorism, Menachem Begin, and thus attempt to contribute to the strengthening, through re-direction, of counter-terrorism measures towards greater efficiency.

# Promising Days in Ghana: Policy Recommendations to Address Ghana's Burgeoning Petroleum Sector

Sumi Moon

Plamen Mavrov

Justin Rivard

Faculty Mentor: Nurudeen Akinyemi

College of Humanities and Social Sciences

International Affairs

Many developing states, particularly those with recent petroleum discoveries in Sub-Saharan Africa, have found themselves falling under the “resource curse” in which their countries suffer political deterioration, economic stagnation, and social upheaval as a result of their respective governments focusing only on the development of that sole resource at the expense of everything else. With Ghana’s discovery of what has been estimated to be over 1 billion barrels of oil (by the lowest estimates) in 2007 in the Jubilee Field approximately 60 km off the Ghanaian coast near Effasu and the country’s subsequent first extraction in 2010, Ghana is in the first stages of major economic, and likely socio-political, change. The current transformation is delicate and can either transform Ghana into one of the wealthiest and most advanced states in Africa or reverse its 50-year progress and reduce Ghana to the status of rentier state. Currently, Ghana has developed many key laws and regulations that attempt to ensure petroleum is properly extracted and the profits from it properly utilized. However, there are gaps in these laws and policies that have yet to be addressed. This paper seeks to detail 5 policy options that may be taken by the Ghanaian government in order to improve existing practices, develop new ones, and optimally collect all of the benefits that can be extracted from its burgeoning petroleum sector. The following policy recommendations address issues on both the micro and macro-level scales as well as in regard to current issues and future ones that may arise.

**KEY WORDS:** Ghana, Petroleum, Policy Recommendations, Resource Curse

## **The Theme of Poverty in “La siesta del martes” by García Márquez and “Paso del Norte” by Juan Rulfo**

Hector Gutiérrez

Faculty Mentor: June Laval

College of Humanities and Social Sciences

Modern Language and Culture

In “La siesta del martes” an important characteristic of the main character, the mother, is her pride. This pride of the poor people is based on the dignity that all human beings deserve. Because of love and respect, the mother travels with her daughter to visit the tomb of her son who was killed while trying to rob an old woman’s house. Although the others judge him as a thief, for his mother he was a decent man who robbed only to feed and help his family. The mother and her daughter accept help from no one. They do not even ask for a glass of water. We see in the story that the poor are worthy of respect and do not have to be ashamed of being poor.

In “Paso del Norte”, the main character tries to escape from his misery by fleeing from his village to seek a better life in the United States. He cannot arrive at his destination because the companions who are trying to cross the border are killed and he had to return to his father’s house. Fatalism has won out and the young man accepts his destiny of poverty. Nevertheless, he winds up worse than before because his wife has left him to run off with a muleteer. The main character has learned nothing from his bad experiences and instead of remaining with his father and children, he sets off in search of his wife.

In the first story, the mother is resigned to her poverty but she fulfills her duty and demands respect from others. The son in the second story is not worthy of respects because he abandons his family to go after a woman who has left him for another man.

## Masacres y mentiras en dos obras hispanoamericanas

Scott Lee

Faculty Mentor: June Laval

College of Humanities and Social Sciences

Modern Language and Culture

One tactic of Latin American governments to avoid admission of unfavorable truths of certain political events is very simple: deny that the event took place and erase all traces of the atrocities that were committed. This is the case of vignette 5 in *Así en la paz como en la guerra*, a collection of vignettes and short stories by Guillermo Cabrera Infante published in September of 1960. The event took place in Cuba during the dictatorship of Batista. A group of sailors who had risen up against Batista surrendered by waiving a white shirt as a symbol of truce. When they left the building where they had been hiding, all of them were killed by three machine guns. Then, the bodies were buried in a common trench covered by dirt. The next morning, the only evidence was a spot of fresh dirt and there was no further mention of the event. The dictator Batista erased the rebellion attempt in five hours.

A similar event took place in Mexico City when more than three hundred students were killed by Mexican soldiers in the Plaza de Tlatelolco. Rosario Castellanos in her moving poem "Memorial de Tlatelolco" denounces the massacre on October 2, 1968 during the Olympic Games in Mexico City under the government of Díaz-Ordaz. Castellanos described the plaza on the day following the massacre: "The next morning the plaza was swept clean; the newspapers reported the main news as the weather." All traces of violence had disappeared. The government in these two cases accepted no responsibility for the actions taken. With the silence of everyone and the control of the press, the events were silenced and material evidence disappeared.

## **Summaries of German Studies Research: Three Senior Seminar Projects**

Caleb Russo

Eric Naugle

Cherlee Rohling

Faculty Mentor: Sabine Smith

College of Humanities and Social Sciences

Modern Language and Culture

Students provide summaries of their German Studies Senior Seminar research - in German.

Papers focus on different aspects of German literature and culture. The first presenter analyzes the role of body parts in problematizing cultural identity as communicated in German-Jewish literature after the Shoah; the second presenter focuses on representations of a Jewish sense of Heimat (i.e. belonging) in communist and post-communist Eastern Europe; the third presenter summarizes the role of Catholicism in selected short narratives in German literature.

## The “Cacique” As Protagonist in Three Latin American Short Stories

Cynthia Tatis

Faculty Mentor: June Laval

College of Humanities and Social Sciences

Modern Language and Culture

The “cacique” or local boss who exercises excessive influence on political and administrative matters is a character who frequently appears in the literary works of Latin America. We will examine this character in three Latin American short stories. First, Don Chepe (José Montiel) the rich man in “La prodigiosa tarde de Baltazar” by García Márquez insults the carpenter and refuses to pay for the marvelous cage that he has made for his son.

In “Un día de éstos” also by García Márquez, the mayor, a corrupt official, who has achieved his power by killing many men with no remorse tells the dentist who has just pulled a tooth, to send the bill to city hall because their money is the same as his, that is, they share the same purse.

In “Espuma y nada más” by Hernando Téllez, a barber/clandestine revolutionary has to shave captain Torres who has a vindictive attack planned against the revolutionaries for six o’clock in the afternoon. While the barber shaves the captain neck, he thinks that this would be a good opportunity to kill him but he does not do it because as he explains: “...I am a revolutionary, but not a killer.” The barber does not want blood on his hands, just shaving cream. Captain Torres in a henchman; he himself is only a barber.



## Miracles and Hypocrisy in “Talpa” and “Anacleto Morones” by Juan Rulfo

Jessica Vaquera

Faculty Mentor: June Laval

College of Humanities and Social Sciences

Modern Language and Culture

The belief in virgins and miracles are presented in “Talpa” as a trick used as an instrument of death. Tanilo, a poor sick man has no reason to continue living but sincerely believes in a miraculous virgin that can cure him. For this reason undertakes a pilgrimage to Talpa with his brother and his wife with a sincere faith in the powers of the virgin of Talpa. His wife and his brother nevertheless take advantage of this voyage to sleep together at night and accompany Tanilo in his voyage toward death. This pilgrimage is only an excuse to tire the sick man and hasten his death on the return journey. They use faith to achieve their goals.

In “Anacleto Morones”, we see another example of the abuse of religious faith. Anacleto Morones uses the religious faith of others to obtain money and women. This man was no saint. He was a devil and fake who pretended to make miracles. He used religion to manipulate the people who believed in his powers. The band of old women dressed in black who want to have Anacleto canonized does not want to accept the truth about the sins and tricks that Anacleto has committed. As for the theme of religion in this story, we see a satire of the falseness and hypocrisy of charlatans like Anacleto Morones.

# Exercise Behaviors and College Students: Locus of Control, Planning, and Participation in Fitness

Katherine Arce

Faculty Mentor: Nicole Martin

College of Humanities and Social Sciences

Psychology

Staying physically active is crucial to mental and physical health. Research on the practice and maintenance of exercise behaviors is imperative in order to examine which factors may help contribute to the continuation of exercise behaviors throughout life. Studies indicate that young adults who do not exercise during their college-age years are unlikely to engage in exercise throughout their lifetimes (Browns & Ashton, 2010). The intent of this study was to investigate factors that may be indicative of exercise maintenance throughout life. Using an online survey, I gathered data from 34 undergraduate students concerning exercise habits and possible motives for such behaviors. Preliminary analysis showed that 28.6 % of college students were considered insufficiently active; however, 60 % of those students participated in a sports team in high school in which they physically practiced regularly. Results also indicate that individuals with an external locus of causality engage in exercise behaviors significantly less often than those with an internal locus of causality ( $F = 4.02, p = .028$ ). Further exploration of variables that contribute to intent, motivation, and causality of exercise could ameliorate and increase the health behaviors of young people.

Keywords: exercise, locus of causality, objectives for exercise, motivation, young adults, sports

# Clarifying the Relationship between Stress and Decision Making

Kelley Campbell

Elizabeth Williams

Karen Maddox

James Turner

Melony Parkhurst

Faculty Mentor: Adrienne Williamson

College of Humanities and Social Sciences

Psychology

Stress is an everyday experience that may affect people's decision-making abilities (van den Bos, Harteveld, & Stoop, 2009); however, the direction and intensity of the effect may be influenced by a number of factors, including personality traits (Brand & Altstotter-Gleich, 2008) and the availability of feedback regarding decision accuracy (Brand, 2008). We explored the effects of stress (stress vs. no stress) on decision making while examining how specific personality traits (neuroticism, extraversion, openness to experience, agreeableness, conscientiousness, perfectionism, and anxiety) and feedback (feedback vs. no feedback) were related to this relationship. The stress group was exposed to an acute stressor, the Trier Social Stress Task (TSST; Kirschbaum, Pirke, & Hellhammer, 1993). The no stress group read magazines for an equivalent amount of time. To measure decision-making abilities, participants completed the Game of Dice Task (GDT; Brand et al., 2005). Half of each group completed the original GDT and received feedback regarding the success of their decision. The other half of each group completed the modified GDT and received no feedback about their decision (Brand, 2008). All participants completed a battery of personality inventories and stress questionnaires. We conducted a  $2 \times 2$  between-subjects ANOVA to assess the effect of stress condition (stress, no stress) and GDT version (GDT original, GDT modified) on decision-making performance (GDT scores) and found a significant stress condition  $\times$  GDT version interaction but no significant main effects. There was a significant correlation between GDT score and neuroticism, extraversion, state anxiety, and perceived stress.

## Cross-Gender Friendships: Can Men & Women Just be Friends?

Brittany Edwards

Alyssa Varhol

Jennifer Brooks

Faculty Mentor: Corinne McNamara

College of Humanities and Social Sciences

Psychology

Cross gender friendships are more likely to contain ambiguity, sexual tension, and the avoidance of sexual intent clarifications (Afifi & Burgoon, 1998; Malachowski & Dillow, 2011), especially when there is romantic intent from one or both partners (Malachowski & Dillow, 2011). Researchers were interested in assessing whether these relationship issues may lead to sexual harassment within cross gender friendships. To that end, we examined the perceptions and experiences of individuals in cross gender friendships and their experiences of sexual harassment. Participants were a university student sample ( $n = 435$ , women = 333, men = 90). Preliminary results indicate that of the male participants, almost 7% had sexually harassed a platonic friend, and 10% had been sexually harassed. Of the female participants, over 5% were perpetrators of harassment, and 20% had been sexually harassed. Of the perpetrators, 83.3% of men and 72.2% of women had been sexually harassed before. The majority of perpetrators stated that their cross gender friendships were close; however, half of all male perpetrators did not believe that men could be just friends with women. Eighty-three percent of male perpetrators stated that commitment was not necessary for sexual activity, compared to 39.3% of male non-perpetrators. All female perpetrators indicated that commitment was necessary for sexual activity, compared to 92.4% of female non-perpetrators. We will discuss perceptions and experiences within cross gender friendships as predictors of perpetration and likelihood of being sexually harassed. Implications of these findings will be explored.

## Relationship Closeness and Blame Taking: How Good of a Friend Are You?

Fielding Etheridge

Jennifer Brooks

Faculty Mentor: Jennifer Willard

College of Humanities and Social Sciences

Psychology

Researchers examined peoples' willingness to take the blame in a 2 (relationship closeness: casual or close friend) x 2 (scenario: traffic accident or stealing incident) factorial design. Participants (N = 130) were either asked to think of a specific "casual friend" or a "close friend", and with that friend in mind they read a scenario in which this person either hits another car or steals an object. Afterwards, participants completed a survey assessing their perceptions of their friend and the scenario, their self-esteem and delinquency, and their willingness to take the blame. Participants were more willing to take the blame in the traffic scenario than the stealing scenario  $F(1, 129) = 29.01, p < .001$ . However, despite perceiving differences in the scenarios, there was a main effect of closeness such that participants were more willing to take the blame for a close friend than a casual friend,  $F(1, 129) = 5.21, p = .024$ . Participants in the close friend condition reported more feelings of protection and reciprocity than participants in the casual friend condition  $F(1, 128) > 8.32, p < .005$ . These results may be applicable to voluntary false confessions, an area in which little experimental research has been conducted.

# Undergraduate Research Experiences and Critical Thinking in First-Year Students

Brian Ginburg

Faculty Mentor: Amy Buddie

College of Humanities and Social Sciences

Psychology

The development of critical thinking skills is a fundamental goal of higher education, and research indicates that an undergraduate research experience is beneficial to critical thinking (e.g., Kuh, 2008). Research on critical thinking and undergraduate research mostly relies on self-report measures (e.g., Ishiyama, 2002). Also, there are few studies on undergraduate research experiences and dispositional cognitive measures like need for cognition (Cacioppo, Petty, & Kao, 1984). Finally, there are few studies on first-year students even though research indicates that early involvement in undergraduate research is academically beneficial (Ishiyama, 2002). This study addresses these research gaps by recruiting first-year students and incorporating an empirical assessment of critical thinking skills and a dispositional measure of need for cognition before and after an undergraduate research experience. Forty-three participants were recruited from two first-year seminar classes at Kennesaw State University. In one class, students formed teams and designed surveys to be administered in the United States and Brazil the following semester. In the other class, groups of students were assigned to work with faculty members on existing research projects. At the beginning and end of Fall semester, participants completed the Need For Cognition Scale (Cacioppo et al., 1984) and a modified version of the Ennis-Weir Critical Thinking Essay Test (Ennis & Weir, 1985), a measure of critical thinking that requires participants to read paragraphs from a letter to the editor and point out the weaknesses of the arguments. We also will examine SAT scores, ACT scores, AP classes, and GPA. For Time 1 data (beginning of Fall semester), we found no significant differences between the classes in terms of SAT scores, ACT scores, and number of AP classes taken. We hypothesize an improvement in critical thinking skills and an increase in need for cognition from the beginning to the end of the semester. We will also examine potential differences in scores between classes as a function of the type of undergraduate research they experienced. The results from this study could contribute greatly to the literature on undergraduate research experiences. Few studies have assessed critical thinking longitudinally in first-year undergraduate researchers, especially with two samples who had very different types of research experiences.

## Short and Long-Term Benefits of a Circus Arts Therapy Program

Tommy Gonter

Bria Cantrell

Whitney Warren

Faculty Mentor: Lauren Tagliatalata

College of Humanities and Social Sciences

Psychology

Circus Arts Therapy (CAT) is an alternative to Traditional Play Therapies that is based on a holistic philosophy, and is designed to foster mental and physical development. The CAT program is founded on fitness and nutrition instruction, contemporary Chi Kung, brain and body balancing, and the circus arts. Children with mild to moderate emotional, social, and/or physical challenges participate in weekly classes with peers, parents, and/or siblings. During these sessions, group members discuss nutrition, healthy activity, teamwork, and problem solving. All group members participate in circus-based activities including low trapeze, triple trapeze, juggling, tight-wire walking, aerobic warm-ups, and stretching cool-downs. We evaluated the potential benefits of participating in this 8-week therapy program using a pre/posttest design. Parents completed a paper and pencil self-report survey at the beginning and end of each 8-week session. The survey was designed to measure physical ability, emotional stability, health, mental focus, and social skills. We collected data about 19 children (9 boys, 10 girls) ranging in age from 4 to 12 years ( $M = 6.65$ ,  $SD = 1.78$ ). In order to determine whether or not there were changes between pre and posttests, we ran a series of one-way ANOVA's for dependent groups. Parental perception of physicality (including balance, strength, coordination, and flexibility) improved significantly from pre-test to post-test,  $F(1, 17) = 13.049$ ,  $p = .002$ . Data reflect improvement trends for several factors including teamwork, social interaction, nutrition decision, and communication. Potential reasons for these non-significant differences between pre and posttest scores could be related to sample size/power, heterogeneity of sample, or lack of benefit. It is possible that there will be no benefit from this program. However, given that the statistical power was below .5 for all aforementioned analyses there is a higher possibility of Type II error. One potential explanation is the heterogeneity of the sample. Participants varied widely in areas of strengths and weaknesses. Finally, the lack of statistical significance does not necessarily point to a lack of efficacy in the CAT program, and we hope to evaluate the data from a case study approach.

# An Evaluative Reflection of a Global Engagement Project for Learning Community Students

Madison Hanscom

Justin Hoenstine

Rebecca Powers

Faculty Mentor: Gail Scott

College of Humanities and Social Sciences

Psychology

Global and multicultural perspectives are central institutional priorities at Kennesaw State University (KSU). Faculty, staff, and administrators are committed to increasing global engagement and multicultural education ("KSU Mission," 2006). As an attempt to increase global awareness, the researchers chose to evaluate how a Global Engagement Project (GEP) would affect first-year learning community students at the collegiate level. The Haiti Global Engagement Project was a creative-project activity program established to introduce students in two freshman learning communities to lifestyle hardships in Haiti. Both Learning Community 23 (Girl Talk) and Community 26 (Class of 2016) learned about the violence and exploitation Haitian women and children face in camps. Students were exposed to issues in Haiti by videos, articles, and class discussions. In addition, they were required to complete a service project in which proceeds from campus bake sales and shoe donations were sent to aid overseas. The researchers created five hypothesized questions that would be supported or not supported by a 28-item questionnaire given at the end of the semester. The authors found support for each of the hypothesized questions. Similar to the results found by Kisantas (2004), it was observed that students develop a perceived increase in global awareness and cross-cultural education after they transitioned through a GEP. Curriculum similar to the Haiti Global Engagement Project is vital because it helps to increase students' community service, global awareness, and engagement. Due to success of establishing global learning into the curriculum, KSU was awarded the Sen. Paul Simon Award in June 2011 from the NAFSA: The Association for International Educators. This award is named after previous Illinois senator, Paul Simon, who devoted his life to supporting international education and foreign language learning. "This prestigious award signals that KSU is on target with the goals we established in 2007 to create an integrated, interdisciplinary and multi-faceted global learning environment at KSU," said Daniel S. Papp, KSU president. "Each of the university's eight colleges has strategically incorporated these goals into curriculum, faculty and student development objectives. We are extremely pleased that NAFSA recognizes the results."



# **Sociosexuality, Susceptibility to Rape Myths, and Perceived Aggression Regarding Rape**

Madison Hanscom

Helen Spence

Ashley Sellers

Faculty Mentor: Gail Scott

College of Humanities and Social Sciences

Psychology

The authors investigated the relationship between one's perceived aggression regarding rape scenarios and their sociosexuality. In addition, the authors investigated perceived aggression and susceptibility to crediting rape myths. The researchers measured sociosexuality with the SOI-R and determined susceptibility to myths using a rape myths questionnaire. The researchers examined aggression with follow-up questions presented after rape scenarios.

# Faculty Barriers for Supervising Undergraduate Researchers: The Perceptions of Non-Mentors

Scarlet Hernandez

Mary Scannavino

Stephen Ajetomobi

Faculty Mentor: Amy Buddie

College of Humanities and Social Sciences

Psychology

Research suggests that undergraduate research is a high-impact educational practice (Kuh, 2008) with significant benefits for the students (e.g., Hunter et al., 2006). For faculty, however, there can be significant barriers to mentoring undergraduate researchers, including a lack of benefits for the faculty, underprepared students, and a great amount of time necessary for faculty involvement. In our study, we were interested in examining the perceptions of faculty who have not mentored undergraduate researchers during the past year. The Kennesaw State University faculty were given an anonymous, 10-minute survey of 30 questions through the university's email list. Questions were divided into three parts: (1) Barriers to mentoring undergraduate researchers (e.g., it is time consuming, it is not valued by their department or college, it does not help with tenure and promotion); (2) Activities that would help increase participation in undergraduate research (e.g., funding, workshops, reassigned time); and (3) Demographic information (e.g., gender, college). In this poster, we will describe the most and least important barriers as well as information about what faculty members perceive would help them mentor undergraduate researchers. The results from this study can be used by colleges and universities to help identify why some faculty do not get involved in undergraduate research and how to implement changes that might increase faculty participation.

## Attitudes Toward Repeated Unwanted Contact

Alexandra Knight

Alyssa Varhol

Samantha Rowell

Faculty Mentor: Corinne McNamara

College of Humanities and Social Sciences

Psychology

The relationship between social norms and behavior has been examined in many areas. Most notably, researchers found a strong influence of perceived social norms on rape proclivity (Essyl, Bohner, & Siebler, 2006) and on likelihood to engage in binge drinking and drunk driving (Perkins, Linkenbach, Lewis, & Neighbors, 2010). However, there is little to no prior research exploring how social norms relate to repeated unwanted contact. We analyzed the relationship between perceived social norms and stalking proclivity. A convenience sample of 483 (92 male, 389 female) undergraduate students completed nine self-report, Likert-Type questions in an online survey. Artificially inflated and deflated social norms were paired with nine stalking behaviors ranging in severity from moderate (e.g., spying) to extreme (e.g., intending to physically harm). The artificially inflated norms implied to the participant that stalking behavior was more prevalent, and the artificially deflated social norms implied the behavior was less prevalent. We assessed whether artificially inflated or deflated social norms would have an effect on each participant's reports of willingness to engage in each stalking behavior. Independent t-tests were conducted for each of the nine survey items comparing the inflated social norm group with the deflated social norm group. Overall, we found that when a stalking behavior was portrayed as more prevalent, participants were more likely to report they would stalk someone. Conversely, when participants thought the behavior occurred less frequently, they were less likely to report they would stalk someone. Our results are in line with other research, where social norms heavily influence participants' behaviors (Essyl, Bohner, & Siebler, 2006; Perkins, Linkenbach, Lewis, & Neighbors, 2010). Our study provides further support for the powerful influence of our peers and their opinions on our decision making, even when deciding to engage in illegal and unwanted acts.

# Affect Specificity of Positively- and Negatively-Valenced Emotions in Infancy

Lindey Maza

Savannah McGrath

Amber Phelps

Faculty Mentor: Nicole Martin

College of Humanities and Social Sciences

Psychology

Social referencing studies have demonstrated that by one year of age, infants can differentiate between positively- and negatively-valence emotions. This study examined development advance ability to recognize and respond uniquely to within valence emotion. Forty infants (20 12- to 14-month-olds, and 20 16- to 18-month-olds) were shown a video presentation of a social referencing paradigm with six conditions: three negatively valenced (anger, fear, sadness), two positively valenced (happiness, surprise), as well as one neutral control condition.

The current results indicated that the older infants have distinct behavior respond to fear, anger, sadness, and happiness. Older infants touched the toy least in fear, avoided touching the toy but dropped it when they did interact with it in anger, touched the toy most in sadness and produced mild negative vocalizations. Older infants touched the toy most in the happy condition but failed to make a distinctive response to the surprise condition. Younger infants touched the toy most in the negatively-valenced conditions and least in the positive, failing to understand the messages presented.

In summary, these findings indicate that older infants are treating each negatively- valenced emotion qualitatively different, showing the strongest reaction to anger and fear. Although evidence was found that the younger infants recognized the difference between positive and negative valence emotions, they failed to show an understanding of the meaning behind the emotions.

Keywords: infant emotions, social referencing, affect specificity, emotional imputation

## Effects of Mentoring on Self-Concept in Adults

Jennifer Smith

Faculty Mentor: Gail Scott

College of Humanities and Social Sciences

Psychology

The intended purpose of the community based research is to gain insight into the self-concept of mentors in terms of their development in social, performance, and appearance efficacy as measured by the Heatherton & Polivy State Self-Esteem Scale (1991). The data will be used to aid in the evaluation of effectiveness of mentorship programs, as well as schools or private institutions that provide mentors in their programs. The researchers hypothesized that adults who mentored in the last twelve months will display high rates of self-concept rather than low rates of self-concept. Participants in this study consisted of 211 students. All participants were enrolled at Kennesaw State University (KSU) during the 2012-2013 academic school year. All were required to have mentored within the last twelve months. Mentoring was defined as working with children and/or adolescents one on one or in a group, with examples such as boys and girls clubs, tutoring, or sports teams. The research was made available to students through Sona, the KSU online research experience system required for PSYC 1101 Introductory Psychology students. Survey Monkey was used as a facilitator through Sona to collect research responses and further analyze the results. The Heatherton & Polivy State Self-Esteem Scale (1991) is a 20 question scale. Each question is answered on a Likert-type scale with each number equating to a different response. In order to interpret the results, a frequency count of the responses was utilized. Results displayed a general support for the researcher's hypothesis.

# **Cultural Differences in Self-Concept Between Orphaned Adolescents in Kenya and Lower Socioeconomic Status Adolescents in the U.S.**

Kizmat Tention

Faculty Mentor: Gail Scott

College of Humanities and Social Sciences

Psychology

The authors' analyzed differences in self-concept of orphaned adolescents living in Kenya to those of low SES in the US.

## **AID Atlanta: Qualitative vs. Quantitative Program Evaluation**

Benjamin Tippens

Faculty Mentor: Christine Ziegler

College of Humanities and Social Sciences

Psychology

According to a Foundation survey created by Kaiser Family (2009), HIV/AIDS is still a prevalent issue in the United States despite what many American's may believe. AIDS alone was the leading cause of death among people between the ages of 25 to 44 year-olds in 2005, predominantly in African American women. Presently, there are over one million people living with HIV/AIDS and over 50,000 infections arising in new individuals each year. On average, 21% of individuals living with HIV/AIDS are unaware of their infection. These numbers help to demonstrate that HIV/AIDS is a significant issue populating our country.

In order to reduce the rate of new infections arising, effective HIV/AIDS education is necessary. AID Atlanta is a leading HIV/AIDS service organization that offers an array of educational programs. One basic program offered by AID Atlanta that is geared to the general public, AIDS 101, covers a broad range of topics among the HIV crisis. This program is aimed at informing the general public about a wide range of HIV/AIDS topics. There are Advanced and General Medical sessions providing both basic and advance information about how the virus works and the various kinds of drugs used to control the virus once it has been detected. The Personal Experience Panel is an opportunity for attendees to listen to the stories of people who have been living with HIV/AIDS. There are sessions covering women's issues, the psychosocial issues of those living with the virus, advice for caregivers, important information about the many free services for HIV/AIDS clients and their loved ones, and current treatment and research. Three sessions focus on prevention within in specific groups (e.g., AIDS in the African American Community, Staying Safe in 2012 which is aimed at younger male groups). Knowledge about the virus is assessed before the sessions begin and again at the end of the program.

The researchers analyzed pre and post-test scores from the educational programs to determine whether any specific patterns were produced before and after the training. In addition, participant evaluative comments were subjected to qualitative analysis. The quantitative data indicated significant improvement in HIV/AIDS knowledge while the qualitative analysis provided a wealth of information concerning the specific strengths and weaknesses of the program. The qualitative analysis will be used to inform AID Atlanta of what sorts of changes would make the programs stronger and more relevant for future participants.

## Prevalence and Perception of Mental Health at KSU

Ken Trickey

Courtney Collins

Darya Sipeykina

Faculty Mentor: Daniel Rogers

College of Humanities and Social Sciences

Psychology

Mental health awareness and prevalence is an important issue and a growing concern on college campuses. Active Minds is a student organization at Kennesaw State University (KSU) that seeks to bring attention to these issues by increasing awareness and acceptance of mental illness while reducing stigma. Participants were 461 (22.4% male, 77.6% female) newly enrolled undergraduate and graduate students at KSU. Participants were predominantly White (75.8%), Black (14.6%), or Hispanic (4.8%). Students completed three questionnaires via an online survey : Attitudes Towards People with Mental Illnesses, Prevalence of Mental Health Issues, and demographics. The mental health attitudes scale contained two subscales (negative stereotypes and recovery and outcomes). The KSU sample's attitudes towards people with mental illnesses were similar to a national sample in a previous study. Of the KSU sample, 24.2% had been diagnosed with a mental illness. Of those diagnosed, 68% reported a diagnosis related to depression and 56% reported a diagnosis related to anxiety. Of those diagnosed, 72.9% reported current mental health symptoms under control. Results showed that students are significantly less likely to use on-campus counseling services that are already available than off-campus mental health resources. The data may be helpful to various campus constituencies (e.g., Counseling and Psychological Services, Student Health, Active Minds) in their efforts to address issues related to student mental health.



# **Intro to Psychology: The Effects of Study Groups on Exam Scores and General Self Efficacy Scores**

Allison Venoy

Elizabeth Grissom

William Colombo

Faculty Mentor: Gail Scott

College of Humanities and Social Sciences

Psychology

This study compares exam scores of students in a structured study group (n=40; 34 female, 6 male) with those not in the study group (n=213). The study was conducted using both traditional and non-traditional students enrolled in an introductory Psychology course at Kennesaw State University. Forty students enrolled in a study group that met weekly for one hour and fifteen minutes. Attendance was mandatory. Students were given study materials to enhance their knowledge of information covered in the previous classes. The materials consisted of crossword puzzles, matching forms, fill-in the blank sentences, graphic organizers, and practice tests. All students in the study group took three exams and a final exam. Study group participants achieved a higher test score average than the students in the non-study group. The research further examines the study group's general self-efficacy. It is hypothesized that higher grade averages will correlate with higher general self-efficacy scores.

# The Relationship between Mood and Eating Styles in Response to Food Cues

Melodi Zhan-Moodie

Lindey Maza

Faculty Mentor: Sharon Pearcey

College of Humanities and Social Sciences

Psychology

The purpose of the study is to examine the relationship between mood, and eating styles in response to food cues. The revised 18 question Three Factor Eating Scale (de Lauzon et al., 2004) was used to determine participant eating style. Each participant was surveyed to determine his or her level of Cognitive Restraint, Uncontrolled Eating, and Emotional Eating. Cognitive restrained is conscience restriction eating in order to control body weight. Uncontrolled eating is the tendency to eat more than usual due to an increase in disinhibition. Emotional eating is the inability stop eating when in an emotional state. Participants were then given the PANAS-X (Watson & Clark, 1994) to determine mood state. The participants were then shown a series of either pictures of foods as the experimental condition, or pictures of geometric shapes of various colors as the control condition. There were 50 pictures in each cue presentation, and participants were instructed to rate each picture on a likert scale between one and five, one being extremely appealing and five being extremely unappealing. Immediately following the presentation, participants were administered the PANAS-X again. Once data collection has been completed, data analysis and results will be conducted. We hypothesis that cognitive restrained eaters will experience a decrease in positive mood scores after viewing food cues compared to those who are shown the shape cues. Uncontrolled and emotional eaters will be unaffected by the food and shape cues.

## Food Craving Behaviors by Students

Creg Zierler

Faculty Mentor: Lauren Tagliatela

College of Humanities and Social Sciences

Psychology

The author investigated craving behaviors of students enrolled at Kennesaw State University. Forty-seven participants completed the Food Craving Inventory (FCI) by Lobera, Bolaños, Carbonero, & Blanco (2010) online. Lobera et al. used the FCI to assess craving behaviors in Spanish-speaking populations. The FCI lists 28 food items (e.g., pasta, candies, bacon) and participants are asked to indicate their cravings for that food during the past month on a scale of A (Never) to E (Always/Almost every day). The KSU sample consisted of 10 men and 37 women between the ages of 19 and 42 ( $M=23$ ,  $SD=4.82$ ). Results indicate that pasta (17%), ice cream and chocolates (13%), and candies and bagels (9%) are most frequently reported as “always” craved. Analysis of variance indicate that women crave sweets such as ice cream, cookies, candies, and brownies significantly more than men (all  $p < .05$ ). On the contrary, men crave meat items such as hamburgers and steak significantly more than women (both  $p < .05$ ). With Spanish-speaking populations, Lobera et al. also found a significant sex difference for the craving of hamburgers, ice cream, cookies, and brownies. However, Lobera et al. found sex differences between food items that we did not find in the KSU sample. These results and extensions of this type of research may be used to differentiate cultural food preferences by location, inform businesses about product marketing, and serve as an initial model for food craving comparison across cultures.

# Self-Focusing and Laser-Induced Ionization Effects in the Propagation of Intense Ultrashort Laser-Pulses through Dielectrics

Jiexi Liao

Faculty Mentor: Jeremy Gulley

College of Science and Mathematics

Biochemistry

This research project concentrates on the interaction of high-intensity laser pulses with matter. High power ultrashort lasers have become an important tool for investigating the characteristics of all forms of matter. The shortness of a pulse refers to the amount of time it takes for the pulse to pass through a single point in space, i.e. how long the flash of light lasts. Pulses provided by modern laboratory lasers can be as short as a millionth of a billionth of a second, and are referred to as "ultrashort." Such pulses are typically very intense, squeezing all the energy of a normal laser beam into one small "bullet" of light. At high field intensities the familiar laws of optics, known as linear optics, break down and the interaction of light with matter becomes strongly nonlinear, even destructive. Two such examples are self-focusing, where a high intensity pulse can temporarily change an ordinary piece of glass into a lens, and multi-photon ionization, which initiates the onset of laser-induced damage in an insulating material. The presented research shows simulation results of what happens when both of these effects occur simultaneously for different wavelengths of light. These simulations numerically solve a 3D complex-nonlinear partial-differential equation describing the propagation of a high-intensity laser-pulse through insulating materials. During propagation the destructive interaction of the laser-pulse with the medium is modeled by coupling the nonlinear propagation equation with a system of ordinary-differential equations describing laser-induced ionization dynamics. The presented results are part of a larger research project at KSU to model laser-induced damage of bulk dielectrics by multi-chromatic light.

## **ABCB1 Expression in Adrenocortical Cells is Uniquely Regulated Compared to Other Cell Types**

Christopher Raymond

Faculty Mentor: Jennifer Powers

College of Science and Mathematics

Biochemistry

ABCB1 gene expression and its role in multi-drug resistance and pharmacokinetics have been widely studied in tissues such as intestines, liver, and kidneys. The protein product, P-glycoprotein, is believed to play a role in transport of steroids and xenobiotics. Since adrenal cells have a significant expression of this protein and also secrete steroids, we are interested in understanding ABCB1 expression in this cell type. Increases in ABCB1 expression in other cell types and species have been observed with adrenocorticotropin hormone (ACTH), steroids, activators of the steroid and xenobiotic receptor (SXR), and epinephrine. Therefore, we examined ABCB1 expression in a human adrenocortical cell line, H295R, by treating for 24 h with 10 nM ACTH, 10  $\mu$ M forskolin, or 5  $\mu$ M epinephrine. RNA was isolated and converted to cDNA with a commercially available kit, then analyzed using quantitative RT-PCR. In contrast to effects reported in other cells, ACTH showed no effect on ABCB1 expression, while forskolin showed a two-fold decrease. Epinephrine showed a less than two-fold decrease in expression although other cell lines have shown a five-fold increase. The differences in response may be due to differences in receptors expressed. Our previous work has shown little expression of SXR in this tissue, but significant levels of the farnesoid X receptor (FXR). Results from additional work with FXR activators will be discussed.

## The Effect of Ar Tagging on the H<sub>5</sub>O<sub>2</sub><sup>+</sup> Protonated Water Cluster

Andrew Shatz

Deborah Adedeji

Faculty Mentor: Martina Kaledin

College of Science and Mathematics

Biochemistry

Experimentalists use Argon as a “messenger” atom. The weakly-bound rare-gas atom argon is attached to the H<sub>5</sub>O<sub>2</sub><sup>+</sup> water cluster, where the vibrational excitation of the cluster detaches and the messenger and vibrational predissociation spectra are obtained. However, H<sub>5</sub>O<sub>2</sub><sup>+</sup> is perturbed by Ar and infrared spectra change. This computational work evaluates interactions of Argon atom with the H<sub>5</sub>O<sub>2</sub><sup>+</sup> water cluster.

Structural parameters and energetics of H<sub>5</sub>O<sub>2</sub><sup>+</sup> and H<sub>5</sub>O<sub>2</sub><sup>+</sup>.Ar were predicted using various methods such as Hartree Fock (HF), density functional theory (DFT) with B3LYP, PW91, BLYP functionals, and many body perturbation theory (MP2) with aug-cc-pVDZ, aug-cc-PVTZ, and 6-31+G\*\* basis sets. Vibrational frequencies were obtained using the normal mode analysis. The O-H+...O stretch vibration increased significantly in the presence of Argon. The bond dissociation energy  $D_0$  (ZPE corrected value) for H<sub>5</sub>O<sub>2</sub><sup>+</sup> → H<sub>2</sub>O + H<sub>3</sub>O<sup>+</sup> was calculated as 33.7 kcal/mol (MP2 aVTZ) which is in a relatively good agreement with the experimental values of 31.6 and 32.4 kcal/mol.

The structural parameters and frequencies will later be used to develop and test on the quality of the force fields.

# **Ab Initio Study of Uracil: An Introduction to Computational Chemistry Methods**

Andrew Shatz

Deborah Adedeji

Faculty Mentor: Martina Kaledin

College of Science and Mathematics

Biochemistry

This project introduces students to the computational methods and tools needed in computational chemistry. Computational study of the nucleobase uracil was performed to predict the structure and vibrational frequencies. The molecular structure was built up using the Gaussview program. The ground-state equilibrium geometry was obtained using different ab initio methods by means of the Gaussian 09 program. Vibrational frequencies were calculated using the normal mode analysis. The accuracy of the computational approach varies depending on the method and basis set used. Structural parameters and vibrational frequencies were compared to the available experimental measurements.

# Similarity Networks Reveal Relationships Among Sequence, Function, and Structure Within the Cupin Superfamily of Proteins

Richard Uberto

Faculty Mentor: Ellen Moomaw

College of Science and Mathematics

Biochemistry

The cupin superfamily is perhaps the most functionally diverse superfamily of proteins. The largest subset are the 2-oxyglutarate-Fe<sup>2+</sup> dependent dioxygenases. The cupin superfamily is specificity and mechanistically diverse yet structurally non-diverse. Although the majority of enzymatic cupins contain iron as an active site metal, other members contain either Cu(II), Zn(II), Co(II), Ni(II), or Mn(II), with each cofactor allowing a different type of chemistry to occur within the conserved tertiary structure. Protein similarity networks (PSNs) are a way to conveniently visualize relatedness among a given set of proteins. The protein sequences are the nodes, and their similarities to each other are represented as edges. Longer edges imply less similarity. In this work we describe the visualization of sequence and structure data using open source software programs Pythoscape and Cytoscape.



## **Delineation of Genetic Variation in Wood Frogs (*Lithobates sylvaticus*) near a Northern Edge of Distribution**

Lucianna Araujo

Faculty Mentor: Thomas McElroy

College of Science and Mathematics

Biology

We investigated the genetic population structure of wood frogs (*Lithobates sylvaticus*) from collection sites in transitional boreal and tundra habitats near Churchill, Manitoba, Canada (Western Hudson Bay), which is at a northern edge of this species distribution. Previous studies in the Northern Great Plains, Colorado and Maryland (USA) regions on this species have revealed strong subdivision among populations at large (20 km) scales and high gene flow within 5 km. We surveyed a set of 20 microsatellite loci used in the previous studies for 160 specimens collected from 10 sites in a 400 km<sup>2</sup> area near Churchill for this study. The previous study indicated these loci had observed heterozygosities that ranged from 0.16 to 0.60. Our study revealed much more limited genetic diversity within the populations and significant heterozygote deficiencies within all of the samples for the loci surveyed. Further our data indicated significant population structure at scales less than 20 km. These data support significantly reduced gene diversity of edge populations as compared to core populations. The data is consistent with the predictions of a leading edge dispersal hypothesis where genetic diversity may be limited and dispersal may be reduced in populations that occupy a distribution limit (edge) for a species. Understanding the genetic composition and ecology of edge populations can provide key information to the historical, ecological, and demographic factors shaping species' geographic ranges.

## **Building an Interactome: Identifying Novel Akirin-Interacting Factors**

Aayushi Bhagwanji

Meghan Troutt

Shelby Johnston

Faculty Mentor: Scott Nowak

College of Science and Mathematics

Biology

The specification and differentiation of muscle precursor cells, or myoblasts, by the action of the Twist mesodermal and muscle transcription regulator is a key event in the formation of the *Drosophila* larval musculature. However, despite the primary importance of myoblast specification and differentiation for building and patterning the musculature, the identities of many molecular players in this process remain unknown. We have recently determined that Akirin, a highly conserved nuclear protein, appears to play a critical role in the regulation of Twist-dependent gene expression during mesodermal specification and muscle development. We performed a genetic interaction screen to identify Akirin interacting-proteins that have essential roles during the process of muscle specification and patterning. Using our screening method, we have identified a number of loci that genetically interact with Akirin during muscle patterning. Our list of positive Akirin-interacting partners includes factors involved in general transcription initiation, as well as components of chromatin remodeling complexes. Identification of the cast of molecular players that work with Akirin will provide crucial insight into Akirins mechanism of molecular action during myoblast specification and muscle patterning.

# Survival Response to Echis Carinatus Venom in Human Umbilical Vein Endothelial Cells

Veronica Garbar

Chelsea Beard

Taniesha Smith

Faculty Mentor: Eric Albrecht

College of Science and Mathematics

Biology

In this study, we examined the survival response of human umbilical vein endothelial cells (HUVEC) stimulated by Echis carinatus snake venom. Hemorrhagic snake venom, such as Echis carinatus, destroys local tissue and disrupts hemostasis. In addition, it is known to have pro-inflammatory effects on the endothelium, yet the survival mechanisms have not been characterized. Therefore, we utilized several biochemical techniques to assess key intracellular responses. Results from western blot analysis showed selective degradation of focal contact proteins HIC-5 p130CAS, and CRP. In addition, crude venom stimulation induced an increase in reactive oxygen species (ROS). This paralleled the translocation of metal transcription factor 1 (MTF-1) to the nucleus. We utilized the cell permeable zinc probe FluorZin-3 to map the location of labile intracellular zinc and monitor real-time changes in zinc during venom stimulation. We conclude that Echis carinatus induces focal contact loss resulting in increased ROS and MTF-1 nuclear translocation. This data suggest intracellular zinc trafficking plays an important role in acute vascular injury associated with snake envenomation.

# Comparison of Nitrogen Transformation Rates in Vegetated and Un-Vegetated Marine Sediments of St. Joseph Bay, FL

Daniel Hoffman

Faculty Mentor: Troy Mutchler

College of Science and Mathematics

Biology

Estuarine and associated coastal ecosystems are highly productive and support diverse faunas of both ecological and economic significance. These ecosystems are susceptible to numerous anthropogenic stressors, particularly cultural eutrophication. Thorough characterization of this threat requires detailed understanding of the fate of nutrient inputs to determine the residence time within the system and identify metabolic pathways that govern system response to eutrophication. Bacterial nitrogen (N) transformations in the sediments likely drive the fate of N in seagrass systems, but estimates of N transformation rates within vegetated sediments rarely have been measured. To characterize these rates, sediment cores from vegetated (containing *Thalassia testudinum*) and un-vegetated sites in St. Joseph Bay, FL were collected and incubated in a continuous flow system.  $^{15}\text{N}$ -labeled  $\text{NO}_3^-$  and  $\text{NH}_4^+$  were added to the cores to track the fate of N in the cores. Samples from the inflow and outflow of the cores were collected and analyzed for nutrient concentrations and net  $\text{N}_2$  fluxes via membrane inlet mass spectrometry. Initial results indicate low  $\text{PO}_4^{3-}$  concentrations throughout the experiment; however, time and treatment interacted to affect nutrient concentrations.  $\text{PO}_4^{3-}$  concentrations were higher in control cores than cores spiked with  $^{15}\text{N}$ -labeled nitrogen sources. The rates of N transformations in vegetated and un-vegetated sediments will be examined to assess the role of seagrass on the fate of nitrogen in coastal systems.

# Characterization of Gene Expression in Stem Cell Derived Neuroblasts

Christina Homer

Mohamed Zaidi

Katie Bales

Faculty Mentor: Martin Hudson

College of Science and Mathematics

Biology

Mouse embryonic stem cells can be isolated from mouse embryos and have an unlimited ability to self-renew and proliferate in culture in huge numbers for many generations. Further, they are the only stem cell lines known to be undifferentiated and pluripotent that are available for study. A key advance in stem cell research was the discovery that mouse embryonic stem cells could be differentiated directly into neurons via a monolayer protocol. This generates cells in high yield, whereas traditional protocols, which differentiated cells in suspension via embryoid bodies, were very low yielding, and generated heterogeneous populations of cells. We have analyzed the expression of the EphR and ephrin family members using a monolayer differentiation protocol and found that their expression levels broadly mirror that seen in *in vivo* forebrain development. However, we do not yet know if these are formally of forebrain fate. The aim of this project was to perform immunostaining on *in vitro*-derived neurons to determine if EphA7, an Eph receptor that is highly expressed in the developing cortex, is co-localized with known forebrain markers such as the transcription factor Pax6. As a control we also analyzed the same EphA7 expressing cells with known markers of midbrain fate including tyrosine hydroxylase, an enzyme required for dopamine synthesis.

## Understanding the Role of EphA7 in Neuroblast Cell Division

Amelia King

Faculty Mentor: Martin Hudson

College of Science and Mathematics

Biology

During mammalian cortical development, neural stem cells lie adjacent to the ventricle. After each round of cell division, daughter cells migrate radially outwards past the previously born population, creating the layered structure of the cortex in an inside-to-out manner. While the fate specification of cortical layering is beginning to be understood, very little is known about how neuroblasts establish and maintain radial morphology and polarity during cell division. Stem cells can be differentiated in vitro into cortical neurons and offer an excellent model to examine factors that affect neurogenesis. During in vitro neural differentiation, EphA7 is localized to the apical surface of neuroblasts and colocalizes with apical markers such as ZO-1. To further understand the mechanism of EphA7's role in neurogenesis, we are developing a bromodeoxyuridine (BrdU) pulse-chase assay. In conjunction with immunostaining techniques, this will help us to establish the relationship and fate of daughter versus mother cells. BrdU is a thymidine analog that will be incorporated into a cell's DNA when in S-phase. We anticipate that EphA7 selectively partitions into the actively cycling mother cell, leading to a population of nestin positive, EphA7 positive neuroblasts and a population of Tuj1 positive, EphA7 negative terminally differentiated neurons. Experiments are ongoing to demonstrate this. These data are being corroborated with time-lapse live-labeling experiments, using ephrin-A5 extra-cellular domains to label EphA receptors on actively dividing cells.

# Modeling Dorsal Midbrain Neurogenesis In Vitro

Colin King

Teresa Smith

Faculty Mentor: Martin Hudson

College of Science and Mathematics

Biology

Counter-gradients of Eph receptors and their cognate ephrin ligands are important in establishing neighbor-neighbor relationships between neurons when projecting from one region of the brain to another. During development of the vertebrate dorsal midbrain (superior colliculus or tectum), a low-anterior to high-posterior ephrin-A5 gradient is specified by secretion of FGF8 from the mid-hindbrain organizer. However it is not known if FGF8 is also involved in specifying the counter-gradient of EphA7 expression. To address this, we have begun developing an in vitro model of midbrain neurogenesis using a stem cell-to-neuron differentiation. An ERK pathway inhibitor was used to shift cells from a broad anterior towards a hypothesized midbrain fate, while cyclopamine was used to inhibit the sonic hedgehog (Shh) signaling pathway, which is known to be responsible for specifying ventral fates in midbrain cells. Immunostaining and RT-qPCR analysis were performed in order to examine the expression levels of different neural fate markers characteristic of ventral and dorsal midbrain, in addition to fore and hindbrain markers. We found that expression levels of Shh were lower in the cyclopamine treated groups after eight days in vitro differentiation, although this difference was negligible after twelve days in vitro development. Despite this change in Shh expression, we did not find striking differences in expression profiles of other key neurodevelopmental markers suggesting that inhibition of the ERK and Shh pathways alone are insufficient to differentiate dorsal from ventral midbrain in vitro.

# Toxic Effects of Ionic Liquids on Wetland and Agricultural Plant Growth

Johannah Silvius

Shavon Falcon

Jessica Wilson

Faculty Mentor: Heather Sutton

College of Science and Mathematics

Biology

An alternative to use in industry of volatile organic compounds (VOCs) is replacement of VOCs with nonvolatile liquid organic salts known as ionic liquids (ILs). ILs have low volatility, low melting points, lack of flammability, and are easily manipulated by altering their cation and anion components. ILs are not only being considered as a safer, potentially more environmental friendly alternative to VOCs, but they also have the ability to be used in a wide array of industrial applications. Although ILs have not yet been released into aquatic systems that we know of, as the use of ILs increases, so does the potential for their release.

In this study, the effects of four methylimidazolium chlorides of differing alkyl chain length (ethyl-, butyl-, hexyl-, and octyl-) were assessed with respect to the growth rates of native wetland plants (*Asclepias incarnata*, (swamp milkweed), *Actinomeris alternifolia*, (wingstem) and *Lemna gibba*, (duckweed)), and two agricultural species (*Raphanus sativus* (radish), and *Lactuca sativa* (lettuce)). The endpoints measured for all species except *L. gibba* were change in shoot and root length and final shoot and root mass; the endpoint measured for *L. gibba* was frond growth.

Alkyl chain length affected toxicity. The lowest toxicity based on IC<sub>50</sub> values in *L. gibba* occurred with the shortest alkyl chain (1-ethyl-3-methylimidazolium chloride). IL toxicity generally increased with increasing alkyl chain length. Results suggest variation in sensitivity of endpoints between the agricultural species and the native wetland species.



# Characterization of Expression Profile of the CER1 Gene and Two Regulatory Elements in Human Mesenchymal Progenitor Cells

Jacob Sloan

Faculty Mentor: Xueya Hauge

College of Science and Mathematics

Biology

Terminal deletions of the short arm of human chromosome 9 (9p-) cause mental retardation, cardiac abnormalities, abnormal genitalia, trigonocephaly and other craniofacial abnormalities. Since the first report of this deletion syndrome scientists have been searching for causative genes responsible for the abnormalities seen in affected individuals. The gene that is of most interest for understanding this complex syndrome is the cerberus 1 gene (CER1) which inhibits the activities of bone morphogenic proteins (BMPs). The inhibition may slow the ossification of sutures, allowing normal brain growth and development. A deletion of the CER1 gene or of its regulatory elements could cause a premature closure of sutures, leading to trigonocephaly. Trigonocephaly is a type of craniosynostoses which affect approximately 2000 newborns in the U.S. annually. Little is known regarding the CER1 expression profile during embryonic development in humans due to legal and ethic issues. We seek to investigate the expression profile of the CER1 gene and created a model for early embryonic bone development using pluripotent human mesenchymal progenitor cells. We cultured mesenchymal progenitor cells in the osteogenic differentiating medium for various time periods, and then isolated RNA from these cells. To quantify the gene activities of the CER1 and several important osteogenic markers, such as RUNX2 and BSP, quantitative polymerase chain reactions were performed. We also examined the regulatory functions of an enhancer and a repressor in mesenchymal progenitor cells using a dual luciferase assay. These regulatory elements were cloned from the critical region of 9p- syndrome previously by us. Enhancer clone 5008 demonstrated higher activity in the human mesenchymal progenitor cells than in adult human cell lines. Supported by CETL URCA and Incentive grants.

# Characterization of Nascent Proteome in Ischemic-Tolerant Mice Brain Using High Throughput Mass Spectrometry Technology

Ezibobiara Umejiego

Faculty Mentor: Melanie Griffin, An Zhou, Fang Bian, Tao Yang

College of Science and Mathematics

Biology

Ischemic stroke constitutes over three-fourth of stroke cases. A better understanding of the underlying mechanism of this disease is required to formulate new treatment for stroke. Previous translational research on stroke proteomes for different ischemic conditions have implicated transcription repressor protein complexes, including Polycomb group (PcG) proteins, as part of a mechanism that provides neuroprotection for ischemic tolerance. Here, we hypothesize that proteins that are newly synthesized in the inception of ischemic tolerance in mice brains are responsible for establishing the protective mechanism needed during tolerance. To test our hypothesis, we will optimize the experimental protocol used in extracting nascent proteome from surgery-induced ischemic-tolerant mice brain using Click chemistry, 1D SDS-PAGE and Western blot; characterize and quantify the nascent proteome of ischemic-tolerant brains using quantitative proteomics (LC-MS) and bioinformatics tools. Our observation may conclude that the onset of ischemic tolerance requires newly synthesized proteins. Characterization of nascent proteome could lead us to identify biomarkers in ischemic stroke brain.

# **An Efficient Way of Analyzing Hoodia Gordonii by High Performance Liquid Chromatography**

Daniel E. Bailey

Anthony Robert Haney

Faculty Mentor: Huggins Z. Msimanga

College of Science and Mathematics

Chemistry

The active component in Hoodia gordonii is a steroidal glycoside that has been shown to significantly suppress thirst and appetite. H. gordonii is currently being sold in as diet pills in amounts ranging from 1000 – 5000 mg per pill. Previous studies have shown that the active component can be quantified with high performance liquid chromatography using UV or mass spectrometry. Extractions of hoodia have involved refluxing the product in organic solvents for at least one hour. Our focus is to use alternative extraction, for example, sonication in various solvents, and determining which extract is more efficient. This approach should decrease the time spent in refluxing. Our results are reported in this work.

## How Two Groups Brought Two Polymers Together: “Click” Reactions Using a Recently Invented Linker

Matthew Booher

Faculty Mentor: Gregory Gabriel

College of Science and Mathematics

Chemistry

With Dr. Zhu’s group at Florida State University, we have proved that materials called diblock copolymers can be made fairly efficiently. Diblock copolymers have been used in a wide range of applications from selective cancer drug-delivery to magnetic nanoparticles for increasing disk drive capacity. The FSU group invented last year a unique linker that is reactive on one side of the molecule then when exposed to a reducing environment becomes reactive on the other side. The actual linking reactions have been called “Click” reactions due to how easy it is to connect two molecules. Already there has been a report that a German group clicked two strands of DNA with the FSU linker. We want to be the first team to click two polymers using this method. Our group was in charge of synthesizing and characterizing several polymers that are compatible with Click Chemistry and the first diblock copolymer made by this method will be presented in this talk.

## **Discerning Dextromethorphan from Opiates using FTIR and PCA**

Ariell Samantha Durden

Dechino Kincaid Deangel Duke

Faculty Mentor: Huggins Z. Msimanga

College of Science and Mathematics

Chemistry

Dextromethorphan (DMX) is a commonly used cough suppressant in many over the counter medications such as mucus relief tablets and cough syrup. It shows structural similarities with opiates. The abuse potential for DXM is a growing trend among adolescents, due to its ability in large doses to induce a state of intoxication similar to that of phencyclidine (PCP). The effects of DXM overdose can include confusion, agitation, impaired coordination, distortions of motion or speech, and depersonalization. Thus quick tests for its identification are needed. With available presumptuous tests, it has been found that DXM has been frequently mistaken for some opiates, maybe due to the structural similarities. The purpose of this experiment was to unambiguously compare Dextromethorphan to opiates using FTIR spectroscopy and principal component analysis (PCA). Seven samples, including DMX, were tested using a Marquis reagent to confirm ambiguity. This was followed by obtaining infrared spectra of the samples and studying their similarities via statistics (correlations, ANOVA, PCA). Taking spectra using FTIR/ATR is very quick as it needs minimum sample preparation. Comparative results are discussed in this work to indicate the distinction of DMX from opiates.

## Long-Range Effects in the Reactivity of Oligopeptides

Chelsea Harrod

Jordan Bauer

Faculty Mentor: John Haseltine

College of Science and Mathematics

Chemistry

The mammalian enzyme trypsin and the bacterial enzyme subtilisin are used by their respective organisms to break down protein molecules during digestion. Each enzyme creates extensive alignments of atomic orbitals when it binds to a protein. This implied to us the possibility of well-balanced, extensive electronics in the bound protein during the ensuing reaction mechanism. If balanced electronics do occur during enzyme action, they may also occur during non-enzymatic reactions. We are testing this idea by making some simple protein fragments and analyzing their reactivity under suitable chemical conditions.

## Synthesis of Lipid-capped Bimetallic Nanoparticles as SERS Substrate

James Law

Christina Megedyuk

Faculty Mentor: Bharat Baruah

College of Science and Mathematics

Chemistry

Bimetallic nanoparticles have been of much interest in recent years due to the unusual optical properties they possess. Metal nanoparticles have been used extensively as substrates in Surface Enhanced Raman Spectroscopy (SERS), which is useful for the detection of analytes at sub-micromolar concentrations. Surface modification of metal nanoparticles is a challenge for better accommodation of analytes. In this project, bimetallic Ag@AuNP-Citrate are synthesized and subsequently modified with 1,2-dimyristoyl-sn-glycero-3-Phosphate (DMPA) and 1,2-dimyristoyl-sn-glycero-3-phosphocholine (DMPC) to give Ag@AuNP-DMPC/DMPA. Nanoparticles were characterized and a few analytes were tested in the presence of these using UV-vis, FTIR, Fluorescence and Raman spectroscopy.

# Toward the Synthesis of Novel Bi- and Tridentate Carbenes and Their Transition Metal Complexes

Zachary McCarty

Faculty Mentor: Daniela Tapu

College of Science and Mathematics

Chemistry

The chemistry of N-heterocyclic carbenes (NHCs) is a field of intense current research. Due to their unique reactivity and structural modularity, NHCs have been employed in a broad range of applications, including as spectator ligands in catalytically active metal complexes, in organocatalysis, as components of macromolecular scaffolds, and in biologically active compounds. As a result, an impressively diverse repertoire of NHCs has been prepared and shown to form thermally stable complexes with a large number of transition metals. While attention has mainly focused on the synthesis of either monofunctional or difunctional NHCs poised for chelation to a single metal center, much less emphasis was placed on the development of multitopic NHCs that can coordinate multiple metal centers. The design and synthesis of such multitopic architectures, where each carbene center functions independently is essential to the advancement of NHC-based materials. These multitopic carbenes have the potential to function as building blocks for accessing new classes of metal-organic and covalent-organic frameworks, self-assembled materials, and multifunctional tandem catalysts. Our project targets a series of polycyclic carbenes as linkers for the stabilization of homo- and heterometallic complexes. Our specific interest in the di- and tritopic NHCs proposed here arises from the potential use of the derived bi- and multimetallic complexes as bifunctional catalysts, as well as bridging components in the emerging field of nano- and molecular electronics. The underlying objective of this project is to elucidate and to learn to exploit the interrelationship between molecular architecture, electronic structure and chemical reactivity of these novel compounds.



# The Effects of Substituents on Benzimidazolium Salts using Electrochemical Analysis

Zachary R Mccarty

Dale Eric Miles

Faculty Mentor: Huggins Z. Msimanga, Daniela Tapu

College of Science and Mathematics

Chemistry

The increased amount of attention in synthetic chemistry and catalysis given to the imidazole and its derivatives as N-heterocyclic carbene precursors has encouraged this investigation into the electronic effects inflicted by substituents on the redox profiles of a series of novel compounds. Beginning with the unsubstituted N, N'-dibutylbenzimidazolium iodine salt, the electrochemical profiles of both the mono and di-nitro and amino derivatives were acquired. Detailed information for each compound studied was acquired through the use of cyclic voltammetry, square wave voltammetry, and differential pulse voltammetry. In order to elucidate the underlying mechanism of the electrochemical reactions which the varying salts undergo, data analysis was performed and will be discussed herein.

# Isolation and Characterization of Salvinorin A from *Salvia divinorum* by use of GC-MS, FTIR, and NMR

Quinton James Meisner

Ivana Elisabeth Turner

Faculty Mentor: Huggins Z. Msimanga

College of Science and Mathematics

Chemistry

The purpose of this experiment was to extract, purify, and characterize the primary psychoactive present in the leaves of the plant currently banned from commercial sale in Georgia, *Salvia divinorum*. This plant in total contains four variants of the hallucinogen: Salvinorin A, B, C, and D, each varying by their R-groups, which contain either alcohols or ethers. However, it is thought that Salvinorin A is responsible for majority of the plants hallucinogenic properties and thus will be the focus of the study. The hallucinogenic Salvinorin A, was extracted by multiple liquid extraction methods and characterized via GC-MS to find the most efficient of the methods. Following this, the extract was subjected to column chromatography to isolate the analyte in enough bulk to permit solo characterization. The use of FTIR, NMR, and GC-MS was employed to both characterize the analyte and to assess the purity of the sample acquired from the bulk purification.

# Explorations in the Chemistry of alpha-Acylphosphonates and alpha-Hydroxyphosphonates

Joshua Parr

Robert Evans

Houman Khosrownia

Faculty Mentor: Christopher W. Alexander

College of Science and Mathematics

Chemistry

$\alpha$ -Ketophosphonates,  $\alpha$ -carbamoylphosphonates, and  $\alpha$ -hydroxyphosphonates are classes of organophosphorus compounds that have shown a wide range of biological activity and are attractive synthetic targets because derivatives of these compounds have demonstrated pharmaceutical and commercial applications. Herein, we report a summary of our efforts to develop new methodologies for the syntheses of  $\alpha$ -acylphosphonates and  $\alpha$ -hydroxyphosphonates.

# Determination of Multiple Metallic Species from a Single Sample Multi-Vitamin Using Inductively Coupled Plasma Atomic Emission Spectroscopy

Joshua Ray Parr

Steven Mathew Walschot

Faculty Mentor: Huggins Z. Msimanga

College of Science and Mathematics

Chemistry

The ability of determining multiple species of metals in a single sample is not a new concept; use of Flame Atomic Absorption Spectroscopy (FAAS) has been used previously to ascertain concentration values of several metals that can be commonly found in multi-vitamin tablets. FAAS can take several hours of interchanging element specific lamps to determine multiple metals, the rate of analysis increases with an increasing number of analytes being tested for in the sample. By using Inductively Coupled Plasma atomic emission spectroscopy (ICP-AES, ICP) multiple metals can be detected in a single sample during a single analysis. ICP utilizes one mercury lamp to aid in the detection of the metal analytes that are heated to approximately 10,000°C. The injected sample is heated to a point of total ionization, when all species are ionized and the plasma contained both positive and negative elements. From the plasma direct spectroscopic reading are taken and concentration values are determined from the spectra. A concentration range from 0 to 1000 ppm of an analyte can be achievable depending on the concentrations of standards used during calibration. In this study, CVS Daily Multiple for Men was analyzed for several metals were (Ca, Cu, K, Mg, Mn, Na, and Zn). In addition to these seven metals Ba was also tested for. Barium has been known to contaminate herbs that were grown in barium rich soil. The concentrations of the metals tested were compared to the Recommended Daily Allowances for each of the metals, and to the manufacturer concentration claims. Details of results are forthcoming.

## Water Soluble N-Confused Tetraphenylporphyrin

Pooya Salehi

Faculty Mentor: Janet Shaw

College of Science and Mathematics

Chemistry

Porphyrinic macrocycles, such as hemes and chlorophylls, have characteristics that give them the ability to harvest light and to transport small molecules. Tetraphenylporphyrin (H<sub>2</sub>TPP) is used in model studies to understand complex biological processes. Nitrogen confused tetraphenylporphyrin (NCTPP) is an isomer of H<sub>2</sub>TPP. Sulfonation of NCTPP provides a water soluble variant (ws-NCTPP) that may be used to more accurately model biological systems. The absorption spectrum of wsNCTPP is pH dependent. Both absorption intensity and wavelength change upon the addition of base and acid. Further studies on the metal chemistry and photochemistry of ws-NCTPP may lead to use in medicinal and biochemical applications.

## Water Soluble N-Confused Porphyrin

Alex Stovall

Michelle Halladay

Faculty Mentor: Janet Shaw

College of Science and Mathematics

Chemistry

Porphyrin has been studied for its interesting characteristics and applications in the fields of biology, biochemistry and medicinal chemistry. The research conducted by the Shaw group studies a variant called N-confused tetraphenylporphyrin (NCTPP). This molecule is of particular interest due to its similarity to naturally occurring porphyrinic macrocycles such as those found in vitamin B-12 and chlorophyll. Our interests primarily lie in the water-soluble variant of this molecule. In order to make NCTPP water-soluble, we have sulfonated the phenyl rings using concentrated sulfuric acid. Once sulfonated, the product was analyzed using UV visible spectroscopy and  $^1\text{H}$  NMR. The Soret band of water-soluble NCTPP is located at 454 nm at neutral pH. Additionally, a molar extinction coefficient study was performed. In order to continue our study of this molecule, a reaction was conducted using cobalt nitrate hexahydrate. This reaction was monitored using UV visible spectroscopy in order to determine whether the metal center had been inserted. Future directions of this research include additional study of the metal chemistry and possible applications in the field of photochemistry.

# Multivariate Analysis Of Dry Powder Mixtures Of Acetylsalicylic Acid And Salicylic Acid Using FTIR-ATR And Microsoft Excel

Craig Swanson

Elizabeth Heilig

Faculty Mentor: Marina Koether

College of Science and Mathematics

Chemistry

This project was an attempt to bring chemometric techniques as applied to complex spectra using dry samples and common widely used software (Microsoft Excel) into the undergraduate laboratory. Ground samples of acetylsalicylic acid and salicylic acid were analyzed using Fourier Transform Infrared Spectra between the wavelengths of 2500-4000 $\text{cm}^{-1}$ . A calibration set was created in batches of ~2 grams with respect to mass percent using a composition sequence of 0, 20, 40, 60, and 80 percent of pure salicylic acid. The powders were mixed for over 8 hours with an improvised method using horizontal stir plates. The spectra and calibration matrix were put into Microsoft Excel and the calculations were set manually. After the calculations were computed correctly, macros were developed within Microsoft Excel to automatically re-adjust the calculations for each new set of spectra. The original spectra, first derivatives, and second derivatives of the calibration spectra were analyzed using this method. Each calculation for the second derivative spectra utilizing the data from 2500-3500 $\text{cm}^{-1}$  were less than 20% error from known values. Validation sets have yet to be run.

## **Do Poppy Seeds used as Food Additives Contain Opiates?**

Ashley Elizabeth Watson

Shafaq Rizwan

Faculty Mentor: Huggins Z. Msimanga

College of Science and Mathematics

Chemistry

Poppy seed is an oilseed obtained from the opium poppy (*Papaver somniferum*). Societies across the world use poppy seeds as additives in whole bread baking, desserts and pastries, in fruit salad dressings or pancakes. Poppy seeds have always been thought to contain trace amounts of opiates such as morphine and codeine. Out of curiosity, the purpose of this project is to establish if indeed over the counter products such as Spice Island Poppy Seed contain opiates or not. The seeds were ground to a fine powder and extracted using several organic solvents. Extracts were analyzed via gas chromatography/mass spectrometry. TLC was used to try to isolate the opiates and characterize them with FTIR/ATR. Our findings using a suitable method for extraction and analysis with GC/MS are discussed in this report.



# Mathematical Models of Infectious Diseases

Morgan Atterberry

Faculty Mentor: Ana-Maria Croicu

College of Science and Mathematics

Mathematics

Mathematics is an important tool for understanding and controlling the spread of infectious diseases. Mathematical modelling of infectious diseases is increasingly being used to determine the impact of possible interventions. We will present an overview of some traditional approaches to modeling infectious disease dynamics (SI, SIR, SIRS), as well as an extension of these models.

## Nim: Perfect Play and Lucky Opponents

Min Kim

Faculty Mentor: Joe DeMaio

College of Science and Mathematics

Mathematics

Combinatorial Game Theory is a branch of applied mathematics and theoretical computer science that studies sequential games with perfect information such as chess or checkers. In this talk, we focus on the combinatorial game of Nim. The winning strategy for Nim was published by Charles Bouton in 1901. Two opponents with perfect play and the winning strategy don't need to play the game. They look at the starting position of the Nim board and point to the winner! What if only one player knows the winning strategy? This talk computes the probability that the player with perfect play will win for a randomly generated game.

# Total Domination on the Triangular Honeycomb Chessboard

Taylor Kindred

Faculty Mentor: Joe DeMaio

College of Science and Mathematics

Mathematics

How many queens are required to threaten every space on a chessboard? How many knights are required to threaten every space on a chessboard? Problems like these have long been studied. Here we investigate them in the setting of a triangular honeycomb board as defined by Konhauser, Velleman, and Wagon. The board  $T_n$  has  $n$  rows arranged in a triangle with  $i$  hexagons on row  $i$ . We define moves for the five major chess pieces on this board, maintaining the spirit of their moves on the square board.

It is common to translate this problem into graph theory where it is known as total domination. Vertices of the graph represent the squares of the board and are considered adjacent if and only if the piece in question can legally move between the corresponding squares. We end up with graphs  $Q_n$ ,  $K_n$ ,  $R_n$ ,  $B_n$ , and  $N_n$  for the queen, king, rook, bishop and knight respectively on a triangular board of side  $n$ . A set  $S \subseteq V$  is a total dominating set of a graph  $G=(V,E)$  if each vertex in  $V$  is adjacent to a vertex in  $S$ . The total domination number of a graph  $G$ ,  $\gamma_t(G)$ , is the minimum cardinality of a dominating set. In short, the total domination problem in game terms is to threaten every hexagon on the board with the fewest pieces.

## The Coupon Collector Problem

Michael M Thomas

Faculty Mentor: Anda Gadidov

College of Science and Mathematics

Mathematics

Suppose that every time you purchase a box of cereal from a certain manufacturer, there is a coupon inside the box. A complete collection of coupons has 'm' different coupons, each being found with different probabilities inside the cereal boxes. How many purchases are required, on average, in order to get a complete collection? How many for two collections? We answer the one-collection problem for any 'm' and the two-collection question when the collection has two or three coupons. We will also show that the minimum expected number of purchases is achieved when the coupons are uniformly distributed into the boxes. We check the theoretical results through simulations for both one and two collections.

# Technology Enhances Learning of Typography: Interactive eBook

Daniela Dewendt

Emily Seed

Greg Thye

Faculty Mentor: Kristine Hwang

College of the Arts

Art

Mobile technology enhances learning by providing interaction and extensive experiences. eBooks have been widely published since they have been available on tablet devices such as the Kindle, the Nook, and the iPad. People purchase eBooks more often than hardcopy textbooks because they are less expensive, lighter, more environmentally friendly, and takes less space. This paper provides significant information on how to research a powerful and dynamic design, how to create an interactive eBook for effective learning, and how to produce a creative work — an interactive eBook of "type anatomy". Type anatomy is chosen for producing an eBook because it is a very important element in the typography of graphic design field. The research and creative work focus on the influence of technology on the learning of type anatomy, particularly the interactive eBook on mobile devices because it has been on the rise in the higher education environment. In the graphic design field, research is an integral factor in the process of project development. For this particular project, the methodical research approach will be implemented. The team research opportunity enhances the students' collaborative research and teamwork skills, which are essential for producing creative works. The team members do not only encourage and motivate each other, but they also generate creative ideas and solutions more effectively in a group setting. All necessary content are to be collected, analyzed, and organized for creation of a beneficial and interactive eBook. Contents of the interactive eBook on type anatomy are to be nonlinear and delivered with various digital media, so that learners have extensive learning experiences at their own learning paces and without losing their curiosity. Creative design thinking and the effective development process of an interactive eBook will be also introduced in this poster.

## Your Typeface Based on Your Personality

Debbie Hampe

Selina Walker

Faculty Mentor: Kristine Hwang

College of the Arts

Art

Fonts express friendliness, elegance, sophistication, fun, excitement, seriousness, calmness, tradition, feminine, sleekness, masculinity, and assertiveness that are related to personality. Type designers say that an individual's personality could be decoded into typeface. Characteristics of typeface are also described as personality features. This research focuses on a literature review of the personality of typeface, discovery of an individual's personality by preference of typeface, and matching typeface to an individual's personality. Based on this research and understanding of typeface and personality, fun and interesting interactive personality quizzes are created for the iPhone, that is a very popular mobile device in the current market. This discusses a literary review of various research methods, the personality of typeface, the interactive design of the new mobile technology, the creation of fun and interactive personality quizzes, and the process of iPhone app development.

# Hybridization and Nabataean Identity in the Khazneh Facade at Petra

Lauren Bearden

Faculty Mentor: Kristen Seaman

College of the Arts

Art History

Ancient Petra's rock-cut facades, situated in modern-day Jordan, are undoubtedly works of advanced artistic style that display both Greek and Near Eastern elements. Petra was inhabited by the mercantile Nabataeans as early as 312 BCE. It was located at the cross-roads among Egypt, Greece, Rome, and the Near East. This convergence of cultures brought transference of not only goods but also artistic styles. The best artistic example of this cultural exchange is the Khazneh, a rock-cut façade dated to the 1st Century BCE by scholar Judith McKenzie. The most probable Nabataean King associated with the Khazneh is Aretas IV Philopatres. Under his rule from 9BCE to 40CE, the Nabataeans thrived economically and often warred with neighbors. Previous scholars have focused on the Graeco-Roman aspects of the Khazneh façade and often overlooked the elements of native Nabataean style. Therefore, the Nabataean components of the Khazneh are not well defined. In this paper, I clarify what Nabataean style is by exploring the hybridization in the Khazneh façade. To understand Nabataean style, I compare aspects of the Khazneh's ornamentation with similar forms found in ceramics and painting. The paintings' subjects include local fauna and a winged child and his flute. I argue that such images exhibit some artistic qualities that are solely Nabataean. I suggest that, once these artistic qualities are recognized and defined, they become evident throughout much of the Khazneh's sculptural artistry. Moreover, scholars have had difficulty coming to terms with the dichotomy between aniconism and figural representation in Nabataean art. To reconcile these elements, I argue that aspects of aniconic Djinn and baetyl blocks are present in the ornate Nabataean rock-cut facades. I then compare Petra's architecture with a similar set of Nabataean facades, dated to the 1st Century CE, along the East Ridge of the Wadi Musa. I demonstrate that Graeco-Nabataean hybrid art helped to construct Nabataean culture. To conclude, I offer a re-examination of Nabataean art as a sub-category of Hellenistic art. From this understanding of Nabataean aesthetics, a greater sense of Nabataean identity and artistic influence emerges.

## **“In Other Words, I Am Three”: Analyzing The Black Saint and the Sinner Lady as an Extension of Mingus’ Psyche**

Zachary Evans

Faculty Mentor: Edward Eanes

College of the Arts

Music Performance

“The Black Saint and the Sinner Lady,” a ballet with no established choreography, is Charles Mingus’ magnum opus: an emotionally raw and deeply personal work that presents a self-portrait of the composer’s psyche. To fully comprehend “The Black Saint and the Sinner Lady,” one must have an idea about who the composer was, which, in regards to Mingus specifically, is a problematic task. Famously known as “the angry-man in jazz,” Mingus is a difficult man to comprehend. The first phrase in his autobiography, *Beneath the Underdog*, is “in other words, I am three.” Mingus saw within himself in three distinct identities: a peaceful yet naïve artist, a defensive and aggressive “frightened animal”, and a non-invested and passive observer. By analyzing “The Black Saint and the Sinner Lady” as an expression of this psychological triality, it becomes apparent that the piece represents a focal point in Mingus’ life. The music is an auditory representation of the inherent conflict within Mingus and the meeting place between his past and future, his internal and external worlds.



## The Uniqueness of Felix Mendelssohn's Life

Joshua Martin

Faculty Mentor: Edward Eanes

College of the Arts

Music Performance

The Romantic composer Felix Mendelssohn has been regarded as a musical eccentric because of his predominantly Classical writing in a progressing Romantic movement, but his uniquely consistent beliefs and lifestyle also pit him against the majority of established composers of his day, from Schubert to Paganini. The lives of Mendelssohn and three characteristic Romantic contemporaries — Berlioz, Wagner, and Liszt — are compared along the criteria of professed beliefs and lifestyle. Representative qualities such as professed faith, moral character, financial life, and relational life (marriages, affairs) are examined to acquire a balanced perspective of each representative. Through careful analysis, it is apparent that Mendelssohn's Christian convictions informed his upright and pure life, whereas other Romantics generally embraced embellished creeds or lead lives of immorality, often contrary to the faith they professed.

## Shakespeare's Objectives

Meagan Dilworth

Zachary Bromberg

Faculty Mentor: Jane Barnette

College of the Arts

Theatre and Performance Studies

In this presentation, Dilworth and Bromberg will present research regarding scholarly debates in Shakespeare performance studies. Specifically, Dilworth will present her paper, "Taming Shakespeare: Laughable or Insulting?" and Bromberg will present "Caliban: Demon Spawn or Pitiful Clod?" Both of these papers are highlights of the bi-annual Chautauqua/Colloquium series organized by Dr. Barnette (Theatre & Performance Studies), wherein undergraduate scholar-artists research a topic of their choice and present their findings about an area of disagreement.

## **A Work of Art**

Anterior Leverett

Faculty Mentor: Margaret Baldwin, Karen Robinson, Jamie Bullins

College of the Arts

Theatre and Performance Studies

“A Work of Art” is an original adaptation of Anton Chekhov’s short story “The Objet d’Art,” which is the farcical tale of an erotic candelabrum that is being passed between four men who find themselves attracted to it while—at the same time—they try to get rid of it. This adaptation by Theatre and Performance Studies junior Anterior Leverett was a short play included in the evening-length theatre work *In the Twilight: Chekhov Stories Retold*, directed by Karen Robinson and Margaret Baldwin and produced at KSU’s Onyx Theater, March 19-24, as a part of the Department of Theatre & Performance Studies’ 2012-2013 season. Leverett was assigned the task of adapting “The Objet d’Art” in January of 2013 to complement adaptations of Chekhov’s short fiction by Professor Baldwin and guest playwright Valetta Anderson of Atlanta.

After hearing suggestions from both Professor Baldwin and director Karen Robinson, Interim Chair of the Department of Theatre and Performance Studies, I decided to allow my voice to come through in the writing of my second draft. I then decided that the candelabra would not only have its own voice, but that its voice would be created by five women. This changed the dynamic of the story completely; the candelabrum was now free to have its own story. I continued to write drafts of the play, finally ending with draft number six. In the process of writing I was influenced by the cast and the directors and their different ideas for staging the story. In rehearsals I watched the cast use their bodies to make up a candelabrum; this fueled my desire to incorporate a choral element in the speech of the women portraying the candelabra. The piece no longer only revolved around the need to dispose of an “object” of art, but shed light on the idea of the male gaze and the authority that women have over men. The integration of the movement with my written text added a layer of sensuality and complexity that I not only appreciated in the moment, but I will always remember.

## Creating Dramaturgical Lobby Displays: CABARET & BUS STOP

Houston McArthur

Jaime Melvin

Faculty Mentor: Jane Barnette, Dean Adams, Harrison Long

College of the Arts

Theatre and Performance Studies

One of the important tasks of dramaturgy is audience outreach, and in this presentation two student dramaturgs will discuss their approaches to creating a visually compelling set of slides to accompany two mainstage KSU productions, *Cabaret* (directed by Dean Adams in the fall semester 2012) and *Bus Stop* (directed by Harrison Long in the spring semester 2013). Melvin will discuss her research into the historical setting of *Cabaret*, the 1972 film version starring Liza Minnelli, and the 1998 Sam Mendes/Rob Marshall Broadway revival. McArthur will discuss his research into the artwork of Edward Hopper and its connection to William Inge's realist drama, 1950s gender roles, and recent creative approaches to "queering" Inge's shorter plays.

# Differences of Opinion Concerning Bioethics among Kennesaw State University Undergraduates

Danielle Ereddia

Melissa Kramschuster

Leslie Brown

Faculty Mentor: Amy Buddie, Ken Hill, Phillip Poskus

University College

First Year Experience Programs

This research study was conducted to establish the cultural perceptions concerning biotechnology among undergraduate students at Kennesaw State University which will be compared to data from Brazilian undergraduates in the future. Topics addressed include lengthening of the lifespan using genetic modification, cloning, "designer babies," nanotechnology in medicine, genetically modified foods, and human embryo modification.

There were a total of 118 participants; 81.4% were female and 11.9% were males. Of the participants, 12.7% were urban, 60.2% were suburban, and 20.3% were rural. The survey was an online study taken by undergraduates in general psychology classes and took approximately 10 minutes to complete. The questions asked about ethical concerns of genetically modified organisms and included a Likert scale with five possible choices ranging from very unethical to very ethical. Other questions asked whether or not they have concerns about genetic modification and what specifically those concerns are.

Overall, we found no significant differences among Kennesaw State University students regarding their beliefs on genetic modifications and biotechnology in relation to their majors or genders. This applies to rural, urban, and suburban populations as well, with one exception: Rural residents in Kennesaw showed a marginally significant (sig .051) inclination to consider genetic modifications used to decrease birth defects in babies as unethical.

This data was surprising considering our expectations for a greater amount of variance among the answers of Kennesaw undergraduates due to differing genders and majors, which would lend themselves to various belief systems. Future research endeavors include a comparison of this data to students at Heli Rocha College in Salvador, Brazil. We expect to find a greater difference in beliefs on biotechnology when this data is compared to survey answers from Brazilian undergraduates.

# College Students' Attitudes Toward Economic Integration

James Hamill

Timothy Rucker

Faculty Mentor: Amy Buddie, Ken Hill, Phillip Poskus

University College

First Year Experience Programs

The purpose of this research was to examine American college students' attitudes toward economic integration. A total of 110 students were recruited to participate in this online study through introductory psychology courses. Of the questions on the survey, five pertained to economics. The questions asked what technology the students had available, how they viewed the impact of foreign imports on their country, and how they viewed the government's impact on the economy.

Our research found that students as a whole generally had similar views regardless of demographic differences. The students generally held a positive view towards their country's economic activities. Topics ranging from foreign investment to the development of the Brazilian economy were seen as positive factors in the economic growth of the country. The only question with significant variation in response involved the view of Brazilian governmental intervention in the economy. Noticeable variations could be seen between different ethnicities as well as differing political views.

We found the results to be consistent with our hypotheses on the topics. Generally economic growth is viewed favorably by all of the involved parties, and this case was no exception. The fact that political affiliation led to differences in responses towards the topic of government intervention is also consistent with our hypothesis. The differences between ethnic groups and their view of the government was the only result that was different from our hypothesis. Future research into the reasons behind these differences would be beneficial.

# College Students' Attitudes Toward Population Growth and Migration

Heather Jumper

Lea Addington

Kymerly Whitehall

Faculty Mentor: Amy Buddie, Ken Hill, Phillip Poskus

University College

First Year Experience Programs

It is evident that population growth and migration will affect the people in the United States. Resources will become scarce and as a result people will become more competitive and conflict will arise due to the lack of job and resource availability in second and third world countries. More people will begin to migrate towards first world countries, and this shift, especially among educated youth, will increase competition in the work force. With higher fertility rates in poorer countries, they will not be able to handle the rapidity of the population's growth leading them to megacities in first world countries--leading to overall conflict within different countries.

The purpose of the present study was to examine students' attitudes toward these issues. We recruited students from Kennesaw State University to complete our online survey. The research questions related to population and how population growth will affect the future work force and conflict within countries. We asked five questions that were answered using a Likert scale from 1 (strongly disagree) to 7 (strongly agree). There were a total of 118 participants but only 110 actually completed the survey. 87.3% of the participants were female and 12.7% were male.

Results showed that there was a significant difference between younger and older students in terms of youth from other countries increasing competition in the work force. The younger students saw this as more of an issue than the older ones did. There was another significant difference between races; more minority students believed that first- and second-world countries should help the developing world. There were not any significant differences in terms of hometown size (urban, suburban, rural) and their views on population growth.

Our results surprised us in that there was no significant difference pertaining to the size of the participant's hometown. We expected this to influence the participant's opinion on population growth and how it would affect work force competition and conflict. In the future we would like to expand this research to developing countries such as Brazil as their populations start to rise and compare the results to that of what we found here at Kennesaw.

## College Students' Use of Information Technology

Rachel Martini

Sydney Green

Jasmine Gipson

Faculty Mentor: Amy Buddie, Ken Hill, Phillip Poskus

University College

First Year Experience Programs

This research explores the importance of information technology in connecting the world. Approximately 100 students from Kennesaw State University completed an online survey concerning their personal use of technology as well as demographic questions. The results from the completed survey have provided us insight on the importance that college students place on information technology. We hypothesized that Kennesaw State students would find technology to be a very important and large part of their lives and consume a large amount of their time as well as being a gateway to getting schoolwork done. In our results, we found that most students were exposed to technology at a young age and that the majority of the participants placed a great importance on the technology in their daily lives. In the future, we would like to expand our research to other colleges in the United States, or even in other countries varying in access to technology.



## Clean Energy: How Knowledgeable are Students?

Shannon O'Dell

Claire Bohrer

Sara Knapp

Faculty Mentor: Amy Buddie, Ken Hill, Phillip Poskus

University College

First Year Experience Programs

Since the twentieth century, the world's population has nearly doubled, leaving crucial resources – such as food, water, and fossil fuels – priorities that are slowly running out. This dilemma has started what is now referred to as the “energy revolution”, which is the high demand for new, reusable, clean energy sources in a world where fossil fuels are running out. In this study, a survey was conducted in an existing world power - the United States – to identify the trends in the knowledge and opinions of the countries' people on their governments' efforts to research, develop, and promote clean energy. Out of the 110 participants from Psychology 1101 classes, there were 96 women and 14 men. In this same sample group, 90 of the participants were between the ages of 17 and 22, while 19 of the participants were 23 years old and above. Our survey questions were part of a larger survey conducted by the President's Emerging Global Scholars leadership group. Our questions revolved around the students' opinions on clean energy. These questions were answered in an online survey that took approximately 10-15 minutes.

Our results showed that on average, most students were neutral on whether or not they were informed of the efforts of the US to invest and research clean energy. Students also averaged to slightly agree that our country needs to invest in clean energy. The students slightly disagreed that relying on fossil fuels for energy will not be a problem over the next decade. On the issue of collaboration with other countries to create new forms of energy, students averaged to slightly agree with this statement. On average, students slightly disagreed that the US is currently doing enough to combat energy problems.

Based on our results, we have concluded that more needs to be done to inform citizens about and promote clean energy. In our KSU 1111 class, we learned a great deal about what people actually know about resource management. We saw in our study that people do not understand the severity of this issue. In the future, we will be gathering the same information from students in Brazil. This will allow us to compare the two countries on the issue of attitudes toward and knowledge about clean energy.

## Governance in a Globalized World

Liza Stepat

Juergie Landstrom

Christen Barnes

Faculty Mentor: Amy Buddie, Ken Hill, Phillip Poskus

University College

First Year Experience Programs

Governance is an important issue in our nation today, especially for the younger members of society who will soon be the majority of the voting population. As college-aged students cast their first-ever ballot, curiosity is sparked even before the polling booths. "Do students feel they have a voice in government?" We compiled a survey in hopes of answering this question. We created five questions on governance: three about voting, one about student involvement on campus, and one about NGOs and their impact. We also included five demographic questions such as participants' gender and age. Our hope was to find evidence that most students want to bring about change and do feel capable of somehow becoming involved in government. The survey was available to students online and took about ten minutes to complete. Using the responses of 118 psychology students at KSU, we were able to see their level of perceived involvement. Participants answered that many of their fellow students were heavily involved in government, whether through voting in a national election or through involvement with student organizations on campus. The overall response reflected students' desire to see change and yet with a contentment with their current involvement and that of other students. According to our research, however, this college age group (18-29) has the lowest turnout for elections and the like. With this knowledge, we can seek to show students simple ways in which they can be more involved in national, local, and even student government. If we were to continue in this research, we would be interested to find out exactly where students are turning for their government information and updates, and whether or not they feel there are many opportunities offered for them to be further involved.

## **Primer Design for Population Genetics Studies on Beaked Dodder (*Cuscuta Rostrata*)**

Gaius Augustus

Faculty Mentor: Joel McNeal

University College

Interdisciplinary Studies

*Cuscuta rostrata*, a species of parasitic vine native to the United States, has a high elevation, southern Appalachian distribution indicative of a glacial relict species, with the southernmost extent being in the Blue Ridge Mountains of northern Georgia. Most Georgia populations, despite the availability of suitable hosts, have small population sizes and often exhibit low seed set, low seed viability, and susceptibility to insect pests such as aphids. To explore the genetic structure and population genetics of the species at the southern end of its population, microsatellite loci were identified using existing transcriptome data. These primers were tested on 54 individuals across 6 Georgia populations. Three loci thus far have shown variability among individuals both within and across populations with multiple alleles shared across populations. As additional loci are added, we hope to gain a better understanding of how populations of primary consumers stranded in scattered, isolated islands of habitat are likely to react to future climate change.

# Nonprofit Website Research: An Applied Research Project for the Jane Fonda Center

Shenell Ramos

Faculty Mentor: Jennifer Wade-Berg

WellStar College of Health and Human Services

Human Services

Websites are becoming increasingly vital marketing tools for nonprofit organizations. Often, websites provide nonprofit organizations with the increased visibility that can lead to a broader donor base, increased sustainability, and enhanced performance. They also allow stakeholders access to the inner workings of an organization. A nonprofit's website may be the first point of contact for individuals unfamiliar with its mission, services, and community impact. Therefore websites should be clear, transparent, and informative. The purpose of this applied research project is to help the Jane Fonda Center (housed at Emory University) to conform to best practices for nonprofit websites. Qualitative methods, in the form of a content review of nonprofit websites and key informant interviews, were used to support the recommendations for updating the website. A review of the literature was also conducted. The updated website will ultimately increase organizational performance and advance their mission to advance scientific knowledge about adolescence to disseminate information and strategies for risk reduction and healthy transitions of adolescents into adulthood.

## **Retirees as a Donor Base: An Applied Research Project for the KSU Foundation's Retirees Association**

Anna Webb

Faculty Mentor: Jennifer Wade-Berg

WellStar College of Health and Human Services

Human Services

The KSU Foundation houses a program entitled the KSU Retirees Association that exists to keep faculty and staff retirees connected to the University. However, there is a paucity of research on the effectiveness of such programs and how they can ultimately be used to cultivate a new set of donors. The following applied learning project was conducted for the KSU Retirees Association. The purpose of the project was to conduct a literature review on the cultivation and stewardship of retirees as a donor base. The project deliverable was an event manual that provided a step-by-step 10-month planning process the Years of Service and Retirement Ceremony. This manual offers future employees and interns of this program and the KSU Foundation with a comprehensive guide for the preparation of the Ceremony in years to come.

# POSTER PLACEMENT ASSIGNMENT

**1:** *Teaching Creative Arts Using Children's Literature: Woodblock Printing Techniques and Using Pencils by Erin Stead*

Emily Williamson

Faculty Mentor: Yanghee Kim

**2:** *The Significance of "I" in Brain Computer Interfaces*

Lisa Sapp

Faculty Mentor: Adriane Randolph

**3:** *Perceptions of Faculty Mentors of Undergraduate Research*

Lisa Sapp, Shavon Trice

Faculty Mentor: Amy Buddie

**4:** *Finding the Path of Heroes: Creating Stories in a Fantasy Role Playing Setting*

Duncan Balinger

Faculty Mentor: Brandon Lundy

**5:** *Man or Mountain? Comparing Constructed and Geographic Defenses in Rajasthan India*

Duncan Balinger

Faculty Mentor: Teresa Raczek

**6:** *Defining Deafness: A Look at the American Sign Language Club at Kennesaw State University*

Mollie Gilstrap

Faculty Mentor: Brandon Lundy

**7:** *Environmental Assessment of Vineyard Mountain Trail, Allatoona Dam Army Corps of Engineers Land*

Olivia Pisano

Faculty Mentor: Wayne Van Horne

**8:** *Forensic Anthropology and Genetics: A Discussion of Variation and Holistic Approaches to the Medico-Legal Discipline*

Kelci Ragsdale

Faculty Mentor: Susan Kirkpatrik Smith

**9:** *Reciprocity of Informal Education in a Museum Setting*

Samantha Roberts

Faculty Mentor: Brandon Lundy

**10:** *Population Correlation: Archaeological Site Size in the Mewar Plain, India*

Caitlin Syfrett

Faculty Mentor: Teresa Raczek

**11:** *How mitochondrial DNA is used within Anthropology to Trace Human Migration Patterns and Detect Genetic Variation among Homo sapiens*

April Tolley

Faculty Mentor: Susan Kirkpatrik Smith

**12:** *The Reconstruction of Tree Species Composition of Presettlement Forests Using GIS Feature Extraction of Historic Land Survey Plats*

William Gavin

Faculty Mentor: Wayne Van Horne

**13:** *Student Engagement in Campus Environmental Activism*

Michelle Allen

Faculty Mentor: Lynn Patterson

**14:** *Greening Economic Development in Georgia?*

Nick Davenport

Faculty Mentor: Lynn Patterson

**15:** *Sap flow for Select Tree Species in a Forest Patch at Kennesaw State University, GA*

Anthony Starks, Muhammad Mughal

Faculty Mentor: Paula Jackson, Mario Giraldo

**16:** *Beyond Secession: Examining the Full Spectrum of Ethnic Autonomy Demands*

Jason Gress

Faculty Mentor: Tavishi Bhasin

**17:** *The Theme of Poverty in "La siesta del martes" by García Márquez and "Paso del Norte" by Juan Rulfo*

Hector Gutiérrez

Faculty Mentor: June Laval

**18:** *Masacres y mentiras en dos obras hispanoamericanas*

Scott Lee

Faculty Mentor: June Laval

**19:** *The "Cacique" As Protagonist in Three Latin American Short Stories*

Cynthia Tatis

Faculty Mentor: June Laval

**20:** *Miracles and Hypocrisy in "Talpa" and "Anacleto Morones" by Juan Rulfo*

Jessica Vaquera

Faculty Mentor: June Laval

**21:** *Exercise Behaviors and College Students: Locus of Control, Planning, and Participation in Fitness*

Katherine Arce

Faculty Mentor: Nicole Martin

**22:** *Clarifying the Relationship between Stress and Decision Making*

Kelley Campbell, Elizabeth Williams, Karen Maddox, James Turner, Melony Parkhurst

Faculty Mentor: Adrienne Williamson

**23:** *Relationship Closeness and Blame Taking: How Good of a Friend Are You?*

Fielding Etheridge, Jennifer Brooks

Faculty Mentor: Jennifer Willard

**24:** *Undergraduate Research Experiences and Critical Thinking in First-Year Students*

Brian Ginburg

Faculty Mentor: Amy Buddie

**25:** *Short and Long-Term Benefits of a Circus Arts Therapy Program*

Tommy Gonter, Bria Cantrell, Whitney Warren

Faculty Mentor: Lauren Taglialatela

**26:** *An Evaluative Reflection of a Global Engagement Project for Learning Community Students*

Madison Hanscom, Justin Hoenstine, Rebecca Powers

Faculty Mentor: Gail Scott

**27:** *Sociosexuality, Susceptibility to Rape Myths, and Perceived Aggression Regarding Rape*

Madison Hanscom, Helen Spence, Ashley Sellers

Faculty Mentor: Gail Scott



**28:** *Faculty Barriers for Supervising Undergraduate Researchers: The Perceptions of Non-Mentors*

Scarlet Hernandez, Mary Scannavino, Stephen Ajetomobi

Faculty Mentor: Amy Buddie

**29:** *Attitudes Toward Repeated Unwanted Contact*

Alexandra Knight, Alyssa Varhol, Samantha Rowell

Faculty Mentor: Corinne McNamara

**30:** *Affect Specificity of Positively- and Negatively-Valenced Emotions in Infancy*

Lindey Maza, Savannah McGrath, Amber Phelps

Faculty Mentor: Nicole Martin

**31:** *Effects of Mentoring on Self-Concept in Adults*

Jennifer Smith

Faculty Mentor: Gail Scott

**32:** *Cultural Differences in Self-Concept Between Orphaned Adolescents in Kenya and Lower Socioeconomic Status Adolescents in the U.S.*

Kizmat Tention

Faculty Mentor: Gail Scott

**33:** *AID Atlanta: Qualitative vs. Quantitative Program Evaluation*

Benjamin Tippens

Faculty Mentor: Christine Ziegler

**34:** *Prevalence and Perception of Mental Health at KSU*

Ken Trickey, Courtney Collins, Darya Sipeykina

Faculty Mentor: Daniel Rogers

**35:** *Intro to Psychology: The Effects of Study Groups on Exam Scores and General Self Efficacy Scores*

Allison Venoy, Elizabeth Grissom, William Colombo

Faculty Mentor: Gail Scott

**36:** *The Relationship between Mood and Eating Styles in Response to Food Cues*

Melodi Zhan-Moodie, Lindey Maza

Faculty Mentor: Sharon Pearcey

**37:** *Food Craving Behaviors by Students*

Creg Zierler

Faculty Mentor: Lauren Tagliatela

**38:** *ABCB1 Expression in Adrenocortical Cells is Uniquely Regulated Compared to Other Cell Types*

Christopher Raymond

Faculty Mentor: Jennifer Powers

**39:** *The Effect of Ar Tagging on the H5O2+ Protonated Water Cluster*

Andrew Shatz, Deborah Adedeji

Faculty Mentor: Martina Kaledin

**40:** *Ab Initio Study of Uracil: An Introduction to Computational Chemistry Methods*

Andrew Shatz, Deborah Adedeji

Faculty Mentor: Martina Kaledin

**41:** *Similarity Networks Reveal Relationships Among Sequence, Function, and Structure Within the Cupin Superfamily of Proteins*

Richard Uberto

Faculty Mentor: Ellen Moomaw

**42:** *Delineation of Genetic Variation in Wood Frogs (*Lithobates sylvaticus*) near a Northern Edge of Distribution*

Lucianna Araujo

Faculty Mentor: Thomas McElroy

**43:** *Building an Interactome: Identifying Novel Akirin-Interacting Factors*

Aayushi Bhagwanji, Meghan Troutt, Shelby Johnston

Faculty Mentor: Scott Nowak

**44:** *Survival Response to *Echis Carinatus* Venom in Human Umbilical Vein Endothelial Cells*

Veronica Garbar, Chelsea Beard, Taniesha Smith

Faculty Mentor: Eric Albrecht

**45:** *Characterization of Gene Expression in Stem Cell Derived Neuroblasts*

Christina Homer, Mohamed Zaidi, Katie Bales

Faculty Mentor: Martin Hudson

**46:** *Understanding the Role of EphA7 in Neuroblast Cell Division*

Amelia King

Faculty Mentor: Martin Hudson

**47:** *Modeling Dorsal Midbrain Neurogenesis In Vitro*

Colin King, Teresa Smith

Faculty Mentor: Martin Hudson

**48:** *Toxic Effects of Ionic Liquids on Wetland and Agricultural Plant Growth*

Johannah Silvius, Shavon Falcon, Jessica Wilson

Faculty Mentor: Heather Sutton

**49:** *Characterization of Expression Profile of the CER1 Gene and Two Regulatory Elements in Human Mesenchymal Progenitor Cells*

Jacob Sloan

Faculty Mentor: Xueya Hauge

**50:** *Characterization of Nascent Proteome in Ischemic-Tolerant Mice Brain Using High Throughput Mass Spectrometry Technology*

Ezibobiara Umejiego

Faculty Mentor: Melanie Griffin, An Zhou, Fang Bian, Tao Yang

**51:** *An Efficient Way of Analyzing Hoodia Gordonii by High Performance Liquid Chromatography*

Daniel E. Bailey, Anthony Robert Haney

Faculty Mentor: Huggins Z. Msimanga

**52:** *Discerning Dextromethorphan from Opiates using FTIR and PCA*

Ariell Samantha Durden, Dechino Kincaid Deangel Duke

Faculty Mentor: Huggins Z. Msimanga

**53:** *Long-Range Effects in the Reactivity of Oligopeptides*

Chelsea Harrod, Jordan Bauer

Faculty Mentor: John Haseltine

**54:** *Synthesis of Lipid-capped Bimetallic Nanoparticles as SERS Substrate*

James Law, Christina Megedyuk

Faculty Mentor: Bharat Baruah

**55:** *Toward the Synthesis of Novel Bi- and Tridentate Carbenes and Their Transition Metal Complexes*

Zachary McCarty

Faculty Mentor: Daniela Tapu

**56:** *The Effects of Substituents on Benzimidazolium Salts using Electrochemical Analysis*

Zachary McCarty, Dale Eric Miles

Faculty Mentor: Huggins Z. Msimanga, Daniela Tapu

**57:** *Isolation and Characterization of Salvinatorin A from Salvia divinorum by use of GC-MS, FTIR, and NMR*

Quinton James Meisner, Ivana Elizabeth Turner

Faculty Mentor: Huggins Z. Msimanga

**58:** *Explorations in the Chemistry of alpha-Acylphosphonates and alpha-Hydroxyphosphonates*

Joshua Parr, Robert Evans, Houman Khosrownia

Faculty Mentor: Christopher W. Alexander

**59:** *Determination of Multiple Metallic Species from a Single Sample Multi-Vitamin Using Inductively Coupled Plasma Atomic Emission Spectroscopy*

Joshua Parr, Steven Matthew Walschot

Faculty Mentor: Huggins Z. Msimanga

**60:** *Water Soluble N-Confused Porphyrin*

Alex Stovall, Michelle Halladay

Faculty Mentor: Janet Shaw

**61:** *Do Poppy Seeds used as Food Additives Contain Opiates?*

Ashley Elizabeth Watson, Shafaq Rizwan

Faculty Mentor: Huggins Z. Msimanga

**62:** *Mathematical Models of Infectious Diseases*

Morgan Atterberry

Faculty Mentor: Ana-Maria Croicu

**63:** *Technology Enhances Learning of Typography: Interactive eBook*

Daniela Dewendt, Emily Seed, Greg Thye

Faculty Mentor: Kristine Hwang

**64:** *Your Typeface Based on Your Personality*

Debbie Hampe, Selina Walker

Faculty Mentor: Kristine Hwang

- 65:** *Differences of Opinion Concerning Bioethics among Kennesaw State University Undergraduates*  
Danielle Ereddia, Melissa Kramschuster, Leslie Brown  
Faculty Mentor: Amy Buddie, Ken Hill, Phillip Poskus
- 66:** *College Students' Attitudes Toward Economic Integration*  
James Hamill, Timothy Rucker  
Faculty Mentor: Amy Buddie, Ken Hill, Phillip Poskus
- 67:** *College Students' Attitudes Toward Population Growth and Migration*  
Heather Jumper, Lea Addington, Kymberly Whitehall  
Faculty Mentor: Amy Buddie, Ken Hill, Phillip Poskus
- 68:** *College Students' Use of Information Technology*  
Rachel Martini, Sydney Green, Jasmine Gipson  
Faculty Mentor: Amy Buddie, Ken Hill, Phillip Poskus
- 69:** *Clean Energy: How Knowledgeable are Students?*  
Shannon O'Dell, Claire Bohrer, Sara Knapp  
Faculty Mentor: Amy Buddie, Ken Hill, Phillip Poskus
- 70:** *Governance in a Globalized World*  
Liza Stepat, Juergie Landstrom, Christen Barnes  
Faculty Mentor: Amy Buddie, Ken Hill, Phillip Poskus
- 71:** *Primer Design for Population Genetics Studies on Beaked Dodder (Cuscuta Rostrata)*  
Gaius Augustus  
Faculty Mentor: Joel McNeal
- 72:** *Nonprofit Website Research: An Applied Research Project for the Jane Fonda Center*  
Shenell Ramos  
Faculty Mentor: Jennifer Wade-Berg
- 73:** *Retirees as a Donor Base: An Applied Research Project for the KSU Foundation's Retirees Association*  
Anna Webb  
Faculty Mentor: Jennifer Wade-Berg

# ORAL PRESENTATION SCHEDULE

**Convocation Center, Room 1054**  
**Humanities and Social Sciences, Business**

**6:15pm - 6:30pm**

*Children of the Uruguayan Diaspora: Negotiating Identities of the South in the North*

Paola Garcia

Faculty Mentor: Debarati Sen

**6:30pm - 6:45pm**

*Creative Spaces*

Ryan Gibson

Faculty Mentor: Donna Merrell

**6:45pm - 7:00pm**

*Do the Right Thing: The Impact of INGO Legitimacy Standards on Stakeholder Input in INGO Activities*

Max Harris

Faculty Mentor: Christopher Pallas

**7:00pm - 7:15pm**

*The State of the Iron Lady: Female Prime Ministers and their Socio-Military Policies, 1960-2010*

Plamen Mavrov

Faculty Mentor: Amir Azarvan

**7:15pm - 7:30pm**

*We Fight, Therefore We Are: A Twofold Analysis of Menachem Begin, the Patriarchal Pedagogue of Modern Terrorism*

Plamen Mavrov

Faculty Mentor: John Moran

**7:30pm - 7:45pm**

*Promising Days in Ghana: Policy Recommendations to Address Ghana's Burgeoning Petroleum Sector*

Sumi Moon, Plamen Mavrov, Justin Rivard

Faculty Mentor: Nurudeen Akinyemi

**7:45pm - 8:00pm**

*LOL KOREA*

Sangwook Ham, Jae Euk Yoo, Jasmine Wright

Faculty Mentor: Kristine Hwang, Yanghee Kim

**Convocation Center, Room 1055**  
**Humanities and Social Sciences**

**6:15pm - 6:30pm**

*An Organizational Culture Analysis of the Consulate of Brazil*

Natalia Cabral

Faculty Mentor: Audrey Allison

**6:30pm - 6:45pm**

*Fourteenth Century Female Stigmas in Troilus and Criseyde*

Natalie Chambers

Faculty Mentor: Chris Palmer

**6:45pm - 7:00pm**

*Yeats, Hanrahan, and Something In-Between*

Tracey Cordle

Faculty Mentor: Jane Barnette, John Gentile

**7:00pm - 7:15pm**

*An Escape from Reality, or the Reality of Escape*

Chris Glosson

Faculty Mentor: Linda Stewart

**7:15pm - 7:30pm**

*Cave Spring Oral History Project*

Sharifa Potter

Faculty Mentor: Julia Brock

**7:30pm - 7:45pm**

*Summaries of German Studies Research: Three Senior Seminar Projects*

Caleb Russo, Eric Naugle, Cherlee Rohling

Faculty Mentor: Sabine Smith

**7:45pm - 8:00pm**

*Cross-Gender Friendships: Can Men & Women Just be Friends?*

Brittany Edwards, Alyssa Varhol, Jennifer Brooks

Faculty Mentor: Corinne McNamara

**Convocation Center, Room 2008**  
**Science and Mathematics**

**6:00pm - 6:15pm**

*Self-Focusing and Laser-Induced Ionization Effects in the Propagation of Intense Ultrashort Laser-Pulses through Dielectrics*

Jiexi Liao

Faculty Mentor: Jeremy Gulley

**6:15pm - 6:30pm**

*Comparison of Nitrogen Transformation Rates in Vegetated and Un-Vegetated Marine Sediments of St. Joseph Bay, FL*

Daniel Hoffman

Faculty Mentor: Troy Mutchler

**6:30pm - 6:45pm**

*How Two Groups Brought Two Polymers Together: "Click" Reactions Using a Recently Invented Linker*

Matthew Booher

Faculty Mentor: Gregory Gabriel

**6:45pm - 7:00pm**

*Water Soluble N-Confused Tetraphenylporphyrin*

Pooya Salehi

Faculty Mentor: Janet Shaw

**7:00pm - 7:15pm**

*Multivariate Analysis Of Dry Powder Mixtures Of Acetylsalicylic Acid And Salicylic Acid Using Ftir-Atr And Microsoft Excel*

Craig Swanson, Elizabeth Heilig

Faculty Mentor: Marina Koether

**7:15pm - 7:30pm**

*Nim: Perfect Play and Lucky Opponents*

Min Kim

Faculty Mentor: Joe DeMaio

**7:30pm - 7:45pm**

*Total Domination on the Triangular Honeycomb Chessboard*

Taylor Kindred

Faculty Mentor: Joe DeMaio



**7:45pm - 8:00pm**

*The Coupon Collector Problem*

Michael M. Thomas

Faculty Mentor: Anda Gadidov

## **Convocation Center, Room 2015**

### **Arts, Education**

**6:00pm - 6:15pm**

*Exploring Students' Affinity Spaces to (Re)invent the English Classroom*

Derek Wright

Faculty Mentor: Ryan Rish

**6:15pm - 6:30pm**

*Hybridization and Nabataean Identity in the Khazneh Facade at Petra*

Lauren Bearden

Faculty Mentor: Kristen Seaman

**6:30pm - 6:45pm**

*"In Other Words I Am Three": Analyzing The Black Saint and the Sinner Lady as an Extension of Mingus' Psyche*

Zachary Evans

Faculty Mentor: Edward Eanes

**6:45pm - 7:00pm**

*The Uniqueness of Felix Mendelssohn's Life*

Joshua Martin

Faculty Mentor: Edward Eanes

**7:00pm - 7:15pm**

*Shakespeare's Objectives*

Meagan Dilworth, Zachary Bromberg

Faculty Mentor: Jane Barnette

**7:15pm - 7:30pm**

*A Work of Art*

Anterior Leverett

Faculty Mentor: Margaret Baldwin, Karen Robinson, Jamie Bullins

**7:30pm - 7:45pm**

*Creating Dramaturgical Lobby Displays: CABARET & BUS STOP*

Houston McArthur, Jaime Melvin

Faculty Mentor: Jane Barnette, Dean Adams, Harrison Long

**7:45pm - 8:00pm**

*Fourth Graders Creating Scripts on Colonial Times: An Integrated Project Across the Curriculum*

Jennifer Elie

Faculty Mentor: Stacy Delacruz, Sohyun An

# APPENDIX

## ACKNOWLEDGEMENTS

The Student Activities and Budget Advisory Committee (SABAC)

The Honor Society of Phi Kappa Phi

The Undergraduate Research Club

Dr. Michele DiPietro, Executive Director, Center for Excellence in Teaching and Learning

Kaleem Clarkson, Operations Manager, Center for Excellence in Teaching and Learning

Debbie RedWine, Office Lead III, Center for Excellence in Teaching and Learning

Alex Gambon, Digital Media Specialist - Student Assistant, Center for Excellence in Teaching and Learning

# INDEX OF STUDENT RESEARCHERS

---

## A

Addington, Lea · 26, 125  
Adedeji, Deborah · 20, 21, 84, 85  
Ajetomobi, Stephen · 19, 72  
Allen, Michelle · 16, 49  
Amodio III, Leonard · 21  
Araujo, Lucianna · 21, 87  
Arce, Katherine · 17, 64  
Atterberry, Morgan · 24, 111  
Augustus, Gaius · 27, 129

---

## B

Bailey, Daniel E. · 22, 97  
Bales, Katie · 22, 91  
Balinger, Duncan · 14, 34, 35  
Barnes, Christen · 27, 128  
Bassery, Minoo · 25  
Bauer, Jordan · 23, 100  
Beard, Chelsea · 21, 89  
Bearden, Lauren · 25, 117, 143  
Bhagwanji, Aayushi · 21, 88  
Birt, Ed · 13  
Bohrer, Claire · 27, 127  
Booher, Matthew · 22, 98, 142  
Boone, Ashley · 18  
Bromberg, Zachary · 25, 120, 143  
Brooks, Jennifer · 18, 66, 67, 141  
Brown, Brittany · 21  
Brown, Leslie · 26, 123  
Browne, Sharonda · 21  
Burke, Grace · 26

---

## C

Cabral, Natalia · 15, 43, 141  
Campbell, Kelley · 18, 20, 65  
Cantrell, Bria · 18, 69  
Carter, Andrew · 21  
Chambers, Natalie · 15, 44, 141  
Collins, Courtney · 20, 78  
Colombo, William · 20, 79  
Cordle, Tracey · 15, 45, 141

---

## D

Davenport, Nick · 16, 50  
Dewendt, Daniela · 25, 115  
Dilworth, Meagan · 25, 120, 143  
Dingle, Brittany · 26  
Duke, Dechino Kincaid Deangel · 23, 99

Dumas, Juliana · 18  
Durden, Ariell Samantha · 23, 99

---

## E

Edwards, Brittany · 18, 19, 20, 66, 141  
Elie, Jennifer · 13, 30, 144  
Ereddia, Danielle · 26, 123  
Etheridge, Fielding · 18, 67  
Evans, Robert · 23, 105  
Evans, Zachary · 25, 118, 143

---

## F

Falcon, Shavon · 22, 94

---

## G

Garbar, Veronica · 21, 89  
Garcia, Lislely · 21  
Garcia, Paola · 14, 36, 140  
Gavin, William · 16, 48  
Gergel, Michelle · 13  
Gibson, Ryan · 16, 52, 140  
Gilstrap, Mollie · 14, 37  
Ginburg, Brian · 18, 68  
Gipson, Jasmine · 27, 126  
Glosson, Chris · 15, 46, 141  
Gonter, Tommy · 18, 69  
Green, Sydney · 27, 126  
Gress, Jason · 16, 54  
Grissom, Elizabeth · 20, 79  
Gutiérrez, Hector · 17, 59

---

## H

Halladay, Michelle · 23, 108  
Ham, Sangwook · 14, 33, 140  
Hamill, James · 26, 124  
Hampe, Debbie · 25, 116  
Haney, Anthony Robert · 22, 97  
Hanscom, Madison · 18, 70, 71  
Harris, George · 26  
Harris, Max · 16, 55, 140  
Harrod, Chelsea · 23, 100  
Heilig, Elizabeth · 24, 109, 142  
Hernandez, Scarlet · 19, 72  
Hillman, Blaire · 26  
Hoenstine, Justin · 18, 70  
Hoffman, Daniel · 22, 90, 142  
Homer, Christina · 22, 91

---

**J**

Johnston, Shelby · 21, 88  
Jumper, Heather · 26, 125

---

**K**

Khosrownia, Houman · 23, 105  
Kim, Min · 24, 112, 142  
Kindred, Taylor · 24, 113, 142  
King, Amelia · 22, 92  
King, Colin · 22, 93  
Knapp, Sara · 27, 127  
Knight, Alexandra · 19, 73  
Kramschuster, Melissa · 26, 123

---

**L**

Landstrom, Juergie · 27, 128  
LaPorta, Rachel · 19  
Law, James · 23, 101  
Lawson, Zachary · 26  
Lee, Scott · 17, 60  
Lester, Jeff · 25  
Leverett, Anterior · 26, 121, 143  
Liao, Jiexi · 20, 82, 142

---

**M**

Maddox, Karen · 18, 20, 65  
Martin, Joshua · 25, 119, 143  
Martinez-Kautz, Kathy · 19  
Martini, Rachel · 27, 126  
Masci, Sandi · 19  
Mavrov, Plamen · 17, 56, 57, 58, 140  
Maza, Lindey · 19, 20, 74, 80  
McArthur, Houston · 26, 122, 144  
McCarty, Zachary · 23, 102  
McGrath, Savannah · 19, 74  
Megedyuk, Christina · 23, 101  
Meisner, Quinton James · 23, 104  
Melvin, Jaime · 26, 122, 144  
Miles, Dale Eric · 23, 103  
Molina, Amy · 18  
Moon, Sumi · 17, 58, 140  
Mughal, Muhammad · 16, 51

---

**N**

Naugle, Eric · 17, 61, 141

---

**O**

O'Dell, Shannon · 27, 127

Osler, Reanna · 25  
Oyler, Amy · 13

---

**P**

Pace, Jackie · 26  
Parkhurst, Melony · 18, 20, 65  
Parr, Joshua · 23, 105  
Penuela, Katherine · 19  
Phelps, Amber · 19, 74  
Pierce, Evelina · 24  
Pisano, Olivia · 14, 38  
Potter, Sharifa · 16, 53, 141  
Powers, Rebecca · 18, 70

---

**R**

Ragsdale, Kelci · 14, 39  
Ramos, Shenell · 27, 130  
Raymond, Christopher · 20, 83  
Redman, Carol · 18  
Rivard, Justin · 17, 58, 140  
Rizwan, Shafaq · 24, 110  
Roberts, Samantha · 15, 40  
Rogers, Cayce · 13  
Rohling, Cherlee · 17, 61, 141  
Rosenhauer, Anna · 18  
Rowell, Samantha · 18, 19, 73  
Rucker, Timothy · 26, 124  
Russo, Caleb · 17, 61, 141

---

**S**

Salehi, Pooya · 23, 107, 142  
Samson, Andrew · 21  
Sapp, Lisa · 13, 14, 31, 32  
Scannavino, Mary · 19, 72  
Schad, Sarah · 26  
Seed, Emily · 25, 115  
Sellers, Ashley · 18, 71  
Shatz, Andrew · 20, 21, 84, 85  
Silvius, Johannah · 22, 94  
Sipeykina, Darya · 20, 78  
Sloan, Jacob · 22, 95  
Smith, Jennifer · 19, 75  
Smith, Kristen · 26  
Smith, Taniesha · 21, 89  
Smith, Teresa · 22, 93  
Spence, Helen · 18, 71  
Starks, Anthony · 16, 51  
Stepat, Liza · 27, 128  
Stovall, Alex · 23, 108  
Sugahara, Otoe · 24  
Swanson, Craig · 24, 109, 142  
Syfrett, Caitlin · 15, 41

---

**T**

Tatis, Cynthia · 17, 62  
Tention, Kizmat · 19, 76  
Thomas, Michael M · 114  
Thomas, Michael M. · 24  
Thye, Greg · 25, 115  
Tippens, Benjamin · 19, 77  
Tolley, April · 15, 42  
Trice, Shavon · 14, 32  
Trickey, Ken · 20, 78  
Troutt, Meghan · 21, 88  
Turner, Ivana Elizabeth · 23  
Turner, James · 18, 65

---

**U**

Uberto, Richard · 21, 86  
Umejiego, Ezigbobiara · 22, 96

---

**V**

Vaquera, Jessica · 17, 63  
Varhol, Alyssa · 18, 19, 20, 66, 73, 141  
Venoy, Allison · 20, 79

---

**W**

Walker, Selina · 25, 116  
Wallace, Jazmine · 26  
Walschot, Steven Matthew · 23  
Warren, Ben · 24  
Warren, Whitney · 18, 69  
Watson, Ashley Elizabeth · 24, 110  
Webb, Anna · 27, 131  
Whitehall, Kymberly · 26, 125  
Williams, Dawn · 26  
Williams, Elizabeth · 18, 20, 65  
Williamson, Emily · 13, 29  
Wilson, Jessica · 22, 94  
Wright, Derek · 15, 47, 143  
Wright, Jasmine · 14, 33, 140

---

**Y**

Yoo, Jae Euk · 14, 33, 140

---

**Z**

Zaidi, Mohamed · 22, 91  
Zhan-Moodie, Melodi · 20, 80  
Zierler, Creg · 20, 81

# INDEX OF FACULTY MENTORS

---

## A

Adams, Dean · 26, 122, 144  
Akinyemi, Nurudeen · 17, 58, 140  
Albrecht, Eric · 21, 89  
Alexander, Christopher W. · 23, 105  
Allison, Audrey · 15, 43, 141  
An, Sohyun · 13, 30, 144  
Azarvan, Amir · 17, 56, 140

---

## B

Baldwin, Margaret · 26, 121, 143  
Barnette, Jane · 15, 25, 26, 45, 120, 122, 141, 143, 144  
Baruah, Bharat · 23, 101  
Bhasin, Tavishi · 16, 54  
Bian, Fang · 22, 96  
Brock, Julia · 16, 53, 141  
Buddie, Amy · 14, 18, 19, 26, 27, 32, 68, 72, 123, 124, 125, 126, 127, 128  
Bullins, Jamie · 26, 121, 143

---

## C

Croicu, Ana-Maria · 24, 111

---

## D

Delacruz, Stacy · 13, 30, 144  
DeMaio, Joe · 24, 112, 113, 142

---

## E

Eanes, Edward · 25, 118, 119, 143

---

## G

Gabriel, Gregory · 22, 98, 142  
Gadidov, Anda · 24, 114, 143  
Gentile, John · 15, 45, 141  
Giraldo, Mario · 16, 51  
Griffin, Melanie · 21, 22, 96  
Gulley, Jeremy · 20, 82, 142

---

## H

Haseltine, John · 21, 23, 24, 100  
Hauge, Xueya · 22, 95

Hill, Ken · 26, 27, 123, 124, 125, 126, 127, 128  
Horne, Wayne Van · 14, 16, 38, 48  
Hudson, Martin · 22, 91, 92, 93  
Hwang, Kristine · 14, 25, 33, 115, 116, 140

---

## J

Jackson, Paula · 16, 51

---

## K

Kaledin, Martina · 20, 21, 84, 85  
Kim, Yanghee · 13, 14, 29, 33, 140  
Koether, Marina · 24, 109, 142

---

## L

Laval, June · 17, 59, 60, 62, 63  
Long, Harrison · 26, 122, 144  
Lundy, Brandon · 14, 15, 34, 37, 40

---

## M

Marek, Pam · 18, 19  
Martin, Nicole · 17, 19, 64, 74  
McElroy, Thomas · 21, 87  
McNamara, Corinne · 18, 19, 20, 66, 73, 141  
McNeal, Joel · 27, 129  
Merrell, Donna · 16, 52, 140  
Moomaw, Ellen · 21, 86  
Moran, John · 17, 57, 140  
Msimanga, Huggins Z. · 22, 23, 24, 97, 99, 103, 104, 106, 110  
Mutchler, Troy · 22, 90, 142

---

## N

Nowak, Scott · 21, 88

---

## P

Pallas, Christopher · 16, 55, 140  
Palmer, Chris · 15, 44, 141  
Patterson, Lynn · 16, 49, 50  
Pearcey, Sharon · 20, 80  
Poskus, Phillip · 26, 27, 123, 124, 125, 126, 127, 128  
Powers, Jennifer · 20, 83



---

**R**

Raczek, Teresa · 14, 15, 35, 41  
Randolph, Adriane · 13, 24, 31  
Rish, Ryan · 15, 47, 143  
Robinson, Karen · 26, 121, 143  
Rogers, Daniel · 20, 78

---

**S**

Scott, Gail · 18, 19, 20, 70, 71, 75, 76, 79  
Seaman, Kristen · 25, 117, 143  
Sen, Debarati · 14, 36, 140  
Shaw, Janet · 23, 107, 108, 142  
Smith, Sabine · 17, 61, 141  
Smith, Susan Kirkpatrick · 14, 15, 39, 42  
Stewart, Linda · 15, 46, 141  
Sutton, Heather · 22, 94

---

**T**

Tagliatela, Lauren · 18, 20, 69, 81  
Tapu, Daniela · 23, 102, 103

---

**W**

Wade-Berg, Jennifer · 27, 130, 131  
Willard, Jennifer · 18, 67  
Williamson, Adrienne · 18, 20, 65

---

**Y**

Yang, Tao · 22, 96

---

**Z**

Zhou, An · 22, 96  
Ziegler, Christine · 19, 77