2003

5th Annual Student Academic Conference: Conference Program & Abstracts Volume V

Minnesota State University Moorhead

5th annual

student academic CONFERENCE

conference program & abstracts

Volume V

the MSUM showcase of academic achievement

wednesday
april 9.2003

comstock memorial union
minnesota state university moorhead

MINNESOTA STATE UNIVERSITY moorhead

www.mnstate.edu/acadconf

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Purpose

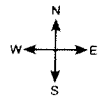
The purpose of the Student Academic Conference is to showcase the work and talent of MSUM students through presentations, posters, and creative works at a one-day conference held annually at MSUM in April in the Comstock Memorial Union. All students are encouraged to submit presentation applications. We strive to accommodate all students who wish to be presenters. The university community, parents, friends, prospective students, alumni, and employers are welcome to attend the conference to witness the excitement of intellectual exchanges among our students.

Sponsors

This conference exists because of the work of the entire university community, both in terms of financial and moral support. Supporters include: Strategic Grant Initiatives Fund, President's Office, Academic Affairs, Student Affairs, Administrative Affairs, Alumni Foundation, Inter Faculty Organization, MSUAASF, AFSCME, Student Senate, Campus Activities Board, Student Activities Budget Committee, and Sodexho Services.

Comstock Memorial Union Map

Comstock Memorial Union



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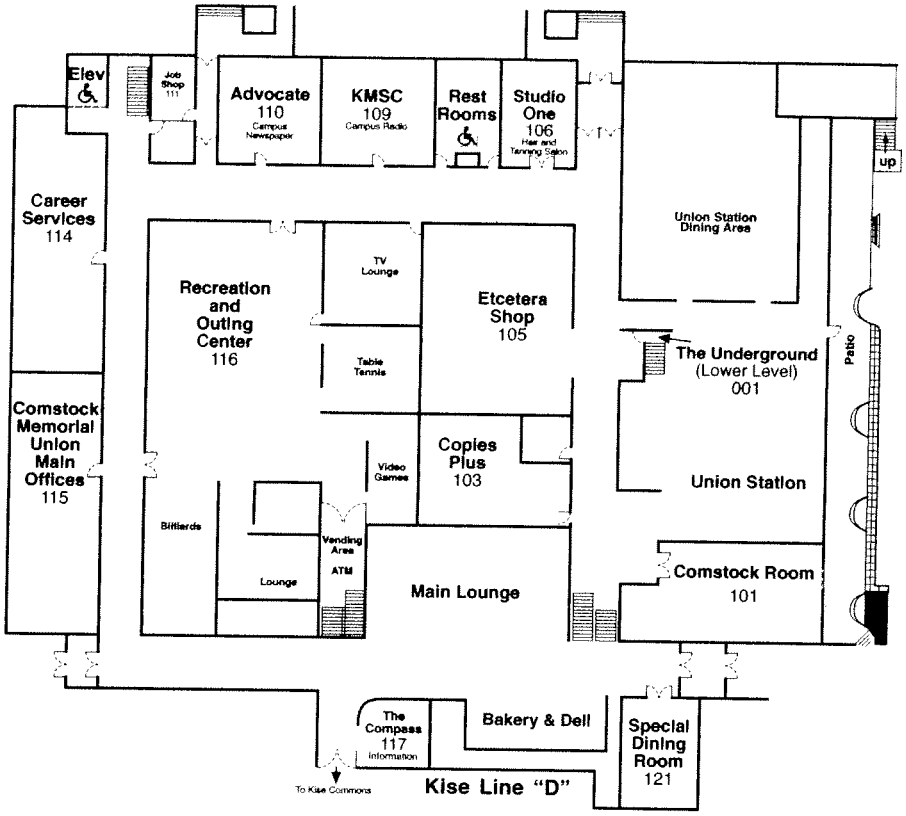

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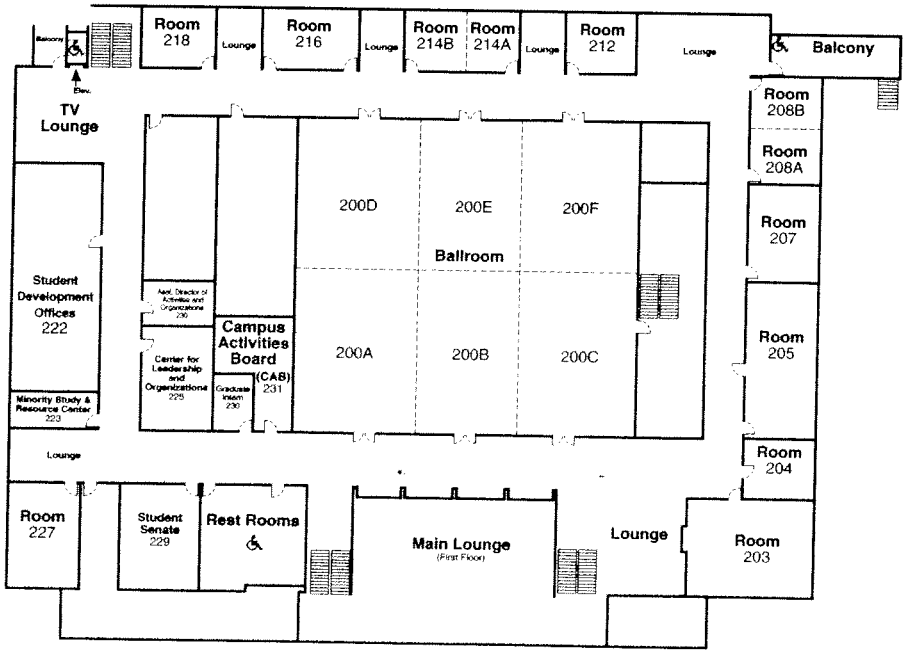

Comstock Memorial Union is a smoke-free environment

How the Conference got Started

Conference Highlights

2003	156 Presentations 258 Presenters
2002	151 Presentations 234 Presenters
2001	133 Presentations 241 Presenters
2000	139 Presentations 218 Presenters
1999	107 Presentations 170 Presenters

Minnesota State University Moorhead has developed a program to encourage undergraduate research in all disciplines through the development of the Student Academic Conference. The idea of such a conference was suggested by Dr. Andrew Conteh, Political Science, during a class in spring semester of 1998 when he said, "few students have the opportunity to present at national or regional conferences." This got MSUM graduate student Ryan Sylvester thinking, and he went back to Dr. Conteh proposing that the Student Academic Conference be started. The two of them met frequently over the summer to plan and outline the mission and concept of the conference.

The two initiated meetings with the President, Vice Presidents, and Academic Deans to request support. The conference was well-supported financially and in spirit. With the endorsement of administration, the conference planners developed a list of faculty and staff from across campus representing every discipline and division and invited them to be part of the Student Academic Conference steering committee.

The conference format includes a luncheon for presenters featuring an MSUM alumnus keynote speaker on the topic of undergraduate research. The keynote is followed by a panel response composed of four undergraduate students who are selected by each academic Dean to represent their respective division (Arts & Humanities, Education & Human Services, Business & Industry, and Social & Natural Sciences). Following the luncheon there are two or three presentation sessions of approximately an hour and half each in length. Most presentations in a session are 17 minutes in length (12 minutes to present and 5 minutes for questions) but accommodations are made for specific time requests such as 30, 45, or even 60 minute workshops or panel discussions. There are 15 break-out rooms used for simultaneous presentations so attendees have to determine ahead of time which presentations they wish to attend. Throughout the conference, poster presentations are on display in the main lobby area where the conference is held.

Dr. Conteh and Mr. Sylvester remain the primary conference organizers with the assistance of various campus personnel and the advice of the steering committee. Applications to present are made available during fall semester and are due in mid-February. The conference strives to feature presentations from all academic majors across campus and to allow any student to participate. Applications are screened by the Program sub-group of the steering committee. Presentations are grouped loosely by common themes, but careful attention is paid to ensure sessions are not homogenous. This is done to promote the conference theme of sharing ideas across disciplines. The way presentations are scheduled presents attendees with the opportunity to hear multiple presentations from different disciplines within a session. Every attempt is made to accommodate audio visual requests of presenters.

There is no fee for the presenters. Presenters have the opportunity to attend the conference luncheon (at no cost) featuring the keynote speaker and student panelists. Funding for the conference has come from across campus in the past (Alumni Foundation, Academic Departments, Academic Deans, Vice Presidents, President) but, recently, the conference applied for a Strategic Initiative Grant and will operate off of the grant for another year. The conference will then be added to the regular budget of the university. The major costs to the conference are the conference luncheon for presenters, printing of the conference program with presentation abstracts, and funding for travel and hosting of the keynote speaker. Additional costs include: certificates, conference posters, conference information postcards, name tags, and other printing costs. The total per year has been less than $4,000, but with increased participation, costs have increased each year.

Conference planners are now preparing for the 4th Student Academic Conference to be held April 10, 2002. Each year has seen progressive positive involvement from presenters, faculty, staff, and attendance at the conference.

Letter from the President

Greetings:

I am proud of our students. Many of our Dragons become proficient scholars and artists as evidenced by the annual Minnesota State University Moorhead Student Academic Conference.

This conference culminates the student work inspired by the involvement and encouragement of our faculty. Essentially all of the research papers, creative works, group projects, and other student presentations are created under the personal supervision of an involved faculty mentor. Personal interaction between MSU Moorhead students and faculty is instrumental to student success.

Presenting one's work beyond the classroom and in the conference setting promotes student growth and development. The students who participate in the Student Academic Conference experience the intellectual pleasure of presenting to a genuinely interested audience of other students, faculty, and members of the community. In addition, they face the challenge of defending their ideas in a supportive community of student and faculty scholars.

As an audience member, you will encounter our students' intellectual curiosity and creativity. I know that you will be impressed with the curiosity and rigor of our students.

Congratulations to all who contribute to the conference as student participants, faculty mentors, conference planners, and supporters. Thank you for your role in continuing Minnesota State University Moorhead's mission to foster excellence in teaching and learning.

Sincerely,

Roland E. Barden, Ph.D.
President

Letter from the Vice President of Academic Affairs

Memorandum

Students and faculty members at Minnesota State University Moorhead have long engaged in creative, meaningful learning experiences beyond the traditional classroom. No better example exists than the *Student Academic Conference*, now in its fifth year.

Throughout the Conference, research results will be shared, creative projects will be viewed, and interdisciplinary student work will be examined. Conference attendees will contribute to the learning experience by asking questions, and by engaging in exchanges with students who are, often for the first time, presenting the results of original work.

For a very special day, the Minnesota State University Moorhead community largely sets aside other activities, duties, and commitments that occupy it from day to day, and focuses on the achievements of its students and the creative, scholarly and research gifts of its faculty. We invite you to join us and participate in a singular learning experience.

Bette G. Midgarden, Ph.D.
Vice President for Academic Affairs

Letter from the Faculty Association

Metamorphoses are no less remarkable for being frequent, and one of those routine miracles is the process that changes a former high school student into a poised, thoughtful professional. The Student Academic Conference both recognizes and celebrates the transformation. While ultimately students educate themselves, still faculty are there to nudge, cajole, instruct and sometimes even inspire their students. Events like the Conference give us the pleasure of watching our students make us proud.

Letter from the Alumni Foundation

Future Alumni,

The Student Academic Conference is a great example of the priority our students place on their education for professional careers. Many benefits derive from the intellectual discipline that is celebrated by this conference. Foremost is the collaboration between students and professors. Academic excellence is our alma mater's most important tradition.

The Alumni Foundation is proud to support the efforts of MSU Moorhead students to share their knowledge and research.

Thank you,

Don Meidinger
President
MSUM Alumni Foundation

Conference Schedule

Wednesday, April 10, 2002

7:30 a.m. **Poster Set-Up--Registration/Information Table--CMU Main Lounge**

10:30 a.m. **Presenter Registration--Registration/Information Table--CMU Main Lounge**

11:15 a.m. **Seating for the Luncheon--CMU Ballroom**

11:30 a.m. **Luncheon Starts (Welcome and Introductions)--CMU Ballroom**
Menu: Grilled Chicken Fettuccini Alfredo [Chicken] or Grilled Portabello Mushroom Alfredo [Vegetarian]
Luncheon is for presenters and invited guests. Individuals can attend the speaker portion of the luncheon without purchasing luncheon tickets.

11:50 a.m. **Keynote Speaker--CMU Ballroom**
Dr. Tomi Sawyer, Vice President, Drug Discovery; ARIAD Pharmaceuticals

12:20 p.m. **Student Panelists--CMU Ballroom**
- John Myers, Education & Human Services
- Kimberly Fedorenko, Arts & Humanities
- Suzanne Bandas, Business & Industry
- Kristen Eklund, Social & Natural Sciences

1:00 p.m. **Presentation Session 1 and Poster Session 1--Various CMU Rooms and Poster Display Area**
View the Schedule by Room on page 13.

2:20 p.m. **Break**

2:30 p.m. **Presentation Session 2 and Poster Session 2--Various CMU Rooms and Poster Display Area**
View the Schedule by Room on page 13.

3:50 p.m. **Closing Social --CMU Main Lounge**
Refreshments sponsored by Counseling and Career Services. Presenters should attend to pick up their conference certificate.

Conference Organizers And Steering Committee

Conference Advisor

Dr. Andrew Conteh
Professor of Political Science

Steering Committee

- Layne Anderson
- Theresa Carson
- Dr. David Olday
- Dr. Joe Provost
- Dr. Margaret Sankey
- Dr. Helen Sheumaker
- Greg Stutes
- Dr. Harry Weisenberger

Conference Organizers

Ryan Sylvester
Area Director,
Residence Life Department

Cindy Preston
Assistant to the Vice President
for Academic Affairs for
Special Projects

Linda Palmer
Student Organizer

Conference Volunteers

Dr. Laurie Blunsom, Layna Cole, Dr. Stephen Giedosh Sr., Brittney Goodman, Jane Gudmundson, Betty Gunderson, Charlie Howell, Jeremy Johnson, Dr. Michael Kirkeby, Deb Lewis, Rebecca Lindell, Timme Litt, Veronica Michael, Dean Mollerud, Judy Mrosla, Eunice Nygard, Barb Seiler, Kathy Tillisch, Ilene Tritten-Anderson, Michael Wilde, John Woleske

Want to Get Involved?

If you are interested in being a part of the steering committee for the Student Academic Conference next year, a conference volunteer, or interested in being a student organizer, please send an e-mail expressing your interest to acconf@mnstate.edu

Keynote Speaker

Keynote: *"Science, Technology and Medicine: Vision of the Alpha and the Omega"*

Each year an MSUM alumnus is selected to deliver the keynote address to conference attendants. This person is selected by the conference steering committee following a review of nominations received from members of the MSUM campus community. This year's keynote speaker is:

Dr. Tomi Sawyer

Vice-President, Drug Discovery; Head Signal Transduction Program, ARIAD Pharmaceuticals, Cambridge, Massachusetts

Dr. Sawyer has many hats to wear in his professional career. In addition to his leadership role in ARIAD Pharmaceuticals, he is an Adjunct Professor in the Department of Biochemistry and Molecular Biology and the Department of Chemistry at the University of Massachusetts. Before working at ARIAD, Dr. Sawyer worked at two other pharmaceutical companies. At Parke-Davis/Warner-Lambert, Dr. Sawyer was a Head of the Structure-Based Design Chemistry group. At the Upjohn Company, Dr. Sawyer rose through the scientific ladder as an expert on peptide and peptidomimetic drug discovery. Dr. Sawyer has previously served as Affiliate Professor in the Department of Biological Structure and Design at the University of Washington School of Medicine and as Adjunct Associate Professor in the Interdepartmental Program on Medicinal Chemistry at the University of Michigan School of Pharmacy.

In his current position as Vice-President of Drug Discovery, Dr. Sawyer is engaged in the discovery and development of breakthrough medicines that regulate cell signaling by small molecules created using structure-based drug design. ARIAD Pharmaceuticals is developing a comprehensive approach to the treatment of cancer by targeting protein kinases (e.g., Src, Abl, and mTor). Exemplifying key lead compounds and clinical candidates that Dr. Sawyer has championed are AP22408, AP23236, AP23451, AP23588, and AP23464. Overall, his drug discovery work has had an impact on diseases ranging from osteoporosis to immune disease (AIDS), cardiovascular and metabolic diseases and cancer.

Dr. Sawyer has served on the editorial advisory boards of several professional journals including Nature Reviews Drug Discovery, Molecular Biotechnology, Trends in Pharmacological Sciences, and Journal of Medicinal Chemistry. He has also been an invited speaker, hosted or organized well over 60 scientific meetings or workshops. Dr. Sawyer has been extensively published with over 170 articles, reviews, monographs and books. He is an inventor of more than 40 patents, including several that encompass peptide, peptidomimetic and nonpeptide drugs that have advanced into human clinical trials. Dr. Sawyer has also been successful in achieving funding for research. As a co-principal investigator or key collaborator he has been awarded both government and industry-sponsored research funding in excess of seven million dollars.

Dr. Sawyer is from Greenbush Minnesota, a small town in northern Minnesota. He graduated in 1976 with a B.Sci. degree in Chemistry from Moorhead State University where he performed honors research projects with Dr. James Shaw (organic chemistry), Dr. Judith Strong (physical chemistry), and Dr. Duane Brummond (biochemistry). His first publication in the Journal of Organic Chemistry was from Moorhead State University. Dr. Sawyer received his Ph.D. degree in Organic Chemistry from the University of Arizona in 1981. He won an Outstanding Young Alumni Award from Moorhead State University in 1984. Dr. Sawyer is married to Constance and they have two children Thomas, 15 and Jonathon, 12.

The keynote lecture will highlight Dr. Sawyers career development that began with his undergraduate MSU experience (a personal "alpha") and some key milestones in science, technology and medicine that have impacted both Dr. Sawyer's life and humanity in a greater sense. His talk will provide a vision of what achievements are forthcoming (the "omega") and the forces that inspire such quests of mankind.

Student Panelists

Each year four student panelists are selected to respond to the keynote address. These four students represent the four academic divisions of the university: Arts & Humanities, Social & Natural Sciences, Business & Industry, and Education & Human Services. These students are selected by the Dean of each academic division following a review of nominations received from members of the MSUM campus community. This year's panelists include:

John Myers, Education & Human Services

John is majoring in Elementary Education with a specialty in Math and is originally from Lisbon, ND. John is a current recipient of the MSUM Upper-class Scholarship. John is active in the national Read Across America program where he volunteers three days a week, to read with a first or second grader at the Moorhead Elementary Schools. In addition, he is a mentor to an 11 year old boy in the Moorhead Parks System mentoring program. John makes additional time to be a pre-school assistant at his son Bryan's pre-school where he accompanies the children on field trips and helps in the classroom. He also serves as WEB organizer for Education Minnesota Student Program (EMSP). John started his education at North Dakota State College of Science, Wahpeton, where he earned a degree in computer programming. He transferred to MSUM to complete his dream of teaching, and found that his previous program gave him a head start on credits earned to complete his teaching degree. John is currently a junior, a full-time student, and living in Moorhead with his wife, Christy and their three children, Brandon (9), Bryan (5), and Briana (3).

Kimberly Fedorenko, Arts & Humanities

Kimberly is from Williston, ND and is currently a Senior at MSUM dual majoring in English and Mass Communications. She enjoys working as a writing tutor on campus at The Write Site and is the co-president of Sigma Tau Delta, MSUM's English honor society which has hosted public readings and poetry slams. Kimberly is a member of the Student Advisory Board for the College of Arts and Humanities and volunteers at MSUM's Women's Center. She is the recipient of the MSUM Upperclassman Scholarship as well as scholarships from the Alumni Foundation. Kimberly will graduate in December 2003 and plans to use her education in writing and literature in the professional field.

Suzanne Bandas, Business & Industry

Suzanne is originally from Glencoe, MN and is currently a senior at MSUM. She will be graduating Magna Cum Laude in May of 2003 with a Marketing degree. Suzanne was the recipient of an MSUM Dragon Scholarship along with an Upperclassman scholarship. For the past few years, she has devoted herself to her hometown community serving as a bilingual paraprofessional educator for the Migrant Headstart Program. The Migrant Headstart Program strives to better the lives of the Hispanic children and their families through providing a safe environment that fosters learning. Suzanne's four years at MSUM have provided her with a challenging but rewarding experience that has built a strong foundation for her future success. She will be pursuing Master's degree in Business Administration at the University of Nebraska-Lincoln in the Fall of 2003. The department of Business Administration at UNL also awarded Suzanne the Non-resident Tuition Fellowship for the duration of the two year program.

Kristen Eklund, Social and Natural Sciences

Kristen is currently a senior at MSUM majoring in Speech/Language/Hearing Science and is originally from Hawley, MN. She enjoys being an active member of NSSLHA (National Student Speech Language Hearing Association) and currently serves on the Recruitment and Retention Committee. She also tutors undergraduate students taking SLHS courses. Over the past four years, Kristen has been an active member of Circle K, SPURS, SOC (Student Orientation Counselor), and Habitat for Humanity. She has also been involved with Alpha Lambda Delta and Phi Kappa Phi. She is the recipient of the MSUM President's Scholarship and the Upperclassman Scholarship. Kristen will graduate Summa cum Laude in May and plans to attend a graduate program in Speech-Language Pathology next fall. She hopes to work in an elementary school setting as a Speech-Language Pathologist with intentions of going on for her Ph.D. in Speech-Language Pathology. She would eventually like to teach in a university setting.

SCHEDULE BY ROOM

- **CMU 101**

Session 1		**Dr. Judy Strong, Session Chair**
1:00 p.m.	85	How birth order affects you
1:20 p.m.	50	Graphic Communications and What It Can Do For You!
1:40 p.m.	65	Detrimental Effects of Rock Music
2:00 p.m.	10	Presidential Myths
Session 2		**Dr. Karl W. Leonard, Session Chair**
2:30 p.m.	76	Political Campaigns and the Media: Who Sets the Agenda?
2:50 p.m.	54	Asturias: A Region Facing an Uncertain Future at the Hands of the "Black Sea"
3:10 p.m.	57	Energy Consumption and Economic Growth
3:30 p.m.	30	Billy Graham: his way to power, his truth, and his light on communism

- **CMU 121**

Session 1		**Dr. Henry Chan, Session Chair**
1:00 p.m.	63	Media in Uzbekistan (after the collapse of Soviet Socialistic Regime)
1:20 p.m.	9	The Parent-Child Communication Program: Case Study #6
1:40 p.m.	81	The Asian Financial Crisis
2:00 p.m.	16	The Parent-Child Communication Program: Case Study #8
Session 2		**Dr. Ronald Jeppson, Session Chair**
2:30 p.m.	1	The Parent-Child Communication Program: Case Study #9
2:50 p.m.	38	Is Mitochondrial Inheritance Tissue Specific? A New Look at the mtDNA Dogma from a Cell Biology Perspective
3:10 p.m.	58	The Effects UV Light May Have on Longevity
3:30 p.m.	168	The Parent-Child Communication Program: Case Study #10

- **CMU 200A**

Session 1		**Dr. Cliff Schuette, Session Chair**
1:00 p.m.	150	Handel's "Hercules"
1:20 p.m.	141	A Lesson in Biodiversity
Session 2		**Barbara Rath, Session Chair**
2:30 p.m.	140	Demonstration of Teaching Chemistry in the Community
3:30 p.m.	160	Agonist Effect on Growth and Invasion of Human Breast Cells

- **CMU 200D**

Session 1		**Dr. James Harley, Session Chair**
1:00 p.m.	139	Energy Flow in Ecosystems
Session 2		**Dr. Stephen Giedosh, Session Chair**
2:30 p.m.	142	An Ecological Approach to High School Biology

Numbers correspond with abstract listings beginning on page 26

- **CMU 203**

Session 1		**Dr. Shawn Damon Ginther, Session Chair**
1:00 p.m.	143	An Analysis of "From the Bridge" by Claribel Alegría
1:20 p.m.	44	Lymphedema: What is it?
1:40 p.m.	138	Creation of asteroid light curves using CCD photometry.
Session 2		**Dr. Michelle Malott, Session Chair**
2:30 p.m.	28	Changing Farm Subsidies from Commodity-Based Payments to Conservation-Based Payments
2:50 p.m.	87	Have YOU Heard of Nutella?
3:10 p.m.	91	35mm SLR Camera Introduction
3:30 p.m.	60	The impact of September 11 on the Middle East

- **CMU 204**

Session 1		**Dr. Bruce Roberts, Session Chair**
1:00 p.m.	59	The Cause for Terrorism: An Analysis of the British Suffragette Movement
1:20 p.m.	14	Ideological Propaganda and Social Control: A Discusion of George Orwell's "1984"
1:40 p.m.	24	Chris and John: A Case Study of Cooperative Learning
2:00 p.m.	134	Are you Stressed?
Session 2		**Dr. Joe Provost, Session Chair**
2:30 p.m.	92	My Twinn Dolls: A Pop Culture Study
2:50 p.m.	26	Semana Santa
3:10 p.m.	55	Cheerleading Is A Sport
3:30 p.m.	111	A Model for Ethical Decision Making

- **CMU 205**

Session 1		**Diane Wolter, Session Chair**
1:00 p.m.	68	Cost Benefit Anaylsis of Closing Natioanl Parks to Snowmobiles
1:20 p.m.	74	The Changing Structure of the Health Care Industry
1:40 p.m.	47	Can I Build My Own House? A Study into the Industrial Organization of the new Single-Family Housing Industry In Fargo, ND.
2:00 p.m.	102	Personal theft rate versus poverty: a positive relationship
2:15 p.m.	103	Unknown
Session 2		**Dr. Paul Harris, Session Chair**
2:30 p.m.	22	An Analysis of Minnesota Funeral Home Pricing
2:50 p.m.	33	Tobacco Cessation Policy Successes and Failures
3:10 p.m.	43	Trends in the College Wage Premium: 1970-2000
3:30 p.m.	137	Wage Disparity, Causes

- **CMU 207**

Session 1		**Craig Ellingson, Session Chair**
1:00 p.m.	62	The "American Dream", Achieved by Some Unrealized by Many.
1:20 p.m.	48	The Hsiung-nu Confederacy and the Ho-chin System: Sino-nomadic relations in Classical China before Emperor Wu
1:40 p.m.	123	Samuel Becket on 'self never knowing itself'
2:00 p.m.	112	Narrative structure of inmate false imprisonment web pages
Session 2		**Dr. Brian Smith, Session Chair**
2:30 p.m.	23	Examining Adolescent Social Emotional Development through Coming of Age Literature

Numbers correspond with abstract listings beginning on page 26

- **CMU 208**

Session 1		**Janet Haak Aarness, Session Chair**
1:00 p.m.	101	Diego Rivera
1:20 p.m.	6	The Parent-Child Communication Program: Case Study #3
1:40 p.m.	100	Changing Roles of Azerbaijani Women. Problems or Opportunities
2:00 p.m.	7	The Parent-Child Communication Program: Case Study #5
Session 2		**Dr. Jan Flola, Session Chair**
2:30 p.m.	4	The Parent-Child Communication Program: Case Study #2
2:50 p.m.	25	School Construction in Nicaragua
3:10 p.m.	5	The Parent-Child Communication Program: Case Study #7
3:30 p.m.	27	Child Soldiers: Victims Forgotten

- **CMU 214**

Session 1		**Dr. Benjamin Smith, Session Chair**
1:00 p.m.	90	The Parent-Child Communication Program: Case Study #4
1:20 p.m.	98	Your Life is Waiting: Paxil and the phenomena of overmedication.
1:40 p.m.	11	Your neighborhood, your community, and your future: Let's talk about race and alternative education
2:00 p.m.	3	The Parent-Child Communication Program: Case Study #1
Session 2		**Janet Haak Aarness, Session Chair**
2:30 p.m.	84	Former Soviet Countries at a Glance.
2:50 p.m.	86	AAC Technology: The Dynawrite
3:10 p.m.	109	Effect of Protein Active Site Flexibility on Malate Dehydrogenase Thermostability
3:30 p.m.	8	Toni Stone: A Tomboy to Remember

- **CMU 216**

Session 1		**Jill Holsen, Session Chair**
1:00 p.m.	110	Feminism in the Tri-College Area
1:50 p.m.	99	FYE: A first semester class with lasting impact
Session 2		**Dr. Deb White, Session Chair**
2:30 p.m.	29	Monarchical Circumscription: King John and the genesis of Magna Carta.
2:50 p.m.	124	Wang Mang and His Confucian Ideal
3:10 p.m.	41	The Soviet Economy: 1914-1964
3:30 p.m.	133	The Education System of Great Britain

- **CMU 218**

Session 1		**Dr. Roberta Shreve, Session Chair**
1:00 p.m.	12	An Application of Sets and Venn Diagrams
1:30 p.m.	51	Stuffed Shells - Original Fiction
1:45 p.m.	73	AIDS Education Among Kenya's Street Children; An Anthropological Approach
2:00 p.m.	152	Toyotomi Hideyoshi and his Korean Campaign
Session 2		**Dr. Chris Chastain, Session Chair**
2:30 p.m.	136	John Cage's Silence
2:45 p.m.	135	SHOCK ART: Is it Art?
3:02 p.m.	18	Annihilation of false value systems: Nietzsche's Becoming
3:20 p.m.	154	Leave No Child Behind?
3:40 p.m.	155	Calvin Griffith: A Biography

Numbers correspond with abstract listings beginning on page 26

- **CMU 227**

Session 1		**Dr. Deb White, Session Chair**
1:00 p.m.	153	Discerning Your Call: The Vocation Approach to Career Counseling
1:20 p.m.	15	Four Common Sports Injuries: Prevention and Basic Care
1:40 p.m.	126	The Fargo-Moorhead Streetcar
2:00 p.m	129	Grand Round: Peter Richard Johnson
Session 2		**Dr. Jim Hatzenbuhler, Session Chair**
2:30 p.m.	171	MSUM China Tour - A Cultural Experience
2:50 p.m.	89	The War of Religion: the ongoing conflict in Northern Ireland (a work in progress)
3:10 p.m.	105	Economic reality in the former socialist countries, in particular Bulgaria and the role of international organizations such as International Monetary Fund and The World Bank in their post-communism development
3:30 p.m.	172	The Probabilities of Powerball

- **Kise Line D**

Session 1		**Phyllis May-Machunda, Session Chair**
1:00 p.m.	170	Communication Issues in Selected 2002 Political Campaigns
Session 2		**Jean Hollaar, Session Chair**
2:30 p.m.	169	Theatre History Panel

- **Underground**

Session 1		**Dr. SuEllen Shaw, Session Chair**
1:00 p.m.	32	Light in the Darkness: Hope in Dolores Walshe's "In the Talking Dark"
1:20 p.m.	79	The Epic Henry V
1:40 p.m.	67	Exploring language issues through Jean Fritz's Homesick
2:00 p.m.	56	A Lesson: Educational Methods Within Toni Cade Bambara's "The Lesson"
Session 2		**Larry Schwartz, Session Chair**
2:30 p.m.	31	Innocence and Auto-Ethnography
2:50 p.m.	40	Strong African American Women in the Writings of Charles Chesnutt and Zora Neale Hurston
3:10 p.m.	117	Freeing the Irish Female Facade: Raw Prose and Declarations of Sexual Autonomy in the Writings of Edna O'Brien, Rita Ann Higgins, and Clare Boylan
3:30 p.m.	82	"Anselm's Argument for the Existence of God"

- **Main Lounge**

Session 1		**Chair to be announced**
1:00 p.m.	158	Visualizing mitochondrial dynamics during the cell cycle in yeast
1:00 p.m.	75	Lightcurve of 625 Xenia
1:00 p.m.	122	How Does the Substrate Specificity of Glyoxysomal Malate Dehydrogenase Change When Aspartate (Asp-157) is mutated to Glycine or Asparagine
1:00 p.m.	88	Gender Differences: Does Competition vs. Non-competition in Advertisements Influence Males and Females Differently?
1:00 p.m.	125	Pulse Programmer of a Nuclear Magnetic Resonance Spectrometer
1:00 p.m.	128	Monitoring the activation of MAPK and wound repair ability in response to LPA, PE, and uPA stimulation in MRC-5, NCI-H196, and NCI-H23 cells
1:00 p.m.	131	The Use of Chemical Cues by Aquatic Animals for the Avoidance of Predators
1:00 p.m.	146	How leaves adapt to different light environments: an analysis of some key photosynthetic parameters for sun versus shade adapted basswood leaves
1:00 p.m.	34	Identification and Investigation of Phosphatase-Sensitive Proteins on Microtubule Assembly
1:00 p.m.	151	Painted Turtle (*Chrysemys picta*)Ecology in Clay County, Minnesota
1:00 p.m.	121	Mutation of Glyoxysomal Malate Dehydrogenase isolated from Cutrullus vulgaris: Mutation of Arg-87 and Gly-95 to Lysine

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1:00 p.m.	162	Walleye survival training: conditioning hatchery reared walleye to recognize predators in the wild.
1:00 p.m.	164	How the photosynthetic machinery of leaves differ between plants with C3 and C4 photosynthetic mechanisms. A study of Pigweed (C4) versus Groundsel (C3).
1:00 p.m.	66	Detection of DNA Damage in Chinese Hamster Lung Cells Exposed to Ultra-Violet Radiation.
1:00 p.m.	165	How the photosynthetic machinery of leaves differ between plants with C3 and C4 photosynthetic mechanisms. A study of Crabgrass (C4) versus Kentucky Bluegrass (C3).
1:00 p.m.	61	Characterization of B-ethynyl-9-BBN and Z-1-Bromo-(9-BBN)-2-Catecholborylethene
1:00 p.m.	148	Psychological Views on Chris Nelson
1:00 p.m.	53	Counselor Self-Disclosure: Helpful or harmful?
1:00 p.m.	113	Use of Microsatellites for Assessing Reproductive Success in Fathead Minnows (*Pimephales promelas*).
1:00 p.m.	72	The Effect Of Ultra Violet Radiation of FKHR-L1 Protein in Yeast
1:00 p.m.	70	A Graphic Designer's Pursuit
1:00 p.m.	94	Finding the Link Between Mitochondrial Dynamics and the Cell Cycle in Saccharomyces cerevisia
1:00 p.m.	46	Differential ERK Activation in Chinese Hamster Lung (CCL39) Fibroblasts by Primary and Secondary Alcohols
1:00 p.m.	95	Continuation of using soil magnetic research to understand earthwork construction at Hopeton Earthworks.
1:00 p.m.	36	Excavations at a Prehistoric Blackduck Site on the Minnesota Prairie
1:00 p.m.	106	Elucidation of the Genetic Sequence for Pyruvate Phosphate Dikinase Regulatory Protein: A Novel Approach to Functional Genomics
1:00 p.m.	52	uPA and Its Role in Breast Cancer: Signaling Pathways and Cellular Migration

Session 2		**Chair to be announced**
2:30 p.m.	49	Development of a Quantitative Assay to Measure Cancer Cell Migration
2:30 p.m.	120	An Integrated Approach to Archaeological Investigations: Geophysical research at a plains fortified village
2:30 p.m.	149	How leaves adapt to different light environments: an analysis of some key photosynthetic parameters for sun versus shade adapted Elm tree leaves
2:30 p.m.	157	Noctumal Alarm Responses in Fish
2:30 p.m.	93	Effects on the Activity of Malate Dehydrogenase due to Substitution of Threonine-204
2:30 p.m.	161	Investigating the evolutionary path of a C4 photosynthetic enzyme
2:30 p.m.	163	The Impact of Ethanol on Cell Aging
2:30 p.m.	69	The Activity and Regulatory Process of FOXO3a Transcription Factor in Relation to Oxidative Stress.
2:30 p.m.	83	Activation of ERK, NHE, and PKC-dependent stimulation of RhoA are necessary for actin stress fiber formation due to the alpha-1 adrenergic receptor agonist phenylephrine
2:30 p.m.	166	How sunlight changes the photosynthetic machinery of leaves: a comparison of key photosynthetic components of sun loving leaves (Goldenrod) and shade loving leaves (Common Gorund Ivy)
2:30 p.m.	77	Signal Filter for Nuclear Magnetic Resonance Spectrometer
2:30 p.m.	159	A Comparison of Stress Fiber Formation in Human Embryonic Lung Cells and Human Non-Small Cell Lung Cancer Cells
2:30 p.m.	108	Set Yourself Apart: Benefits of Electronic Portfolios/Online Resumes
2:30 p.m.	114	A Research Proposal: Factors Influencing Successful Turkey (*Meleagris gallopavo*) Reintroduction in Northwestern MInnesota.
2:30 p.m.	147	How leaves adapt to different light environments: an analysis of some key photosynthetic parameters for sun versus shade adapted lilac leaves
2:30 p.m.	145	How leaves adapt to different light environments: an analysis of some key photosynthetic parameters for sun versus shade adapted wild grape leaves
2:30 p.m.	115	Shocked and Alarmed: alarm signals in electric fish
2:30 p.m.	35	Recycling and the Student Body
2:30 p.m.	116	Development of a Multi-Spectral In Situ Technique for the Detection of Harmful Algal Booms Caused by Karinia brevis.

Numbers correspond with abstract listings beginning on page 26

2:30 p.m.	107	Isolation and Purification of Minnow Chemical Attractants
2:30 p.m.	21	The effect of poverty on education: F/M school focus
2:30 p.m.	104	The role of PKC in alpha-1-adrenergic activation of ERK and NHE in CCL39 fibroblasts
2:30 p.m.	132	Aging of Prairie Dogs: Correlation between length and with of humerus bone to the age of the prairie dog.
2:30 p.m.	144	How leaves adapt to different light environments: an analysis of some key photosynthetic parameters for sun versus shade adapted Wintergreen shrub leaves
2:30 p.m.	39	Antipredetor Competence of Convict Cichlids and its relation to their Skeletal Development.

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Alphabetical List Of Presenters

32	Andrea Aberle	Light in the Darkness: Hope in Dolores Walshe's "In the Talking Dark"	Underground	1:00 p.m.
134	Anna Ackerson	Are you Stressed?	CMU 204	2:00 p.m.
91	Jonathan Aisenbrey	35mm SLR Camera Introduction	CMU 203	3:10 p.m.
105	Nikolay Alexandrov	Economic reality in the former socialist countries, in particular Bulgaria and the role of international organizations such as International Monetary Fund and The World Bank in their post-communism development	CMU 227	3:10 p.m.
50	Tara Allord	Graphic Communications and What It Can Do For You!	CMU 101	1:20 p.m.
86	Marin Almer	AAC Technology: The Dynawrite	CMU 214	2:50 p.m.
125	Moneer Al-Rifai	Pulse Programmer of a Nuclear Magnetic Resonance Spectrometer	Main Lounge	1:00 p.m.
49	Amanda Anania	Development of a Quantitative Assay to Measure Cancer Cell Migration	Main Lounge	2:30 p.m.
3	Barbara Anderson	The Parent-Child Communication Program: Case Study #1	CMU 214	2:00 p.m.
46	JaDean Anderson	Differential ERK Activation in Chinese Hamster Lung (CCL39) Fibroblasts by Primary and Secondary Alcohols	Main Lounge	1:00 p.m.
81	Blaine Anderson	The Asian Financial Crisis	CMU 121	1:40 p.m.
107	Brooks Angell	Isolation and Purification of Minnow Chemical Attractants	Main Lounge	2:30 p.m.
171	John Arnold	MSUM China Tour - A Cultural Experience	CMU 227	2:30 p.m.
15	Michelle Axelson	Four Common Sports Injuries: Prevention and Basic Care	CMU 227	1:20 p.m.
84	Vusala Azizova	Former Soviet Countries at a Glance.	CMU 214	2:30 p.m.
84	Ulkar Babayeva	Former Soviet Countries at a Glance.	CMU 214	2:30 p.m.
100	Ulkar Babayeva	Changing Roles of Azerbaijani Women. Problems or Opportunities	CMU 208	1:40 p.m.
81	Quincy Backen	The Asian Financial Crisis	CMU 121	1:40 p.m.
110	Sarah Beauregard	Feminism in the Tri-College Area	CMU 216	1:00 p.m.
170	Brandon Beery	Communication Issues in Selected 2002 Political Campaigns	Kise Line D	1:00 p.m.
143	Anita Bender	An Analysis of "From the Bridge" by Claribel Alegría	CMU 203	1:00 p.m.
51	Kris Benson	Stuffed Shells - Original Fiction	CMU 218	1:30 p.m.
84	Ben Bentley	Former Soviet Countries at a Glance.	CMU 214	2:30 p.m.
25	Jana Biel	School Construction in Nicaragua	CMU 208	2:50 p.m.
30	Holly Bigelow	Billy Graham: his way to power, his truth, and his light on communism	CMU 101	3:30 p.m.
11	Trish Billheimer	Your neighborhood, your community, and your future: Let's talk about race and alternative education	CMU 214	1:40 p.m.
70	Garth Blomberg	A Graphic Designer's Pursuit	Main Lounge	1:00 p.m.
85	Sarah Bosl	How birth order affects you	CMU 101	1:00 p.m.
92	Amber Boyd	My Twinn Dolls: A Pop Culture Study	CMU 204	2:30 p.m.
21	Andrea Boyer	The effect of poverty on education: F/M school focus	Main Lounge	2:30 p.m.
52	Heidi Boyum	uPA and Its Role in Breast Cancer: Signaling Pathways and Cellular Migration	Main Lounge	1:00 p.m.
104	Heidi Boyum	The role of PKC in alpha-1-adrenergic activation of ERK and NHE in CCL39 fibroblasts	Main Lounge	2:30 p.m.
26	Rachel Brause	Semana Santa	CMU 204	2:50 p.m.
113	Jason Brown	Use of Microsatellites for Assessing Reproductive Success in Fathead Minnows (Pimephales promelas).	Main Lounge	1:00 p.m.
4	Christina Bruce	The Parent-Child Communication Program: Case Study #2	CMU 208	2:30 p.m.

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#	Name	Title	Room	Time
161	Kyle Carlson	Investigating the evolutionary path of a C4 photosynthetic enzyme	Main Lounge	2:30 p.m.
110	Shanon Crabtree	Feminism in the Tri-College Area	CMU 216	1:00 p.m.
66	Faith Dahl	Detection of DNA Damage in Chinese Hamster Lung Cells Exposed to Ultra-Violet Radiation.	Main Lounge	1:00 p.m.
169	Tanner Dahlin	Theatre History Panel	Kise Line D	2:30 p.m.
69	Jennifer Dale	The Activity and Regulatory Process of FOXO3a Transcription Factor in Relation to Oxidative Stress.	Main Lounge	2:30 p.m.
6	Tara Decker	The Parent-Child Communication Program: Case Study #3	CMU 208	1:20 p.m.
121	James Denker	Mutation of Glyoxysomal Malate Dehydrogenase isolated from Cutrullus vulgaris: Mutation of Arg-87 and Gly-95 to Lysine	Main Lounge	1:00 p.m.
84	Natalya Denysko	Former Soviet Countries at a Glance.	CMU 214	2:30 p.m.
90	Sara Diede	The Parent-Child Communication Program: Case Study #4	CMU 214	1:00 p.m.
149	Shari Dittmer	How leaves adapt to different light environments: an analysis of some key photosynthetic parameters for sun versus shade adapted Elm tree leaves	Main Lounge	2:30 p.m.
22	Mark Dokken	An Analysis of Minnesota Funeral Home Pricing	CMU 205	2:30 p.m.
133	Katherine Dolan	The Education System of Great Britain	CMU 216	3:30 p.m.
50	Davina Doris	Graphic Communications and What It Can Do For You!	CMU 101	1:20 p.m.
100	Martin Doyle	Changing Roles of Azerbaijani Women. Problems or Opportunities	CMU 208	1:40 p.m.
84	Martin Doyle	Former Soviet Countries at a Glance.	CMU 214	2:30 p.m.
40	Bobby Duncan	Strong African American Women in the Writings of Charles Chesnutt and Zora Neale Hurston	Underground	2:50 p.m.
136	Fritz Eagleshield III	John Cage's Silence	CMU 218	2:30 p.m.
117	Amanda Easton	Freeing the Irish Female Facade: Raw Prose and Declarations of Sexual Autonomy in the Writings of Edna O'Brien, Rita Ann Higgins, and Clare Boylan	Underground	3:10 p.m.
59	Heather Ehrichs	The Cause for Terrorism: An Analysis of the British Suffragette Movement	CMU 204	1:00 p.m.
60	Heather Ehrichs	The impact of September 11 on the Middle East	CMU 203	3:30 p.m.
7	Kristen Eklund	The Parent-Child Communication Program: Case Study #5	CMU 208	2:00 p.m.
99	Kristi Elder	FYE: A first semester class with lasting impact	CMU 216	1:50 p.m.
160	Camille Erickson	Agonist Effect on Growth and Invasion of Human Breast Cells	CMU 200A	3:30 p.m.
47	Trevor Ernst	Can I Build My Own House? A Study into the Industrial Organization of the new Single-Family Housing Industry In Fargo, ND.	CMU 205	1:40 p.m.
82	Martin Eyestone	"Anselm's Argument for the Existence of God"	Underground	3:30 p.m.
86	Lisa Fanfulik	AAC Technology: The Dynawrite	CMU 214	2:50 p.m.
40	Kimberly Fedorenko	Strong African American Women in the Writings of Charles Chesnutt and Zora Neale Hurston	Underground	2:50 p.m.
146	Dan Feir	How leaves adapt to different light environments: an analysis of some key photosynthetic parameters for sun versus shade adapted basswood leaves	Main Lounge	1:00 p.m.
93	Mario Fernandez	Effects on the Activity of Malate Dehydrogenase due to Substitution of Threonine-204	Main Lounge	2:30 p.m.
34	Mario Fernandez	Identification and Investigation of Phosphatase-Sensitive Proteins on Microtubule Assembly	Main Lounge	1:00 p.m.
99	Steven Fick	FYE: A first semester class with lasting impact	CMU 216	1:50 p.m.
75	Sherry Fieber	Lightcurve of 625 Xenia	Main Lounge	1:00 p.m.
8	Teri Finneman	Toni Stone: A Tomboy to Remember	CMU 214	3:30 p.m.

Numbers correspond with abstract listings beginning on page 26

#	Name	Title	Room	Time
10	Teri Finneman	Presidential Myths	CMU 101	2:00 p.m.
103	Ian Flagg	Unknown	CMU 205	2:15 p.m.
120	Aaron Fogel	An Integrated Approach to Archaeological Investigations: Geophysical research at a plains fortified village	Main Lounge	2:30 p.m.
6	Trisha Funk	The Parent-Child Communication Program: Case Study #3	CMU 208	1:20 p.m.
140	Shamus Funk	Demonstration of Teaching Chemistry in the Community	CMU 200A	2:30 p.m.
61	Neil Gartin	Characterization of B-ethynyl-9-BBN and Z-1-Bromo-(9-BBN)-2-Catecholborylethene	Main Lounge	1:00 p.m.
114	Katie R. Geray	A Research Proposal: Factors Influencing Successful Turkey (Meleagris gallopavo) Reintroduction in Northwestern MInnesota.	Main Lounge	2:30 p.m.
122	Sara Getty	How Does the Substrate Specificity of Glyoxysomal Malate Dehydrogenase Change When Aspartate (Asp-157) is mutated to Glycine or Asparagine	Main Lounge	1:00 p.m.
12	Reoh Glover	An Application of Sets and Venn Diagrams	CMU 218	1:00 p.m.
66	Jeremy Grabinjer	Detection of DNA Damage in Chinese Hamster Lung Cells Exposed to Ultra-Violet Radiation.	Main Lounge	1:00 p.m.
65	Jodi Grau	Detrimental Effects of Rock Music	CMU 101	1:40 p.m.
107	Jill Greenley	Isolation and Purification of Minnow Chemical Attractants	Main Lounge	2:30 p.m.
114	Natasha W. Gruber	A Research Proposal: Factors Influencing Successful Turkey (Meleagris gallopavo) Reintroduction in Northwestern MInnesota.	Main Lounge	2:30 p.m.
151	Natasha Gruber	Painted Turtle (*Chrysemys picta*)Ecology in Clay County, Minnesota	Main Lounge	1:00 p.m.
61	Michelle Hagen	Characterization of B-ethynyl-9-BBN and Z-1-Bromo-(9-BBN)-2-Catecholborylethene	Main Lounge	1:00 p.m.
52	Michelle Hagen	uPA and Its Role in Breast Cancer: Signaling Pathways and Cellular Migration	Main Lounge	1:00 p.m.
169	Reed Halvorson	Theatre History Panel	Kise Line D	2:30 p.m.
39	Bree Hamann	Antipredetor Competence of Convict Cichlids and its relation to their Skeletal Development.	Main Lounge	2:30 p.m.
122	Bree Hamann	How Does the Substrate Specificity of Glyoxysomal Malate Dehydrogenase Change When Aspartate (Asp-157) is mutated to Glycine or Asparagine	Main Lounge	1:00 p.m.
128	Lisa Hansen	Monitoring the activation of MAPK and wound repair ability in response to LPA, PE, and uPA stimulation in MRC-5, NCI-H196, and NCI-H23 cells	Main Lounge	1:00 p.m.
104	Lisa Hansen	The role of PKC in alpha-1-adrenergic activation of ERK and NHE in CCL39 fibroblasts	Main Lounge	2:30 p.m.
85	Devon Hanson	How birth order affects you	CMU 101	1:00 p.m.
170	Matt Hanson	Communication Issues in Selected 2002 Political Campaigns	Kise Line D	1:00 p.m.
141	Jennifer Hatton	A Lesson in Biodiversity	CMU 200A	1:20 p.m.
148	Amanda Haugen	Psychological Views on Chris Nelson	Main Lounge	1:00 p.m.
166	Jarrod Heck	How sunlight changes the photosynthetic machinery of leaves: a comparison of key photosynthetic components of sun loving leaves (Goldenrod) and shade loving leaves (Common Gorund Ivy)	Main Lounge	2:30 p.m.
106	Jarrod Heck	Elucidation of the Genetic Sequence for Pyruvate Phosphate Dikinase Regulatory Protein: A Novel Approach to Functional Genomics	Main Lounge	1:00 p.m.
69	Jessica Heck	The Activity and Regulatory Process of FOXO3a Transcription Factor in Relation to Oxidative Stress.	Main Lounge	2:30 p.m.
68	Mindy Heller	Cost Benefit Anaylsis of Closing National Parks to Snowmobiles	CMU 205	1:00 p.m.

Numbers correspond with abstract listings beginning on page 26

#	Name	Title	Room	Time
72	Amanda Hillman	The Effect Of Ultra Violet Radiation of FKHR-L1 Protein in Yeast	Main Lounge	1:00 p.m.
67	Jennifer Hoepfner	Exploring language issues through Jean Fritz's Homesick	Underground	1:40 p.m.
144	Nathan Huseby	How leaves adapt to different light environments: an analysis of some key photosynthetic parameters for sun versus shade adapted Wintergreen shrub leaves	Main Lounge	2:30 p.m.
9	Sadie Huss	The Parent-Child Communication Program: Case Study #6	CMU 121	1:20 p.m.
165	Peter Hvidsten	How the photosynthetic machinery of leaves differ between plants with C3 and C4 photosynthetic mechanisms. A study of Crabgrass (C4) versus Kentucky Bluegrass (C3).	Main Lounge	1:00 p.m.
152	Hajime Ishizuka	Toyotomi Hideyoshi and his Korean Campaign	CMU 218	2:00 p.m.
5	Joni Iversen	The Parent-Child Communication Program: Case Study #7	CMU 208	3:10 p.m.
87	Lorael Jerger	Have YOU Heard of Nutella?	CMU 203	2:50 p.m.
38	Heidi Johnson	Is Mitochondrial Inheritance Tissue Specific? A New Look at the mtDNA Dogma from a Cell Biology Perspective	CMU 121	2:50 p.m.
50	Jodi Johnson	Graphic Communications and What It Can Do For You!	CMU 101	1:20 p.m.
158	Heidi Johnson	Visualizing mitochondrial dynamics during the cell cycle in yeast	Main Lounge	1:00 p.m.
77	Ryan Johnson	Signal Filter for Nuclear Magnetic Resonance Spectrometer	Main Lounge	2:30 p.m.
46	Jessica Johnson	Differential ERK Activation in Chinese Hamster Lung (CCL39) Fibroblasts by Primary and Secondary Alcohols	Main Lounge	1:00 p.m.
84	Alua Karpykova	Former Soviet Countries at a Glance.	CMU 214	2:30 p.m.
90	Jack King	The Parent-Child Communication Program: Case Study #4	CMU 214	1:00 p.m.
88	Erin Kirmis	Gender Differences: Does Competition vs. Non-competition in Advertisements Influence Males and Females Differently?	Main Lounge	1:00 p.m.
16	Wendy Kjersten	The Parent-Child Communication Program: Case Study #8	CMU 121	2:00 p.m.
21	Christina Klehm	The effect of poverty on education: F/M school focus	Main Lounge	2:30 p.m.
11	Christina Klehm	Your neighborhood, your community, and your future: Let's talk about race and alternative education	CMU 214	1:40 p.m.
116	Justin Klitzke	Development of a Multi-Spectral In Situ Technique for the Detection of Harmful Algal Booms Caused by Karinia brevis.	Main Lounge	2:30 p.m.
162	Joshua Klitzke	Walleye survival training: conditioning hatchery reared walleye to recognize predators in the wild.	Main Lounge	1:00 p.m.
157	Joshua Klitzke	Nocturnal Alarm Responses in Fish	Main Lounge	2:30 p.m.
113	Justin Klitzke	Use of Microsatellites for Assessing Reproductive Success in Fathead Minnows (Pimephales promelas).	Main Lounge	1:00 p.m.
36	Lora Kludt	Excavations at a Prehistoric Blackduck Site on the Minnesota Prairie	Main Lounge	1:00 p.m.
154	Jamie Knutson	Leave No Child Behind?	CMU 218	3:20 p.m.
99	Jennifer Kocourek	FYE: A first semester class with lasting impact	CMU 216	1:50 p.m.
15	LaDonna Korstad	Four Common Sports Injuries: Prevention and Basic Care	CMU 227	1:20 p.m.
48	Markus Krueger	The Hsiung-nu Confederacy and the Ho-chin System: Sino-nomadic relations in Classical China before Emperor Wu	CMU 207	1:20 p.m.
63	Dilnoza Kurchieva	Media in Uzbekistan (after the collapse of Soviet Socialistic Regime)	CMU 121	1:00 p.m.
170	Erin Lampa	Communication Issues in Selected 2002 Political Campaigns	Kise Line D	1:00 p.m.
101	Abby Larson	Diego Rivera	CMU 208	1:00 p.m.
73	Julie Larson	AIDS Education Among Kenya's Street Children; An Anthropological Approach	CMU 218	1:45 p.m.
23	Tera Larson	Examining Adolescent Social Emotional Development through Coming of Age Literature	CMU 207	2:30 p.m.

Numbers correspond with abstract listings beginning on page 26

#	Name	Title	Room	Time
66	Sara Larson	Detection of DNA Damage in Chinese Hamster Lung Cells Exposed to Ultra-Violet Radiation.	Main Lounge	1:00 p.m.
3	Tara Lee	The Parent-Child Communication Program: Case Study #1	CMU 214	2:00 p.m.
169	Ryan Legler	Theatre History Panel	Kise Line D	2:30 p.m.
86	Chris Liberda	AAC Technology: The Dynawrite	CMU 214	2:50 p.m.
150	Jamie Lindbo	Handel's "Hercules"	CMU 200A	1:00 p.m.
170	Ross Lockhart	Communication Issues in Selected 2002 Political Campaigns	Kise Line D	1:00 p.m.
35	Angie Lohse	Recycling and the Student Body	Main Lounge	2:30 p.m.
95	Kelsey Lowe	Continuation of using soil magnetic research to understand earthwork construction at Hopeton Earthworks.	Main Lounge	1:00 p.m.
70	Phil Lowe	A Graphic Designer's Pursuit	Main Lounge	1:00 p.m.
147	Lesley Lubenow	How leaves adapt to different light environments: an analysis of some key photosynthetic parameters for sun versus shade adapted lilac leaves	Main Lounge	2:30 p.m.
144	JT Luther	How leaves adapt to different light environments: an analysis of some key photosynthetic parameters for sun versus shade adapted Wintergreen shrub leaves	Main Lounge	2:30 p.m.
139	JT Luther	Energy Flow in Ecosystems	CMU 200D	1:00 p.m.
159	Ashley Malcolm	A Comparison of Stress Fiber Formation in Human Embryonic Lung Cells and Human Non-Small Cell Lung Cancer Cells	Main Lounge	2:30 p.m.
53	Jennifer Malley	Counselor Self-Disclosure: Helpful or harmful?	Main Lounge	1:00 p.m.
145	Kelly Mangin	How leaves adapt to different light environments: an analysis of some key photosynthetic parameters for sun versus shade adapted wild grape leaves	Main Lounge	2:30 p.m.
110	Peter Mathis	Feminism in the Tri-College Area	CMU 216	1:00 p.m.
38	Austin McCoy	Is Mitochondrial Inheritance Tissue Specific? A New Look at the mtDNA Dogma from a Cell Biology Perspective	CMU 121	2:50 p.m.
158	Austin McCoy	Visualizing mitochondrial dynamics during the cell cycle in yeast	Main Lounge	1:00 p.m.
128	Andrew McCoy	Monitoring the activation of MAPK and wound repair ability in response to LPA, PE, and uPA stimulation in MRC-5, NCI-H196, and NCI-H23 cells	Main Lounge	1:00 p.m.
83	Andrew McCoy	Activation of ERK, NHE, and PKC-dependent stimulation of RhoA are necessary for actin stress fiber formation due to the alpha-1 adrenergic receptor agonist phenylephrine	Main Lounge	2:30 p.m.
36	Amanda McCracken	Excavations at a Prehistoric Blackduck Site on the Minnesota Prairie	Main Lounge	1:00 p.m.
1	Megan Melin	The Parent-Child Communication Program: Case Study #9	CMU 121	2:30 p.m.
134	Jennifer Miller	Are you Stressed?	CMU 204	2:00 p.m.
56	Brad Miller	A Lesson: Educational Methods Within Toni Cade Bambara's "The Lesson"	Underground	2:00 p.m.
122	Anusha Mishra	How Does the Substrate Specificity of Glyoxysomal Malate Dehydrogenase Change When Aspartate (Asp-157) is mutated to Glycine or Asparagine	Main Lounge	1:00 p.m.
39	Anusha Mishra	Antipredetor Competence of Convict Cichlids and its relation to their Skeletal Development.	Main Lounge	2:30 p.m.
18	Peter Montecuollo	Annihilation of false value systems: Nietzsche's Becoming	CMU 218	3:02 p.m.
36	Christopher Moose	Excavations at a Prehistoric Blackduck Site on the Minnesota Prairie	Main Lounge	1:00 p.m.
69	Kimberly Mulder	The Activity and Regulatory Process of FOXO3a Transcription Factor in Relation to Oxidative Stress.	Main Lounge	2:30 p.m.
23	John Myers	Examining Adolescent Social Emotional Development through Coming of Age Literature	CMU 207	2:30 p.m.

Numbers correspond with abstract listings beginning on page 26

#	Name	Title	Room	Time
24	John Myers	Chris and John: A Case Study of Cooperative Learning	CMU 204	1:40 p.m.
86	Chrystal Myhre	AAC Technology: The Dynawrite	CMU 214	2:50 p.m.
72	Anojinie Nagahawatte	The Effect Of Ultra Violet Radiation of FKHR-L1 Protein in Yeast	Main Lounge	1:00 p.m.
58	Anna Naig	The Effects UV Light May Have on Longevity	CMU 121	3:10 p.m.
94	Anna Naig	Finding the Link Between Mitochondrial Dynamics and the Cell Cycle in Saccharomyces cerevisia	Main Lounge	1:00 p.m.
54	Jon Narlock	Asturias: A Region Facing an Uncertain Future at the Hands of the "Black Sea"	CMU 101	2:50 p.m.
55	Jeri Lynn Nelson	Cheerleading Is A Sport	CMU 204	3:10 p.m.
69	Diane Nelson	The Activity and Regulatory Process of FOXO3a Transcription Factor in Relation to Oxidative Stress.	Main Lounge	2:30 p.m.
162	Ryan Nelson	Walleye survival training: conditioning hatchery reared walleye to recognize predators in the wild.	Main Lounge	1:00 p.m.
170	Kristin Nettestad	Communication Issues in Selected 2002 Political Campaigns	Kise Line D	1:00 p.m.
171	Brent Neubauer	MSUM China Tour - A Cultural Experience	CMU 227	2:30 p.m.
4	Renae Niklaus	The Parent-Child Communication Program: Case Study #2	CMU 208	2:30 p.m.
23	Julie Niklaus	Examining Adolescent Social Emotional Development through Coming of Age Literature	CMU 207	2:30 p.m.
109	Justin Noehre	Effect of Protein Active Site Flexibility on Malate Dehydrogenase Thermostability	CMU 214	3:10 p.m.
16	Nicole Nord	The Parent-Child Communication Program: Case Study #8	CMU 121	2:00 p.m.
129	Jennifer Nystrom	Grand Round: Peter Richard Johnson	CMU 227	2:00 p.m.
62	Troy Olness	The "American Dream", Achieved by Some Unrealized by Many.	CMU 207	1:00 p.m.
138	Michael Olson	Creation of asteroid light curves using CCD photometry.	CMU 203	1:40 p.m.
66	Alisha Pagel	Detection of DNA Damage in Chinese Hamster Lung Cells Exposed to Ultra-Violet Radiation.	Main Lounge	1:00 p.m.
33	Sarah Paulsen	Tobacco Cessation Policy Successes and Failures	CMU 205	2:50 p.m.
28	Heidi Petersen	Changing Farm Subsidies from Commodity-Based Payments to Conservation-Based Payments	CMU 203	2:30 p.m.
146	Ben Peterson	How leaves adapt to different light environments: an analysis of some key photosynthetic parameters for sun versus shade adapted basswood leaves	Main Lounge	1:00 p.m.
14	Zach Peterson	Ideological Propaganda and Social Control: A Discusion of George Orwell's "1984"	CMU 204	1:20 p.m.
135	Neal Peterson	SHOCK ART: Is it Art?	CMU 218	2:45 p.m.
31	Zach Peterson	Innocence and Auto-Ethnography	Underground	2:30 p.m.
170	Amy Pfeifer	Communication Issues in Selected 2002 Political Campaigns	Kise Line D	1:00 p.m.
108	Derek Plautz	Set Yourself Apart: Benefits of Electronic Portfolios/Online Resumes	Main Lounge	2:30 p.m.
102	Isaac Poku	Personal theft rate versus poverty: a positive relationship	CMU 205	2:00 p.m.
23	Jessica Print	Examining Adolescent Social Emotional Development through Coming of Age Literature	CMU 207	2:30 p.m.
15	Cody Pritchett	Four Common Sports Injuries: Prevention and Basic Care	CMU 227	1:20 p.m.
79	Adam Quesnell	The Epic Henry V	Underground	1:20 p.m.
153	Melissa Rademacher	Discerning Your Call: The Vocation Approach to Career Counseling	CMU 227	1:00 p.m.
91	Nicholas Rahrich	35mm SLR Camera Introduction	CMU 203	3:10 p.m.
172	John Reber	The Probabilities of Powerball	CMU 227	3:30 p.m.

Numbers correspond with abstract listings beginning on page 26

#	Name	Title	Room	Time
54	Melissa Redlinger	Asturias: A Region Facing an Uncertain Future at the Hands of the "Black Sea"	CMU 101	2:50 p.m.
98	Dan Reetz	Your Life is Waiting: Paxil and the phenomena of overmedication.	CMU 214	1:20 p.m.
169	Jennifer Reider	Theatre History Panel	Kise Line D	2:30 p.m.
142	Michael Richards	An Ecological Approach to High School Biology	CMU 200D	2:30 p.m.
164	Michael Richards	How the photosynthetic machinery of leaves differ between plants with C3 and C4 photosynthetic mechanisms. A study of Pigweed (C4) versus Groundsel (C3).	Main Lounge	1:00 p.m.
141	Heather Rickerl	A Lesson in Biodiversity	CMU 200A	1:20 p.m.
29	Bruce Ringstrom	Monarchical Circumscription: King John and the genesis of Magna Carta.	CMU 216	2:30 p.m.
158	Jen Risan	Visualizing mitochondrial dynamics during the cell cycle in yeast	Main Lounge	1:00 p.m.
38	Jen Risan	Is Mitochondrial Inheritance Tissue Specific? A New Look at the mtDNA Dogma from a Cell Biology Perspective	CMU 121	2:50 p.m.
121	David Roderos	Mutation of Glyoxysomal Malate Dehydrogenase isolated from Cutrullus vulgaris: Mutation of Arg-87 and Gly-95 to Lysine	Main Lounge	1:00 p.m.
21	Darcy Rue	The effect of poverty on education: F/M school focus	Main Lounge	2:30 p.m.
23	Mandi Ruud	Examining Adolescent Social Emotional Development through Coming of Age Literature	CMU 207	2:30 p.m.
115	Ahmad Samin	Shocked and Alarmed: alarm signals in electric fish	Main Lounge	2:30 p.m.
41	Meridith Sanders	The Soviet Economy: 1914-1964	CMU 216	3:10 p.m.
46	Rachel Sang	Differential ERK Activation in Chinese Hamster Lung (CCL39) Fibroblasts by Primary and Secondary Alcohols	Main Lounge	1:00 p.m.
7	Amber Schempp	The Parent-Child Communication Program: Case Study #5	CMU 208	2:00 p.m.
76	Amy Schimelfenig	Political Campaigns and the Media: Who Sets the Agenda?	CMU 101	2:30 p.m.
151	Joanna M. Schmit	Painted Turtle (*Chrysemys picta*)Ecology in Clay County, Minnesota	Main Lounge	1:00 p.m.
124	Sara Sechler	Wang Mang and His Confucian Ideal	CMU 216	2:50 p.m.
112	Nathan Shippee	Narrative structure of inmate false imprisonment web pages	CMU 207	2:00 p.m.
74	Jason Sivers	The Changing Structure of the Health Care Industry	CMU 205	1:20 p.m.
137	Carl Skaro	Wage Disparity, Causes	CMU 205	3:30 p.m.
86	Kara Skjoiten	AAC Technology: The Dynawrite	CMU 214	2:50 p.m.
36	Tyler Smith	Excavations at a Prehistoric Blackduck Site on the Minnesota Prairie	Main Lounge	1:00 p.m.
1	Amanda Snyder	The Parent-Child Communication Program: Case Study #9	CMU 121	2:30 p.m.
148	Amy Steele	Psychological Views on Chris Nelson	Main Lounge	1:00 p.m.
43	Kelli Steffl	Trends in the College Wage Premium: 1970-2000	CMU 205	3:10 p.m.
12	Morea Steinhauer	An Application of Sets and Venn Diagrams	CMU 218	1:00 p.m.
89	Jenel J. Stelton-Holtmeier	The War of Religion: the ongoing conflict in Northern Ireland (a work in progress)	CMU 227	2:50 p.m.
44	Ronda Stenzel	Lymphedema: What is it?	CMU 203	1:20 p.m.
70	Caley Steward	A Graphic Designer's Pursuit	Main Lounge	1:00 p.m.
27	Roxanne Stewart	Child Soldiers: Victims Forgotten	CMU 208	3:30 p.m.
160	Emily Stoll	Agonist Effect on Growth and Invasion of Human Breast Cells	CMU 200A	3:30 p.m.
9	Michelle Storlie	The Parent-Child Communication Program: Case Study #6	CMU 121	1:20 p.m.
85	Jennifer Strand	How birth order affects you	CMU 101	1:00 p.m.
5	Brenda Strand	The Parent-Child Communication Program: Case Study #7	CMU 208	3:10 p.m.

Numbers correspond with abstract listings beginning on page 26

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70	Jocie Suess	A Graphic Designer's Pursuit	Main Lounge	1:00 p.m.
147	Perry Syverson	How leaves adapt to different light environments: an analysis of some key photosynthetic parameters for sun versus shade adapted lilac leaves	Main Lounge	2:30 p.m.
157	Perry Syverson	Nocturnal Alarm Responses in Fish	Main Lounge	2:30 p.m.
84	Max Taha	Former Soviet Countries at a Glance.	CMU 214	2:30 p.m.
57	Akiko Takeuchi	Energy Consumption and Economic Growth	CMU 101	3:10 p.m.
99	Rachel Temple	FYE: A first semester class with lasting impact	CMU 216	1:50 p.m.
65	Jenny Tholund	Detrimental Effects of Rock Music	CMU 101	1:40 p.m.
104	Hillary Thronson	The role of PKC in alpha-1-adrenergic activation of ERK and NHE in CCL39 fibroblasts	Main Lounge	2:30 p.m.
52	Hillary Thronson	uPA and Its Role in Breast Cancer: Signaling Pathways and Cellular Migration	Main Lounge	1:00 p.m.
110	Lucy Tobin	Feminism in the Tri-College Area	CMU 216	1:00 p.m.
126	Melissa Torpen	The Fargo-Moorhead Streetcar	CMU 227	1:40 p.m.
169	Alicia Underlee	Theatre History Panel	Kise Line D	2:30 p.m.
155	Hannah Vanorny	Calvin Griffith: A Biography	CMU 218	3:40 p.m.
145	Dylan Voge	How leaves adapt to different light environments: an analysis of some key photosynthetic parameters for sun versus shade adapted wild grape leaves	Main Lounge	2:30 p.m.
84	Katya Volchkova	Former Soviet Countries at a Glance.	CMU 214	2:30 p.m.
83	Justin Voog	Activation of ERK, NHE, and PKC-dependent stimulation of RhoA are necessary for actin stress fiber formation due to the alpha-1 adrenergic receptor agonist phenylephrine	Main Lounge	2:30 p.m.
128	Justin Voog	Monitoring the activation of MAPK and wound repair ability in response to LPA, PE, and uPA stimulation in MRC-5, NCI-H196, and NCI-H23 cells	Main Lounge	1:00 p.m.
123	Lucretia Wadnizak	Samuel Becket on 'self never knowing itself'	CMU 207	1:40 p.m.
139	Jonathan Walsh	Energy Flow in Ecosystems	CMU 200D	1:00 p.m.
129	Jessica Westeren	Grand Round: Peter Richard Johnson	CMU 227	2:00 p.m.
163	Jill Wieler	The Impact of Ethanol on Cell Aging	Main Lounge	2:30 p.m.
15	Joshua Wilhelm	Four Common Sports Injuries: Prevention and Basic Care	CMU 227	1:20 p.m.
70	Emily Zak	A Graphic Designer's Pursuit	Main Lounge	1:00 p.m.
165	Chris Ziegelmann	How the photosynthetic machinery of leaves differ between plants with C3 and C4 photosynthetic mechanisms. A study of Crabgrass (C4) versus Kentucky Bluegrass (C3).		

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Abstracts

1

Title: The Parent-Child Communication Program: Case Study #9
Presenter(s): Amanda Snyder, Megan Melin
Department: Speech/Language/Hearing Sciences
Advisor: Dr. Louis J. De Maio
Abstract: Parent-child interaction is critical for children's development of communication and language. Our research examined the effect of the Parent-Child Communication Program (PCCP) on a mother of a child with delayed language. Dr. Louis De Maio developed PCCP in 1998 to assist parents in promoting their children's communication and language development. Our analysis compared the mother's use of directive and non-directive communication patterns before and after PCCP training.

3

Title: The Parent-Child Communication Program: Case Study #1
Presenter(s): Barbara Anderson, Tara Lee
Department: Speech/Language/Hearing Sciences
Advisor: Dr. Louis J. De Maio
Abstract: Our study is one of ten case studies that examined the effect of the Parent-Child Communication Program (PCCP) in a mother of a child with delayed language. Dr. Louis De Maio developed PCCP in 1998 to assist parents in promoting their children's communication and language development. Our analysis compared the mother's use of directive and non-directive communication patterns before and after PCCP training. Results demonstrated a significant shift from a directive style before training to a non-directive style after training.

4

Title: The Parent-Child Communication Program: Case Study #2
Presenter(s): Renae Niklaus, Christina Bruce
Department: Speech/Language/Hearing Sciences
Advisor: Dr. Louis J. De Maio
Abstract: Our study was one of ten studies that analyzed the effect of the Parent-Child Communication Program on a mother with a child that has delayed language. Dr. Louis De Maio developed the Parent-Child Communication Program (PCCP) in 1998 to teach parents a method that will promote their child's communication and language. This study compared the mother's use of directive and non-directive communication patterns before and after the training program.

5

Title: The Parent-Child Communication Program: Case Study #7
Presenter(s): Joni Iversen, Brenda Strand
Department: Speech/Language/Hearing Sciences
Advisor: Dr. Louis J. De Maio
Abstract: Parent/child interaction is critical for children's development of communication and language. The Parent-Child Communication Program (PCCP) was developed by Dr. Louis De Maio to teach parents a method for promoting their children's communication and language development. Our study is one of ten case studies that analyzed the effects of PCCP training on a mother with a child having delayed language development. The mother's use of directive and non-directive communication patterns was analyzed before and after the PCCP training.

6

Title: The Parent-Child Communication Program: Case Study #3
Presenter(s): Tara Decker, Trisha Funk
Department: Speech/Language/Hearing Sciences
Advisor: Dr. Louis J. De Maio
Abstract: Our study was one of twelve studies that examined the effects of the Parent-Child Communication Program (PCCP) on the mother of a child with a language delay. Dr. Louis DeMaio developed this program in 1998 to teach parents a method to enhanced their childs active communication. This study analyzed the use of directive and non-directve communication patterns before and after the training program.

7

Title: The Parent-Child Communication Program: Case Study #5
Presenter(s): Kristen Eklund, Amber Schempp
Department: Speech/Language/Hearing Sciences
Advisor: Dr. Louis J. De Maio
Abstract: Our study was one of ten studies that examined the effects of the Parent-Child Communication Program (PCCP) on the mother of a child with a language delay. Dr. Louis DeMaio developed this program in 1998 to teach parents a method to enhanced their childs active communication. This study analyzed the use of directive and non-directve communication patterns before and after the training program.

8

Title: Toni Stone: A Tomboy to Remember
Presenter(s): Teri Finneman
Department: History
Advisor: Dr. Steve Hoffbeck
Abstract: When Jackie Robinson broke the color barrier in 1947, the Negro Leagues began to decline. In an effort to keep up gate attendance, Toni Stone was signed to play for the Indianapolis Clowns in 1953 and became the first woman to play professional baseball. My presentation will describe the hardships of women trying to be somebody during the 1950s, as well as examine the history of black baseball.

9

Title: The Parent-Child Communication Program: Case Study #6
Presenter(s): Michelle Storlie, Sadie Huss
Department: Speech/Language/Hearing Sciences
Advisor: Dr. Louis J. De Maio
Abstract: Our study was one of ten studies that examined the effects of the Parent-Child Communication Program (PCCP) on the mother of a child with a language delay. Dr. Louis De Maio developed this program in 1998 to teach parents a method to enhance their child's active communication. This study analyzed the mother's use of initiations and responses before and after training. Results showed a significant shift from an initiative style to a responsive style of communication after training.

10

Title: Presidential Myths
Presenter(s): Teri Finneman
Department: English
Advisor: Dr. John Sherman
Abstract: Isn't it eerie how alike JFK and Abraham Lincoln were? Not when most of the "facts" are myths! Ever hear of the Kennedy curse? Who's really cursed? My presentation will focus on popular myths regarding presidents and what the truth really is behind America's leading men.

11

Title: Your neighborhood, your community, and your future: Let's talk about race and alternative education
Presenter(s): Christina Klehm, Trish Billheimer
Department: Educational Foundations
Advisor: Dr. Steve Grineski
Abstract: This presentation grew out of an assignment for Ed 310 Social Foundations of Education. After reading "A white teacher talks about race" we wanted to learn about different perspectives regarding race and alternative education. So, we decided to create a survey and administer it to several different groups in the F-M area. These groups inlcuded students from the Moorhead Alternative High School, Moorhead Senior High Schoool,MSUM and community members. We will share our initial hypothesis about race and alternative education, the results from our survey and our thoughts about these results. We found the results particularly surprising and we bet you will too. Participants will also have the opportunity to fill out the survey.

12

Title: An Application of Sets and Venn Diagrams
Presenter(s): Reoh Glover, Morea Steinhauer
Department: Mathematics
Advisor: Dr. Geok Ng
Abstract: A presentation of Venn Diagrams and how to use them to solve a survey-type of situation.

14

Title: Ideological Propaganda and Social Control: A Discusion of George Orwell's "1984"
Presenter(s): Zach Peterson
Department: English
Advisor: Dr. Gayle Johnson
Abstract: A discussion of propaganda as described in Orwell's "1984," with relation to five different types of social control. My intent is to identify these five types of social control in terms of the propaganda that is present throughout the novel and give examples to help frame and reinforce my various points.

15

Title: Four Common Sports Injuries: Prevention and Basic Care
Presenter(s): Michelle Axelson, Joshua Wilhelm, LaDonna Korstad, Cody Pritchett
Department: English
Advisor: Dr. Michael McCord
Abstract: We will be giving a description of ankle sprains, shin splints, shoulder pain and lower back pain. Prevention and basic care for each of these common sports injuries will be discussed.

16

Title: The Parent-Child Communication Program: Case Study #8
Presenter(s): Nicole Nord, Wendy Kjersten
Department: Speech/Language/Hearing Sciences
Advisor: Dr. Louis J. De Maio
Abstract: This presentation is one of ten case studies that examined the effects of the Parent-Child Communication Program (PCCP) on a mother of a child with delayed language. PCCP was developed by Dr. Louis J. De Maio to assist parents in promoting their children's communication and language development. Our study examined the mother's use of directive and non-directive communication patterns before and after PCCP training.

18

Title: Annihilation of false value systems: Nietzsche's Becoming
Presenter(s): Peter Montecuollo
Department: Philosophy
Advisor: Dr. David Myers
Abstract: In my presentation, I plan to elaborate Friedrich Nietzshce's notions of Becoming. This is the notion that emphasis should be placed on this life, and not on living for something transcendent of this life. Nietzsche argues that value systems are only inventions, by what he calls the weak, to allow them to cope with life. These value systems only lead to the devaluing of this life for something outside of ourselves. Also, I plan to show how Nietzsche is correct in his refutation of these erroneous value systems

21

Title: The effect of poverty on education: F/M school focus
Presenter(s): Darcy Rue, Christina Klehm, Andrea Boyer
Department: EECE
Advisor: Layna Cole
Abstract: This is a research project dealing with parent/ professional relations in the topic of poverty. Poverty affects every community. Our project examines the statistics, stereotypes, and resources available in the F/M area, including interviews from professionals who work with poverty stricken families, principles, and teachers.

22

Title: An Analysis of Minnesota Funeral Home Pricing
Presenter(s): Mark Dokken
Department: Economics
Advisor: Dr. Oscar Flores
Abstract: I researched the funeral home industry to find which factors influence pricing. I collected data of population, competition, household income, and deaths for different funeral homes. Also collected breakdowns of each funeral home's pricing strategies. I will provide the results of my analysis, as well as information and materials about funeral homes and their pricing.

23

Title: Examining Adolescent Social Emotional Development through Coming of Age Literature
Presenter(s): Tera Larson, John Myers, Julie Niklaus, Jessica Print, Mandi Ruud
Department: EECE
Advisor: Dr. John Benson
Abstract: What does it mean to become an adult? In John Benson's Child Development for Teachers class, students read a "Coming of Age" novel and looked at how the characters in these novels moved into or towards adulthood. They then compared the lives of these characters with aspects of adolescent social and emotional development that they were studying in the class. The following books will be discussed by the following students: Tera Larson will discuss BORROWED CHILDREN by George Ella Lyon; John Myers will discuss THE ADVENTURES OF TOM SAWYER by Mark Twain; Julie Niklaus will discuss LUCY by Jamaica Kincaid; Jessica Print will discuss WHITE OLEANDER by Jane Fitch; and Mandi Ruud will discuss GREAT EXPECTATIONS by Charles Dickens.

24

Title: Chris and John: A Case Study of Cooperative Learning
Presenter(s): John Myers
Department: Educational Foundations
Advisor: Dr. Charles Howell
Abstract: For anyone going into the educational field, you know that observing your students as well as teaching them will be a critical component in your effectiveness as a teacher. In an analytical essay I prepared from an observation I made in a first grade classroom, I noticed some very interesting actions by children in which some of us can relate to. The teacher read a small book consisting of single pronunciations to the class. The class then read the book in pairs and proceeded by drawing a picture of each part of the book or something it reminded them of in a flip flap book format and shared it with the rest of the class. Cooperative learning, I concluded, is a strong learning tool for students to use at any age level to enhance their learning and friendships.

25

Title: School Construction in Nicaragua
Presenter(s): Jana Biel
Department: Spanish
Advisor: Dr. Benjamin Smith
Abstract: I will be sharing about missions trips to Nicaragua where a team from the United States did construction work on different schools in poverty areas. I will discuss briefly the process of building but most importantly the effect of the schools on the neighborhoods in which they are located.

26

Title: Semana Santa
Presenter(s): Rachel Brause
Department: Spanish
Advisor: Dr. Benjamin Smith
Abstract: Semana Santa is the Holy Week before Easter traditionally celebrated in Sevilla, Spain. During this week there are parades put together by "hermandades" (brotherhoods) to show their devotion to the Virgin Mary and Jesus for the ultimate sacrifice he made at the end of this week. I will explain some of the traditions of Semana Santa and the way the hermandades organize the parade to glorify their Lord and demonstrate this love to the crowds of onlookers.

27

Title: Child Soldiers: Victims Forgotten
Presenter(s): Roxanne Stewart
Department: Graphic Communications
Advisor: Dr. Mike Ruth
Abstract: There are an estimated 300,000 children under the age of 18 that are involved in todays armed conflicts internationally. Extreme cases where children are being forced to participate in non-governmental military warefare are prominent in the regions of South America, Africa, The Midle East and South/South-EAst Asia. This presentation looks at the living conditions of children involved in non-governmental military organizations as well as explores some of the economic and socio-political factors that contribute to children under the age of fifteen years joining the militia. How hard is it to reincorporate former child soldiers into civilian life and what are possible solutions to the situation that is steadily growing in the developing world.

28

Title: Changing Farm Subsidies from Commodity-Based Payments to Conservation-Based Payments
Presenter(s): Heidi Petersen
Department: English
Advisor: Dr. Hazel Retzlaff
Abstract: With the recent recession, taxpayers and government officials want to save money wherever they can. Many people are also concerned about their water and air quality. Both of these ideas are important in farm policy. Farmers receive subsidies from the government in order to offset low commodity prices. These subsidies also pay for conservation practices. This study investigates a change in the way the government distributes subsidies, the amount of land set aside for conservation, and the environmental and monetary benefits to farmers and taxpayers from a change in the farm program. Research illustrates that taxpayers save money, farmers still receive some subsidies, and the water and air quality improve with changes in the farm program.

29

Title: Monarchical Circumscription: King John and the genesis of Magna Carta.
Presenter(s): Bruce Ringstrom
Department: History
Advisor: Dr. Margaret Sankey
Abstract: Magna Carta is touted by many democratic nations as a proto-constitution, a foundation upon which modern republican government rests. At the time of signing, Magna Carta did not exist to protect the rights of the common people, but rather to enable key elites to regain their economic and political autonomy.

30

Title: Billy Graham: his way to power, his truth, and his light on communism
Presenter(s): Holly Bigelow
Department: History
Advisor: Dr. Paul Harris
Abstract: Billy Graham from the early 1950s until the early 70s used key political figures and a powerful anti-communist message through private and public media to gain influence, suggesting his motives were not always limited to "evangelizing" and helping people make "a decision for christ." By looking at his use of private and public media, it becomes evident how Graham surrounded himself with powerful public politicians and sometimes allowed those relationships to cloud his christian message.

31

Title: Innocence and Auto-Ethnography
Presenter(s): Zach Peterson
Department: Sociology
Advisor: Dr. Joel Powell
Abstract: I will discuss events which took place in late 2000, where because of certain circumstances, I was accused of robbing a local store at gunpoint. I finally obtained a copy of the written confession from the individual who did in fact rob the store, but this was almost a year and a half later.

32

Title: Light in the Darkness: Hope in Dolores Walshe's "In the Talking Dark"
Presenter(s): Andrea Aberle
Department: English
Advisor: Dr. Sandy Pearce
Abstract: This essay examines the presence of hope amidst apartheid-driven, South African tragedy in Irish playwright Dolores Walshe's "In the Talking Dark".

33

Title: Tobacco Cessation Policy Successes and Failures
Presenter(s): Sarah Paulsen
Department: Economics
Advisor: Dr. Oscar Flores
Abstract: Through econometric analysis, the presenter will quantify the results of various tobacco cessation efforts.

34

Title: Identification and Investigation of Phosphatase-Sensitive Proteins on Microtubule Assembly
Presenter(s): Mario Fernandez
Department: Biology
Advisor: Dr. Ellen Brisch
Abstract: An important event during mitosis is the formation of the mitotic spindle, which is essential for segregating the newly replicated chromosomes to each pole of the daughter cells. The mitotic spindle is composed of microtubules (MTs). The formation of the mitotic spindle is dependent on MT assembly. MT assembly is in part regulated by the phosphorylation/ dephosphorylation of microtubule-associated proteins (MAPs) and other co-purifying proteins. In previous experiments it has been shown that two proteins, which measure approximately 44 and 48 kilodaltons, play a role in microtubule assembly. One of these proteins cross-reacts with ERK antibodies, which has led us to hypothesize that these proteins belong to the Mitogen Activated Protein Kinase (MAPK) family. In our current studies, we seek to understand further how these proteins play a role on MT assembly using Okadaic Acid, a potent phosphatase inhibitor. We are also interested in trying to identify these proteins using Western Blot Analysis and Protein Microsequencing.

35

Title: Recycling and the Student Body
Presenter(s): Angie Lohse
Department: Physical Plant
Advisor: Dave Holsen
Abstract: My hope is to identify what it is that promotes student recycling habits and to provide information about the advantages of participating in recycling programs both on campus and off of campus.

36

Title: Excavations at a Prehistoric Blackduck Site on the Minnesota Prairie
Presenter(s): Christopher Moose, Amanda McCracken, Lora Kludt, Tyler Smith
Department: Anthropology and Earth Science
Advisor: Dr. Michael Michlovic
Abstract: Archaeological excavations were conducted at 21CY39 during three separate field seasons. This prehistoric site is located on the Campbell beach ridge of glacial Lake Agassiz, about 15 miles east of Moorhead, Minnesota. Cultural materials from a Native American campsite were found consisting of ceramics, lithic artifacts and animal bone. Pottery belonging to the Blackduck cultural tradition, and diagnostic lithic artifacts typical of the late Plains prehistoric period were found here. Animal bones include mainly of bison elements. A single radiocarbon date provides an age for the site of about AD 950. MSUM crews excavated 21CY39 to develop a better understanding of the Blackduck ceramic culture. Blackduck is typically found in the woodlands of central and northern Minnesota and in northwest Ontario. The Blackduck component at 21CY39 could aid in explaining its presence on the prairies of western Minnesota. The excavations were also designed to provide field and research experience for MSUM archaeology students. This report reviews the finds of three field seasons in 1985, 1991 and 2002.

38

Title: Is Mitochondrial Inheritance Tissue Specific? A New Look at the mtDNA Dogma from a Cell Biology Perspective
Presenter(s): Heidi Johnson, Jen Risan, Austin McCoy
Department: Biology
Advisor: Dr. Ellen Brisch
Abstract: Is Mitochondrial Inheritance Tissue Specific? A New Look at the mtDNA Dogma from a Cell Biology Perspective. Heidi Jo Johnson, Austin McCoy and Jen Risan Mitochondria play critical roles in the generation of metabolic energy (ATP) in eukaryotic cells. ATP is essential in driving many of the reactions that take place in the body. The role of a mitochondrion is to maximize and control the production of ATP. Furthermore, these cytoplasmic organelles make their own circular DNA, which is referred to as mitochondrial DNA (mtDNA). It is important to note that there is a distinction between nuclear DNA and mtDNA. While nuclear DNA encodes most of the proteins that drive mitochondrial processes, some critical ATP-producing enzymes are encoded by the mitochondrial genome. Mitochondria are extremely important to study because almost any mutation in mtDNA leaves an organism somewhat debilitated. Mitochondria have been thought to be maternally inherited for over twenty years. Evidence from these experiments shows that a child's mtDNA will be identical to that of the mother. Does this mean that there is no paternally inherited mtDNA? Maybe not. Researchers have mainly focused on testing mtDNA in blood samples and have not tested other tissues in the body to determine if these are maternally inherited also. Our approach to investigating mitochondrial inheritance is to find out if it is tissue specific. Initially to test this, we are planning to sequence the mtDNA taken from two different strains of mice. Next, we plan to cross our parent mice and sequence the mtDNA of their offspring. We will be sequencing mtDNA from the blood and also from the muscle to see if mtDNA inheritance is, indeed, tissue specific. Finding out if mitochondrial inheritance is tissue specific is an important step for figuring out what cellular mechanisms are required to direct the mitochondria into different tissues. This may open up a whole new way of looking at mitochondrial inheritance and ultimately show us how this system is regulated.

39

Title: Antipredetor Competence of Convict Cichlids and its relation to their Skeletal Development.
Presenter(s): Anusha Mishra, Bree Hamann
Department: Biology
Advisor: Dr. Ellen Brisch & Dr. Brian Wisenden
Abstract: The size of the fry (young cichlids) makes an impact on their response to predator stimulus. It has been found in earlier studies that a sharp rise in antipredator competence is observed when the fry are between 7.5-8.5mm in size. In our study, we are testing for sharp developmental changes, especially skeletal, in the time when the cichlids grow from 7-7.5mm to 8.5-9mm in size. Our target is to relate the sharp behavioral change to the developmental stage of the fry.

40

Title: Strong African American Women in the Writings of Charles Chesnutt and Zora Neale Hurston
Presenter(s): Kimberly Fedorenko, Bobby Duncan
Department: English
Advisor: Dr. Hazel Retzlaff
Abstract: A comparison of strong African American female characters as seen from both the male and female perspecives. We will discuss the intersection of race and gender issues within Charles Chesnutt's "Goophered Grapevine" and Hurston's "Their Eyes Were Watching God."

41

Title: The Soviet Economy: 1914-1964
Presenter(s): Meridith Sanders
Department: Political Science
Advisor: Dr. Andrew Conteh
Abstract: The economy of the former Soviet Union has been surrounded with controversy since the Revolution in 1917. This presentation begins with an examination of the economy before the Bolshevik revolution, then continues with an explanation of the various eras of each leader following the Revolution until 1964. The sectors of the economy will be discussed, including military, industry, and agriculture.

43

Title: Trends in the College Wage Premium: 1970-2000
Presenter(s): Kelli Steffl
Department: Economics
Advisor: Dr. Oscar Flores
Abstract: The speech will focus on the trend of the collage wage premium over the past three decades; 1970-2000. A present valuation model will be used to determine the college wage premium over each decade, and examination of why the trend is occurring and predictions of its future path and implications will be included.

44

Title: Lymphedema: What is it?
Presenter(s): Ronda Stenzel
Department: Athletic Training
Advisor: Dr. Dawn Hammerschmidt
Abstract: Lymphedma is the excessive accumulation of lymphatic fluid in the interstitial spaces of the body. This presentation will discuss the causes, types, signs and symptoms, prevention, and treatments of lymphedema. Also, a case study of severe lymphedema will be reviewed.

46

Title: Differential ERK Activation in Chinese Hamster Lung (CCL39) Fibroblasts by Primary and Secondary Alcohols
Presenter(s): JaDean Anderson, Jessica Johnson, Rachel Sang
Department: Biology
Advisor: Dr. Mark Wallert
Abstract: Serum, growth factors, and lysophosphatidic acid activate the Na+-H+ exchanger (NHE) in Chinese hamster lung cells (CCL39). Recently, our laboratory reported that the a1-adrenergic agonist phenylephrine (PE) activates NHE through an ERK-dependent pathway. We believe that PE stimulation involves several intermediates in the regulation of NHE. One pathway involves the activation of Phospholipase Cß, Protein Kinase Ca, Raf-1, MEK and Erk. A second potential pathway, involves the PKC-mediated activation of Phospholipase D (PLD). We also believe that LPA activates Erk through the intermediates RhoA and PLD. PLD converts phosphotidocholine to choline and phosphatidic acid. In some cells types, phosphatidic acid leads to the activation of the Ras-Erk pathway directly or by activating another isoform of PKC that can phosphorylate Raf, MEK, or Erk. The goal of our experiments is to verify the involvement of PLD in the activation of Erk and NHE. The involvement of PLD in Erk activation was tested by the addition of the primary alcohols butanol and ethanol to cells. In the presence of ethanol and butanol Erk activation by PE was completely blocked and LPA activation of Erk was dramatically reduced. Three proteins are primarily involved in the regulation of stress fiber formation and cell migration. They are Erk, RhoA and NHE1. Since PLD regulates the activation of Erk and NHE1 in CCL39 cells we believe it may also be involved in controlling formation of stress fibers. To determine this involvement, the ability of CCL39 cells to form stress fibers in the presence of butanol will be measured. Additionally, a role for PLD in cell migration will be examined using a wound assay where the rate of cell migration into a wounded area is measured. If PLD plays a part in stress fiber formation, the cells rate of migration will be reduced.

47

Title: Can I Build My Own House? A Study into the Industrial Organization of the new Single-Family Housing Industry In Fargo, ND.
Presenter(s): Trevor Ernst
Department: Economics
Advisor: Dr. Oscar Flores
Abstract: I researched the new single-family housing industry in Fargo, ND to determine the number of firms and the market share of each firm over this past Century. I then develop the paper into explaning why there is a certain number of firms, the firms market shares, where firms price their homes, and if there are significant barriers to entry in the new single-family residential construction market. I then explain the results, their implications, and answer the question posed in my title.

48

Title: The Hsiung-nu Confederacy and the Ho-chin System: Sino-nomadic relations in Classical China before Emperor Wu
Presenter(s): Markus Krueger
Department: History
Advisor: Dr. Henry Chan
Abstract: In the Early Han dynasty (the first and second centuries B.C.) the Chinese found themselves challenged the newly united tribes of the Hsiung-nu Confederacy. These "barbarians" initially gained the upper hand in the contest between the nomads and the Chinese, forcing the Han to accept peace on the Hsiung-nu's terms. The stipulations of these ho-chin treaties put the Han dynasty in an uncomfortable position of inferiority and were constantly broken by Hsiung-nu raiding parties. This presentation examines why the ho-chin foreign policy failed to meet its objectives.

49

Title: Development of a Quantitative Assay to Measure Cancer Cell Migration
Presenter(s): Amanda Anania
Department: Biology
Advisor: Dr. Mark Wallert
Abstract: Cancer can be defined as the uncontrollable growth of mutated cells. Cancer begins with a single cell acquiring a genetic change. This genetically altered cell then grows and divides eventually leading to the formation of millions of abnormal cells. This collection of abnormal cells is better known as a tumor. A malignant tumor has the capability to invade and spread to surrounding healthy tissues. Malignant tumors are what we define as "cancer" due to their ability to metastasize. Metastasis is the migration of tumor cells from one location to another. Our experiments are designed to develop a procedure to quantify the migration of tumor cells into a protein matrix. The matrix we will use is called matrigel, which is isolated from Engebreth-Holm-Swarm (EHS) Mouse Tumors. It is commonly used as an attachment matrix for tumor cells. A number of cancer cells are known to migrate through the matrix when cultured within the gel. The development of the procedure will include the determination of the appropriate amounts of cells and matrix to use and to identify the best mechanism for visualizing cells that have migrated into the matrix. The procedure will be developed using MDA-MB-231 cells, a very aggressive human breast cancer cell line. Once established, the procedure will be used in our laboratory to measure migratory potential of a variety of cancer cells.

50

Title: Graphic Communications and What It Can Do For You!
Presenter(s): Davina Doris, Tara Allord, Jodi Johnson
Department: Graphic Communications
Advisor: Dr. Michael McCord
Abstract: We propose to present and discuss the different aspects of MSU Moorhead's Graphic Communications program. We will touch on each of the emphases within the major, which are Digital Design and Production, and Multimedia Development. With each emphasis we will provide an overview of the required classes, along with examples of students work. We will discuss options for minor degrees, organizations available for students to be involved in, and possible job options upon graduation.

51

Title: Stuffed Shells - Original Fiction
Presenter(s): Kris Benson
Department: English
Advisor: Dr. Michael McCord
Abstract: I will be reading a short story I wrote about... Well, you'll just have to find out what it's about.

52

Title: uPA and Its Role in Breast Cancer: Signaling Pathways and Cellular Migration
Presenter(s): Heidi Boyum, Hillary Thronson, Michelle Hagen
Department: Biology
Advisor: Dr. Mark Wallert
Abstract: The sodium-hydrogen exchanger (NHE1) is a mechanism responsible for intracellular pH (pHi) regulation. NHE1 exchanges intracellular H+ for extracellular Na+ in a 1:1 ratio. This activity results in an extracellular acidification that facilitates cellular motility in both normal and tumorgenic cells. In addition, NHE1 activity is linked to the formation of stress fibers. These structures may or may not play a role in cell migration and invasion. The epidermal growth factor pathway involving extracellular signal-regulated kinase (ERK) is one way that regulates NHE1 activity. The ERK pathway has been directly linked to some forms of breast cancer. Approximately one-half of all breast tumors express more activated ERK as compared with surrounding benign tissue. NHE1 can also be activated by a pathway that is independent of ERK, which relies on a protein known as Rho-associated kinase (ROCK). Once ROCK activity has been initiated, it can then either directly activate NHE1 or indirectly activate the exchanger via RhoA. NHE1 activation leads to stress fiber formation, which may induce tumor cell migration. Urokinase-type plasminogen activator (uPA) binds to the uPA receptor (uPAR) and facilitates a proteolytic cascade. uPAR is a multifunctional protein that initiates signaling events that affect cell adhesion, migration and proliferation. The pathway by which uPA acts is still unknown, however, a striking feature of malignant solid tumors is the over-expression of uPA. Present data shows that uPA activates ERK in various breast cell lines. The pathway by which uPA acts has been analyzed using the ERK inhibitor PD98059 as well as the ROCK inhibitor Y27632. Further analysis of the RhoA pathway was conducted by stably transfecting breast cells with fluorescently labeled RhoA. Finally, wound assays were conducted to explore cell migration in response to uPA stimulation.

53

Title: Counselor Self-Disclosure: Helpful or harmful?
Presenter(s): Jennifer Malley
Department: Counseling & Student Affairs
Advisor: Dr. Patricia Neuman
Abstract: The purpose of this experiment was to examine the kind of information clients want counselors to disclose to them. The participants were thirty students seeking services at the Counseling Center at Minnesota State University Moorhead. Participants were asked to rate statements regarding different kinds of information they want counselors to disclose. It was hypothesized that there will be a difference in preference for items clients want disclosed by the counselor. I analyzed ratings on the Counselor Disclosure Scale (Hendrick, 1988) in terms of Hendrick's six subscales using a one-way Analysis of Variance (ANOVA). An alpha level of $p < 0.05$ was used.

54

Title: Asturias: A Region Facing an Uncertain Future at the Hands of the "Black Sea"
Presenter(s): Jon Narlock, Melissa Redlinger
Department: Spanish
Advisor: Dr. Benjamin Smith
Abstract: The oil tanker "Prestige" sunk off the coast of Spain in November carrying more oil than the Exxon Valdeze which prior to this was one of the wost oil spills in history. The oil has killed countless animals in the area of Spain and has put many of the inhabitants of the costal regions, like Asturias, out of work. The presentation will give background information on the region of Asturias, the events that led to the sinking of the tanker, the spanish government's position, and the affects it has had on the people of the region.

55

Title: Cheerleading Is A Sport
Presenter(s): Jeri Lynn Nelson
Department: English
Advisor: Dr. Michael McCord
Abstract: This research paper is designed to give cheerleading the acknowledgment of being a sport. I will discuss the athletic ability the sport entails as well the misconceptions that surrounds it.

56

Title: A Lesson: Educational Methods Within Toni Cade Bambara's "The Lesson"
Presenter(s): Brad Miller
Department: English
Advisor: Dr. SuEllen Shaw
Abstract: Toni Cade Bambara's "The Lesson," illustrates educational practices useful to future educators. This short story depicts inner-city children who experience a lesson regarding their social situation in an unexpected place. Although fictional, Bambara's "The Lesson" exemplifies effective teaching methods. This presentation will view "The Lesson" through a case study standpoint and concentrate on the educational methods applied.

57

Title: Energy Consumption and Economic Growth
Presenter(s): Akiko Takeuchi
Department: Economics
Advisor: Dr. Oscar Flores
Abstract: No abstract submitted.

58

Title: The Effects UV Light May Have on Longevity
Presenter(s): Anna Naig
Department: Biology & Chemistry
Advisor: Dr. Michelle Malott
Abstract: The transcription factor FOXO3a has the capability to initiate both programmed cell death and cell survival mechanisms. When the transcription factor is bound to DNA it promotes the transcription of proteins that initiate these cellular processes. To inhibit FOXO3a from promoting transcription it is physically removed from the nucleus, which holds the cell's DNA. It is known that cellular stress, such as UV light, causes apoptosis (programmed cell death) or cell cycle arrest. The latter of which conserves energy and works in conjunction with the cell survival mechanisms. As a result, it is probable that following UV exposure, FOXO3a will be in the nucleus of the cell and thus activated. However, it is expected that the majority of FOXO3a would be found in the cytoplasm in response to UV light due to current hypotheses concerning the behavior of the transcription factor. To determine if FOXO3a is activated in response to UV light, Chinese Hamster Lung Fibroblasts (CCL39 cells) will be transfected with a wild type FOXO3a containing a hemaglutanin (HA) tag, and then exposed to UV light. After exposure the cells will be labeled with anti-HA antibodies conjugated with Fluoroscein, then the cells will be mounted on slides and examined microscopically to determine the location of FOXO3a—either in the nucleus or in the cytoplasm. FOXO3a mutants, which are incapable of phosphorylation, will also be transfected into CCL39 cells. These mutants contain alanines where phosphorylatable amino acids belong; since alanines cannot be phosphorylated those mutated sites are incapable of being phosphorylated. These mutants will be used to determine what regulatory phosphorylation sites on FOXO3a are involved in the translocation after exposure to UV light.

59

Title: The Cause for Terrorism: An Analysis of the British Suffragette Movement
Presenter(s): Heather Ehrichs
Department: Political Science & Women's Studies
Advisor: Dr. Tracy Scholl
Abstract: This paper critically analyzes the employment of WSPU terrorist tactics in winning the vote for Women in England.

60

Title: The impact of September 11 on the Middle East
Presenter(s): Heather Ehrichs
Department: Political Science
Advisor: Dr. Andrew Conteh
Abstract: This paper critically analyzes the role of the Middle Eastern states in the September 11th tragedy, US Middle Eastern Policy and the impact on the region post September 11.

61

Title: Characterization of B-ethynyl-9-BBN and Z-1-Bromo-(9-BBN)-2-Catecholborylethene
Presenter(s): Michelle Hagen, Neil Gartin
Department: Chemistry
Advisor: Dr. Gary Edvenson
Abstract: The reaction between (trimethylsilyl)acetylene and B-Chloro-9-borabicyclo[3,3,1]nonane (B-Cl-9-BBN) produced B-ethynyl-9-BBN. The product was complexed with pyridine to reduce product-product interactions and added to B-bromocatechol borane to produced Z-1-Bromo-(9-BBN)-2-Catecholborylethene. The title compounds were characterized using 1H, 13C, and 11B NMR spectroscopy as well as elemental analysis. These compounds are precursors to a uracil derivative containing boron. The uracil nucleoside can then be tested for use in boron neutron capture therapy (BNCT), a method used for treating certain types of cancer.

62

Title: The "American Dream", Achieved by Some Unrealized by Many.
Presenter(s): Troy Olness
Department: Sociology
Advisor: Dr. Lee Vigilant
Abstract: Few nations of the world have an experience quite like that of the United States. With the boom of industrialization came the need to fill factories and other related industries with masses of immigrant workers. To achieve this phrase "The American Dream" led some to believe there was a true oppertunity for foreign workers to achieve jobs and riches. In this presentation a study of the results of this phrase will be coupled with an analysis of the host of social problems that were and continue to be alive in modern day American society.

63

Title: Media in Uzbekistan (after the collapse of Soviet Socialistic Regime)
Presenter(s): Dilnoza Kurchieva
Department: Political Science
Advisor: Dr. Andrew Conteh
Abstract: The presentation will cover generally Uzbek Media at the curent time as well as the achievements in the field of journalism in the newly independent Uzbekistan. Apparently, it will also include disputable issues and problems that the media are facing these days.

65

Title: Detrimental Effects of Rock Music
Presenter(s): Jodi Grau, Jenny Tholund
Department: English
Advisor: Dr. Michael McCord
Abstract: Although it may not yet be proven to be destructive, rock music is a symbol of rebellion and plays a detrimental role in the life of a teenager. No matter how small or large the number of statistics are for the crimes and violent acts that are done by teenagers influenced by rock music, the number of lives that are affected is on the rise. This problem needs to be taken care of, if not for the violent acts and crimes to decrease, then for the teen's lives that are affected daily by the music they listen to.

66

Title: Detection of DNA Damage in Chinese Hamster Lung Cells Exposed to Ultra-Violet Radiation.
Presenter(s): Sara Larson, Faith Dahl, Jeremy Grabinjer , Alisha Pagel
Department: Biology
Advisor: Dr. Michelle Malott
Abstract: DNA damage from exposure to adverse environmental conditions such as ultra-violet (UV) radiation and mutagenic chemicals is known to lead to disease and cancer. One way to detect such damage is with a single cell gel electrophorophoresis (SCGE) procedure known as the Comet Assay. The Comet Assay can detect DNA breaks in individual mammalian cells. After UV exposure, cellular mechanisms begin to repair DNA damage. This presentation will compare DNA breakage in cells exposed to UV radiation and allowed various recovery times. In this experiment, cells will be treated with UV light and allowed several different recovery times. Next, they will be embedded in agarose on a microscope slide, the cell membranes lysed and the slides placed in an electric field. The broken pieces of DNA will migrate out of the cell towards the anode during this process, causing the cell and its DNA to resemble a comet. The more damaged the DNA is, the smaller the resulting pieces and the further they will migrate out of the cell resulting in a longer the comet tail. DNA that has been repaired by cellular mechanisms will subtract from the tail's length. The DNA will be stained with a fluorescent dye allowing us to use a fluorescent microscope and a computer-imaging program to visualize the comets. Our hypothesis is that longer recovery times after exposure to UV will allow for more DNA repair and therefore a reduced amount of DNA damage will be detected by the Comet Assay. Preliminary data indicates that 6 hours after exposure the number of cells exhibiting long comet tails has decreased.

67

Title: Exploring language issues through Jean Fritz's Homesick
Presenter(s): Jennifer Hoepfner
Department: English
Advisor: Dr. SuEllen Shaw
Abstract: We use language everyday, yet we are often not aware of the power of our words. Language is more than a tool of communication; it is a way to shape our reality and control others. Through the story Homesick by Jean Fritz, we will explore language's deeper meanings.

68

Title: Cost Benefit Anaylsis of Closing Natioanl Parks to Snowmobiles
Presenter(s): Mindy Heller
Department: Economics
Advisor: Dr. Oscar Flores
Abstract: Looks and the costs to the surrounding communites if the National Parks would be closed to snowmobilers and the benefits to the environment if the National Parks were closed to snowmobiles.

69

Title: The Activity and Regulatory Process of FOXO3a Transcription Factor in Relation to Oxidative Stress.
Presenter(s): Jessica Heck , Jennifer Dale, Kimberly Mulder, Diane Nelson
Department: Biology
Advisor: Dr. Michelle Malott
Abstract: The FOXO proteins are transcription factors that control gene expresssion. These proteins have been recognized as critical to both normal and abnormal developmental and cellular processes including cell division and apoptosis (cellular suicide). FOXO3a is thought to regulate expresssion of genes involved in cell cycle regulation and apoptosis, playing a pivotal role in the regulation of cellular differentiation and cell proliferation, both during development and in the adult. The capacity of cells to repair DNA damaged by oxidative stress and reactive oxygen species (ROS), correlates to increased longevity. It has been considered that FOXO3a may induce gene expression that allows for the repair of DNA damaged as a result of oxidative stress. The key to such processes as development, tissue repair, and the development of cancer depends on a balance between cell proliferation and cell death. In order to determine if FOXO3a activity is regulated in response to oxidative stress and related to apoptosis, cells will be exposed to UV light and hydrogen peroxide and both the phosphorylation status of the protein and the survival rate of cells will be monitored. FOXO3a phosphorylation will be examined by Immunoblot analysis using antibodies specific to the phosphate on Thr32. Preliminary data indicates that FOXO3a is phosphorylated in response to oxidative stresss, although the exact mechanism of this phosphorylation is not clear. Our experiments will allow better understanding of the relationship between the phosphorylation of FOXO3a in response to cellular stress and the induction of the cellular suicide program known as apoptosis.

70

Title: A Graphic Designer's Pursuit
Presenter(s): Caley Steward, Garth Blomberg, Phil Lowe, Emily Zak, Jocie Suess
Department: Art & Design
Advisor: Julie Mader-Meersman
Abstract: Our display will demonstrate the importance of the graphic designer's knowledge of typography, design elements, and concepts to achieve effective visual communication.

72

Title: The Effect Of Ultra Violet Radiation of FKHR-L1 Protein in Yeast
Presenter(s): Amanda Hillman, Anojinie Nagahawatte
Department: Biology
Advisor: Dr. Ellen Brisch & Dr. Michelle Mallot
Abstract: FKHRL1 is a transcription factor, which is a protein involved in binding to and regulating DNA expression. FKHRL1 belongs to the FOXO family of Forkhead transcription factors, which are involved in controlling the cell cycle, cell death, cell metabolism and cellular response to oxidative stress. These pathways seem to be conserved throughout evolution as they use similar mechanisms and proteins in variety of organisms, such as Mus musculus, C. elegans and Xenopus. S. cerevisiae is a simple eukaryotic organism that is widely used in experiments that study regulation and mechanisms of cell cycle, cell death and other key processes. Thus we hypothesize that S. cerevisiae will contain a homologue of human FKHRL1. Our experiments are designed to examine whether S. cerevisiae contains a human FKHRL1 homologue and if so, if its regulation is similar to that in humans. To test our hypothesis, we are purifying protein extracts from yeast cells. We are using extracts in combination with specific human antibodies (anti-FKHRL1) in a western blot assay. If our experiments are successful, yeast can be used as model organism for studying human FKHRL1.

73

Title: AIDS Education Among Kenya's Street Children; An Anthropological Approach
Presenter(s): Julie Larson
Department: Anthropology and Earth Science
Advisor: Dr. Bruce Roberts & Dr. Donna Rosh
Abstract: This paper focuses on Anthropologically relevant ways to teach Kenyan street children about the dangers of HIV/AIDS. It will compare facts and cultural myths regarding this disease. It will present ways in which we all can become locally and globally involved in preventing the spread of HIV/AIDS.

74

Title: The Changing Structure of the Health Care Industry
Presenter(s): Jason Sivers
Department: Economics
Advisor: Dr. Oscar Flores
Abstract: No abstract submitted.

75

Title: Lightcurve of 625 Xenia
Presenter(s): Sherry Fieber
Department: Physics & Astronomy
Advisor: Dr. Walter Worman
Abstract: 625 Xenia was observed for eight nights ussing CCD Photometry during the months of April and May 1998. The period of rotation was 21.101 with an error of .032 hours, and the light curve had amplitude of 0.50 with an error of .05 magnitude. The asteroid's semi-major axis is 2.65 astonomical units. Xenia is a 2a-mainbelt asteroid.

76

Title: Political Campaigns and the Media: Who Sets the Agenda?
Presenter(s): Amy Schimelfenig
Department: Mass Communications
Advisor: Dr. Martin Grindeland
Abstract: Each election year, United State Citizens hear a barrage of speeches, debates and media commentary about the campaigns and their candidates. The question remains to be answered: Who sets the agenda about which the media discuss and the candidates debate? This presentation identifies where the problem lies, discusses previously-voiced solutions and makes recommendations to the media based on research of previous campaigns and subsequent media coverage.

77

Title: Signal Filter for Nuclear Magnetic Resonance Spectrometer
Presenter(s): Ryan Johnson
Department: Physics & Astronomy
Advisor: Dr. Ananda Shastri
Abstract: For the purpose of building a Nuclear Magnetic Resonance Spectrometer, a filter was needed as part of the electronics to eliminate any noise from a given signal. This was constructed by setting a series of low pass filters on a rotary switch that could be turned with a knob. The switch had four stationary stages where components could be attached and a rod up the middle that could be turned, creating a connection between a selected component and anything wired to the rod. In this case, since a low pass filter is constructed by wiring a resistor in series with a capacitor to ground, the rod was wired to a resistor and capacitors were attached to the stages. The whole apparatus was put into an aluminum chassis and the capacitors were grounded to the case. The four stages were divided so that the top two filtered channel 1 while the bottom two filtered channel 2. The filters were cascaded so that in each cannel the signal gets filtered twice. This was done because a signal filtered twice has a sharper drop off at the 3db point. A 3db point is the frequency where a signal will be attenuated by 70% and continue to drop off from there.

79

Title: The Epic Henry V
Presenter(s): Adam Quesnell
Department: English
Advisor: Dr. Sandy Pearce
Abstract: I am going to present a paper that argues Shakespeare's motives for utilizing epic devices in Henry V.

81

Title: The Asian Financial Crisis
Presenter(s): Quincy Backen, Blaine Anderson
Department: English
Advisor: Dr. Michael McCord
Abstract: This presentation will examine the causes and effects of the Asian financial crisis. We will give insight to the underlying reasons for the collapse of the Asian currencies and the effect it had on the world economy.

82

Title: "Anselm's Argument for the Existence of God"
Presenter(s): Martin Eyestone
Department: Philosophy
Advisor: Dr. Philip Mouch
Abstract: Anselm, a medieval philosopher and Catholic saint, gifted philosophy with a well-known argument for the existence of God. This argument, commonly called the "ontological argument," has caused much controversy in the centuries since Anselm formulated it. The purpose of the paper I will present is to point out some potential problems, both with how Anselm states the argument in Chapter II of his Proslogion and with some recent interpretations of this version of the argument. The focus will be on issues with modal concepts, which Anselm may or may not have utilized in the argument.

83

Title: Activation of ERK, NHE, and PKC-dependent stimulation of RhoA are necessary for actin stress fiber formation due to the alpha-1 adrenergic receptor agonist phenylephrine
Presenter(s): Andrew McCoy, Justin Voog
Department: Biology
Advisor: Dr. Joseph Provost
Abstract: Stress fiber formation in Chinese hamster lung fibroblasts (CCL39) requires both RhoA and NHE. We have recently demonstrated that ERK and NHE are activated in response to the a1-adrenergic agonist Phenyleprhine (PE). This activation was blocked by the MEK inhibitor PD98059 and by the Rock inhibitor Y27632. We have also shown that RhoA activation is blocked when cells are treated with PKC inhibitor. This suggests that RhoA is stimulated in a PKC dependent manner. Finding a second G-protein coupled pathway that activates both RhoA and NHE led us to investigate the ability of PE to stimulate stress fiber formation. Incubation of CCL39 cells with 50 – 100 mM PE for 15 minutes induced the formation of stress fibers. This formation was blocked in the presence of PD98059 or Y27632. To verify the ability of PE to activate RhoA, EGFP-tagged RhoA was used to observe translocation. Control cells displayed RhoA dispersed throughout the cytoplasm, while PE stimulated cells showed RhoA predominantly associated with the plasma membrane. To determine the requirement for NHE in stress fiber formation, PS120 cells were used. PS120 cells are Chinese hamster lung fibroblasts that do not express NHE. PS120 cells incubated with PE did not show stress fiber formation. If these cells were treated with trimethlyammonium (TMA) chloride at the same time as PE stimulation stress fibers did form. The addition of 20 mM TMA increases intracellular pH by approximately 0.25 pH units, a value similar to PE addition. This data indicates that cells require NHE to increase pHi in order to form stress fibers. Cumulatively, these data show that PE induced stress fiber formation in CCL39 cells requires ERK, RhoA and NHE activation. The physiological role of the a1-adrenergic receptor stimulation in stress fiber formation is still uncertain.

84

Title: Former Soviet Countries at a Glance.
Presenter(s): Vusala Azizova, Ulkar Babayeva, Martin Doyle, Katya Volchkova, Ben Bentley, Natalya Denysko, Alua Karpykova, Max Taha
Department: American Studies
Advisor: Kim Gillete
Abstract: Although The Former Soviet Union was known as a cold communist regime, the true face of Soviet union was otherwise. The Soviet people, were peaceful and hardworking individuals who strived for success and left a significant mark in World's history. Five students from Former Soviet Union will give brief insight into the current conditions of their countries after the collapse of the Soviet Union. They will highlight main achievements of their countries. Furthermore, two Americans with insights from their experiences will share some of their perceptions.

85

Title: How birth order affects you
Presenter(s): Sarah Bosl, Devon Hanson, Jennifer Strand
Department: English
Advisor: Dr. Michael McCord
Abstract: Have you ever wondered why you are the way you are or why someone else is the way they are? Birth order may be able to help you understand yourself and others. Where you are placed in your family can have an influence on your personality traits and career interests. We will be presenting characteristics of birth order that influence the developing person.

86

Title: AAC Technology: The Dynawrite
Presenter(s): Lisa Fanfulik, Marin Almer, Kara Skjoiten, Chris Liberda, Chrystal Myhre
Department: Speech/Language/Hearing Sciences
Advisor: Dr. Marie Swanson
Abstract: In the past few years technology has come a long way. It has put communication at the tip of our fingers. Assistive technology has been able to take advantage of today's high level of technology. It has opened many doors for individuals with communication impairments. Augmentative and Alternative communication(AAC) gives those individuals an alternative way to communicate. There are many possible systems or devices that could be used to assist these people, but we will be presenting about one in particular. The "Dynawrite" is an AAC device that is much like a small laptop computer, but also utilizes a synthesized voice. We will present on the general functioning of the system, demonstrate the main features, give characteristics of those who might use the device through a client profile, and talk about cost and where to find it.

87

Title: Have YOU Heard of Nutella?
Presenter(s): Lorael Jerger
Department: Mass Communications
Advisor: Dr. Susanne Williams
Abstract: Follow the steps an MSUM student public relations team pursued to execute a PR campaign on campus for Nutella, a creamy chocolate-hazelnut spread. Learn how they implemented their campaign from research to execution, including the creation of "Nutella-Boy!" If you haven't tasted the No.1 best-selling spread worldwide, come to the presentation for a delicious sample.

88

Title: Gender Differences: Does Competition vs. Non-competition in Advertisements Influence Males and Females Differently?
Presenter(s): Erin Kirmis
Department: Psychology
Advisor: Dr. Christine Smith
Abstract: This experiment examined whether males and females differ in their preference for a gender-neutral winter jacket when advertised emphasizing competition or non-competition. My hypothesis was males would be more likely to purchase the product when they were shown the advertisement emphasizing competition and females' desire to purchase the product would not be influenced by the type of advertisement they saw. Results showed males were not more likely to desire to purchase the product when it was advertised as emphasizing competition.

89

Title: The War of Religion: the ongoing conflict in Northern Ireland (a work in progress)
Presenter(s): Jenel J. Stelton-Holtmeier
Department: Political Science
Advisor: Dr. Andrew Conteh
Abstract: Religious conflict is not new in the world. The conflict in Northern Ireland, however, is unique when compared to many of the conflicts to which we are exposed on a nearly daily basis. This uniqueness is that the conflict is not between two groups of completely different relgions; but, rather, between two Christian denominations: Catholic and Protestant. This presentation will focus on the claims of each side and why the attempts to establish peace have failed.

90

Title: The Parent-Child Communication Program: Case Study #4
Presenter(s): Jack King, Sara Diede
Department: Speech/Language/Hearing Sciences
Advisor: Dr. Louis J. De Maio
Abstract: Our presentation is a study on how a parent changes their communication techniques when trained with the Parent Child Communication Program (PCCP). Directive and Non-Directive communication styles are the main focus of the program. The study includes a literature review, metholdolgy, results, and discussion.

91

Title: 35mm SLR Camera Introduction
Presenter(s): Nicholas Rahrich, Jonathan Aisenbrey
Department: English
Advisor: Dr. Michael McCord
Abstract: This presentation is an introduction to 35mm SLR cameras by use of Microsoft PowerPoint and hands-on camera parts. The presentation instructs use of the camera and how to take effective pictures. The presentation is aimed at an audience of beginners with an interest in photography.

92

Title: My Twinn Dolls: A Pop Culture Study
Presenter(s): Amber Boyd
Department: American Studies
Advisor: Dr. Helen Sheumaker
Abstract: A glimpse into pop culture theory through My Twinn Dolls (dolls made to look like that special child in one's life) through the use of aesthetics, social theories, and overheads. Thus, the Dolls' true nature will be revealed.

93

Title: Effects on the Activity of Malate Dehydrogenase due to Substitution of Threonine-204
Presenter(s): Mario Fernandez
Department: Biology
Advisor: Dr. Joseph Provost
Abstract: Malate Dehydrogenase (MDH) is responsible for catalyzing the production of oxaloacetate from malate, which is the last step of the Citric Acid Cycle. This reaction is NADH dependent. MDH is found in eukaryotic cells as two distinct isozymes, the mitochondrial and cytoplasmic form. Both forms of MDH consist of two similar subunits of about 35,000 daltons each. During the reaction MDH binds malate and reduces NAD+. The end products are oxaloacetate and NADH. Certain amino acids are involved in the binding of the substrate and activation of MDH. Our study focuses on Rat Liver Mitochondrial-MDH (RLM-MDH). Threonine-204, which is part of the amino acid sequence that includes the active site Histidine-200, is the amino acid that will be investigated. Substitution of the Threonine-189 in T. flavus, a thermophilic bacterium, causes the activity of the enzyme to increase. In our studies, we are interested to know how the substitution of Threonine-204 on RLM-MDH will affect the kinetic activity of the enzyme, by monitoring any change in the oxidation of NADH between the wild type and other mutated clones.

94

Title: Finding the Link Between Mitochondrial Dynamics and the Cell Cycle in Saccharomyces cerevisia
Presenter(s): Anna Naig
Department: Biology
Advisor: Dr. Ellen Brisch
Abstract: Mitochondria function to provide cells with energy for all metabolic processes. Throughout the cell cycle, mitochondria are highly dynamic; they continuously move and change shape depending on which stage of the cycle they are in. This process is termed mitochondrial dynamics. In Saccharomyces cerevisiae, a species of budding yeast, the inheritance of mitochondria from mother cell to daughter bud during cell division is an essential feature of yeast cell growth. Without the inheritance of mitochondria from the mother cell, the daughter bud cannot survive. Thus, mitochondrial dynamics is linked either directly or indirectly to genes that regulate the cell cycle. We are interested in understanding how mitochondrial inheritance is coordinated with the cell cycle, in specific, which genes control this process. To determine one or more of the genes that link these two processes, specific mutations in genes that regulate the cell cycle in yeast will be generated. This will be done by creating a piece of DNA which, when inserted into yeast, will replace a cell cycle gene of choice with an incomplete copy of that particular gene. As a result that particular gene will be inactivated. We will then observe these yeast cells by staining their mitochondria. Differences in the mitochondria of mutated yeast will indicate which cell cycle gene is linked to the process of mitochondrial dynamics.

95

Title: Continuation of using soil magnetic research to understand earthwork construction at Hopeton Earthworks.
Presenter(s): Kelsey Lowe
Department: Anthropology and Earth Science
Advisor: Dr. Rinita Dalan
Abstract: This poster presentation is a continuation of previous work using soil magnetic research to understand earthwork construction at Hopeton Earthworks. The site is located in Ross County, Ohio and was inhabited by the Hopewell culture from 1000/600 B.C.- A.D. 800/1000. The Hopeton Earthworks consist of a large circle and a large square, along with a long pair of straight lines and several smaller circles. My project involves a number of soil samples collected from three trenches located in the south and east walls in the southwest corner of the large square. I have conducted magnetic research at the Institute of Rock Magnetism for a more detailed analysis of these soils and to understand the construction of this earthwork as well as post-formation processes.

98

Title: Your Life is Waiting: Paxil and the phenomena of overmedication.
Presenter(s): Dan Reetz
Department: Sociology
Advisor: Dr. Lee Vigilant
Abstract: The presentation will be a 10 minute video and a short lecture/forum. It is compiled from interviews of college age students taking medications such as Paxil or Prozac, with text subtitling and original music. The piece was composed as an experiment in data presenation for researchers as well as a general concern for the medicated.

99

Title: FYE: A first semester class with lasting impact
Presenter(s): Jennifer Kocourek. Kristi Elder , Steven Fick, Rachel Temple
Department: Advising Support Center
Advisor: Sara Leigh
Abstract: A panel of upperclass students will discuss the difference FYE has made in their ollege experiences.

100

Title: Changing Roles of Azerbaijani Women. Problems or Opportunities
Presenter(s): Ulkar Babayeva, Martin Doyle
Department: Political Science
Advisor: Dr. Andrew Conteh
Abstract: Since the end of the Cold War, much attention has focused on challenges facing the political and economic development of the former Soviet republics. Significant levels of political and economic regression have resulted in the declining participation of women in most arenas of public and private life throughout the region. This presentation contends that one republic, The Republic of Azerbaijan, may be the exception to the rule in the transition period from communist domination to social democracy. Young women in Azerbaijan are redefining roles for political participation, independent social standing and cultural revival. The presentation suggests that while some segments of the Azerbaijani population are falling prey to political and economic decay, the generation of women maturing since the late 1980s is actively addressing a wide range of issues which will affect the entire state's future. Discussed in this presentation will be the changing traditional roles as wives and mothers in a predominantly Muslim society, active involvement as business and political leaders in a global community and the difficulty in adjusting to these shifting responsibilities for the young women and their families. This presentation finds that while many young women in Azerbaijan are following the expected "norms" of previous generations, a bold and brave group of young women is on the cutting edge of redefining problems as opportunities to a decided advantage for the "Land of Fire".

101
Title: Diego Rivera
Presenter(s): Abby Larson
Department: Spanish
Advisor: Dr. Benjamin Smith
Abstract: I will be presenting about the topic of Diego Rivera. His life and art in general.

102
Title: Personal theft rate versus poverty: a positive relationship
Presenter(s): Isaac Poku
Department: Economics
Advisor: Dr. Oscar Flores
Abstract: Examining the relationship between personal theft and poverty in fifty major cities in the US.

103
Title: Unknown
Presenter(s): Ian Flagg
Department: Economics
Advisor: Dr. Oscar Flores
Abstract: Economies of scale in the pharmaceutical industry

104
Title: The role of PKC in alpha-1-adrenergic activation of ERK and NHE in CCL39 fibroblasts
Presenter(s): Lisa Hansen, Heidi Boyum, Hillary Thronson
Department: Biology
Advisor: Dr. Joseph Provost
Abstract: The activation of the conventional isoforms of protein kinase C (PKC) by alpha-1-adrenergic receptors is well known. However, the role of PKC in regulating intracellular pH is not clear and is likely to differ with cell type. We have shown that phenylephrine (PE) activation of NHE requires ERK activity. The mechanism for PKC activation of ERK is thought to be mediated by a soluble tyrosine kinase, the serine kinase Raf or another mechanism. Alternatively, there are putative phosphorylation sites on the carboxyl terminus of NHE. In this study, we examined the role of PKC in ERK and NHE activation in CCL39 fibroblasts stimulated with PE. Addition of PMA leads to a robust increase in both phosphorylation of ERK and activation of NHE. Chronic stimulation with phorbol esters abolished the ability of PE to activate ERK or NHE. In a likewise fashion, pre-incubation of the cells with PKC inhibitors, Ro31-8220 or bisindoylmaleide-1, significantly blocked PE-induced activation of ERK and NHE. To determine which conventional isoform of PKC is involved, EGFP-PKC alpha, beta-1, beta-2 and gamma fusion proteins were transiently transfected and monitored for intracellular location following phorbol ester and PE stimulation. Addition of PMA induced the translocation of both PKC alpha and PKC gamma, but only PKC alpha translocated after incubation with PE. This was also observed by monitoring the translocation of endogenous PKC alpha to the membrane fractions. Further evidence for a role of PKC in regulation of intracellular homeostasis was determined by exogenous expression of dominant negative alleles of PKC. These data suggest that the conventional isoforms of PKC are involved in the ERK mediated activation of NHE by the alpha-1-adrenergic receptor. This work was supported by a grant from NSF (MCB-0088654 and DBI-0115927).

105
Title: Economic reality in the former socialist countries, in particular Bulgaria and the role of international organizations such as International Monetary Fund and The World Bank in their post-communism development
Presenter(s): Nikolay Alexandrov
Department: Political Science
Advisor: Dr. Andrew Conteh
Abstract: The purpose of this presentation is to discuss and analyze the new changes that the former Socialist countries faced,in particular Bulgaria and the significant role of the international organizations such the IMF, World Bank and The EU in their economic development during the Post-Cold War period.

106
Title: Elucidation of the Genetic Sequence for Pyruvate Phosphate Dikinase Regulatory Protein: A Novel Approach to Functional Genomics
Presenter(s): Jarrod Heck
Department: Biology
Advisor: Dr. Chris Chastain
Abstract: Pyruvate phosphate dikinase regulatory protein is responsible for the regulation of pyruvate phosphate dikinase, which plays an important role in controlling the flux of carbon through the photosynthetic cycle in C4 plants. Our objectives are to determine the DNA sequence of pyruvate phosphate dikinase regulatory protein (RP) from analysis of Arabidopsis seeds containing gene knockouts, and subsequently generate a recombinant clone for RP. The candidate DNA sequence will be obtained by using a bioinformatics approach to search gene databases containing the complete genome for Arabidopsis--for putative proteins likely to be RP. Arabidopsis seeds containing single gene knockouts for the putative proteins will then be ordered from the Salk Institute and Sygenta, and subsequently analyzed for RP activity via an immunoblot detection method. The absence of RP activity will be an indication that the gene possessing the transposed sequence, resulting it being knocked out, codes for RP. From here, a cDNA can be ordered and subcloned into a protein expression vector and induced to express RP protein whereby in vitro structural and functional studies can be done.

107
Title: Isolation and Purification of Minnow Chemical Attractants
Presenter(s): Jill Greenley, Brooks Angell
Department: Biology
Advisor: Dr. Brian Wisenden
Abstract: When minnows are captured by a predator, chemical attractants bring new predators that interfere with the first predator. This interference can allow the minnow an opportunity to escape. Powerful predator attractants have obvious application to the fishing industry for enhancement of lure attractiveness. The first step in this research is to convert the attractant to a stable dry form. In this experiment we tested if lyophilized (freeze dried) alarm cells retain biological activity.

108

Title: Set Yourself Apart: Benefits of Electronic Portfolios/Online Resumes
Presenter(s): Derek Plautz
Department: Technology
Advisor: Dr. Wade Swenson
Abstract: Electronic portfolios are the way of the future. They are much more than just paper resumes. They are interactive, in-depth, and a great way to showcase your talents, abilities, and potential. An electronic portfolio may be just what you need to get the job that you want.

109

Title: Effect of Protein Active Site Flexibility on Malate Dehydrogenase Thermostability
Presenter(s): Justin Noehre
Department: Biology
Advisor: Dr. Joseph Provost
Abstract: The role of protein structure in cold-adaptation has been studied in the arctic bacterium Aquaspillium arcticum. Structural analysis of malate dehydrogenase (MDH) in Aquaspillium arcticum and the thermopile Thermus flavus suggests that an increased relative flexibility of active site residues may be a factor in efficient catalytic activity at low temperatures. The purpose of this study is to determine the catalytic effect of increased active site flexibility on Escherichia coli MDH. We intend to make a single point mutation to MDH that will result in the substitution of alanine-207 with a less conformationallly hindering glycine. We will then isolate, purify, and quantitatively analyze the enzymatic ability of the mutant MDH. The results of this study will aid in understanding the role of protein structure in adaptation to temperature variation.

110

Title: Feminism in the Tri-College Area
Presenter(s): Lucy Tobin, Shanon Crabtree, Peter Mathis, Sarah Beauregard
Department: Women's Studies
Advisor: Dr. Tracy Scholl
Abstract: We are conducting an awareness documenary of MSUM, NDSU, and Concordia asking students and faculty/ administrators about their views on feminism and women's issues on campus. The video will contain short interviews of students and faculty around each campus as well as statistics for each regarding male to female ratio of students, faculty/ administrators and women's organizations as well as some general definitons of feminism and related issues.

111

Title: A Model for Ethical Decision Making
Presenter(s):
Department: Mass Communications
Advisor: Dr. Martin Grindeland
Abstract: This communications model explains the key elements necessary to take an individual down the correct path towards an ethical decision in either a professional or personal situation.

112

Title: Narrative structure of inmate false imprisonment web pages
Presenter(s): Nathan Shippee
Department: Sociology and Criminal Justice
Advisor: Dr. Joel Powell-Dahlquist
Abstract: I will present my findings on original research regarding the structure of the "stories" inmates post on web pages in which these inmates proclaim their innocence. The main direction of study is sociological.

113

Title: Use of Microsatellites for Assessing Reproductive Success in Fathead Minnows (*Pimephales promelas*).
Presenter(s): Justin Klitzke, Jason Brown
Department: Biology
Advisor: Dr. Michelle Malott
Abstract: The development of new DNA technologies has increased the opportunities to study genetic variation in populations. The genetic composition of a population can also be used to show reproductive success by tracing lineage. As a result of sexual reproduction, roughly half the genetic material in an individual comes from each parent; the offspring can then be linked to each parent based on their genetic makeup. In most populations each individual (unless clones) is genetically unique. This genetic uniqueness results from slight differences in DNA, these differences can be used as a genetic fingerprint to study lineage. Since most species share 99.9% of their DNA, the regions of the genome that contain the highest level of variation would be the most useful in resolving genetic fingerprints. Microsatellite DNA loci have among the highest levels of variation within most eukaryotic genomes, making them suitable for creating distinct genetic fingerprints. Microsatellites are short repetitive sequences that are highly polymorphic, these sequences can be isolated from the genome using PCR (Polymerase Chain Reaction), a method of DNA amplification. In this study we have developed a method for using microsatellites to analyze reproductive lineages and behavior in fathead minnows. Ultimately we will use these same techniques to examine breeding parasitism of Golden Shiners (*Notemigonus crysoleucas*) on Pumpkinseed Sunfish (*Lepomis gibbosus*). In this study we describe the general characteristics of using microsatellite DNA loci, the isolation (DNA from fins, fry, and eggs), viewing amplified microsatellites, and how to analyze data using fathead minnows (*Pimephales promelas*) as a focal species.

114

Title: A Research Proposal: Factors Influencing Successful Turkey (*Meleagris gallopavo*) Reintroduction in Northwestern MInnesota.
Presenter(s): Natasha W. Gruber, Katie R. Geray
Department: Biology
Advisor: Dr. Donna M. Stockrahm
Abstract: The Minnesota Department of Natural Resources (DNR) is currently working on a wild turkey (Meleagris gallopovo) reintroduction program in nothwestern Minnesota. We are working with the DNR to conduct a survey of local residents about turkey sightings in this region. Field observations will also be used to observe the success of wild turkeys. We will be collecting data by distributing surveys to local landowners within a fifteen-mile radius of the Red River. The survey will aid in collecting data on turkey locations and their habitat use, approximating the number of turkeys in this area, and their survival rate in northwestern Minnesota's winter climate. This study will ultimately aid the DNR wild turkey reintroduction plan and help them to evaluate the possibility of implementing a wild turky hunting season around the area of Moorhead, Minnesota.

115

Title: Shocked and Alarmed: alarm signals in electric fish
Presenter(s): Ahmad Samin
Department: Biology & Physics
Advisor: Dr. Brian Wisenden & Dr. Steve Lindaas
Abstract: Predation, and the risk of predation, govern much of animal behavior. In aquatic animals, chemical cues are used for the assessment of predation risk. In the fish group that includes the minnows, catfish, tetras among others, there are special skin cells that contain an alarm chemical. There is one exception. The electric fishes lack these cells. These fishes generate a weak electric field that they use for navigation, and social communication for territoriality and courtship. We hypothesize that the absence of these alarm cells is linked to the innovation of the electric sense - i.e., that the metabolic cost of producing alarm cells was not necessary after these fish possessed an electric sense as an alternative method of communicating alarm. Here, we test for the ability to communicate alarm with electric signals.

116

Title: Development of a Multi-Spectral In Situ Technique for the Detection of Harmful Algal Booms Caused by Karinia brevis.
Presenter(s): Justin Klitzke
Department: NASA
Advisor: Carlos Del Castillo
Abstract: Harmful algal blooms (HAB) are caused by the fast proliferation of algae, Karinia brevis, in coastal waters. These outbreaks are known as red tides and adversely impact aquaculture, fisheries, and tourism. Recent developments in remote sensing techniques for the detection of HABS require regional algorithms that cannot differentiate between phytoplankton species and only detect HABS after very high cell counts are present. This project examined the use of in situ optical sensors for the detection and monitoring of HABS. Wet Lab's SAFIre (Spectral Absorption and Fluorescence Instrument) was configured to simultaneously measure sixteen emission channels at six different wavelengths. Based on the spectral data a ratio of emission was created that can accurately detect an outbreak of K. Brevis at concentrations well below the red tide level. These results can be applied for the development of inexpensive, in situ instruments for the early detection of red tides.

117

Title: Freeing the Irish Female Facade: Raw Prose and Declarations of Sexual Autonomy in the Writings of Edna O'Brien, Rita Ann Higgins, and Clare Boylan
Presenter(s): Amanda Easton
Department: English
Advisor: Dr. Sandy Pearce
Abstract: Irish female writers of different genres have aided in the freeing of Ireland from its repressed nationalistic ideal of female sexuality. Through their prose they have given a voice to women and a forum to explore sexualilty.

120

Title: An Integrated Approach to Archaeological Investigations: Geophysical research at a plains fortified village
Presenter(s): Aaron Fogel
Department: Anthropology and Earth Science
Advisor: Dr. Rinita Dalan
Abstract: The Shea site (32CS29) is a fortified village located on a bluff top of the Maple River in southwest Cass County, ND. A resistivity survey was conducted on the Shea site to supplement previous site knowledge gained by archaeological fieldwork. This geophysical method provides data about the subsurface, which allows for the spatial interpretation of the archeological site. Using a GIS package, this research project will integrate the geophysical data collected, previous archaeological knowledge, as well as the regional geomorphology.

121

Title: Mutation of Glyoxysomal Malate Dehydrogenase isolated from Cutrullus vulgaris: Mutation of Arg-87 and Gly-95 to Lysine
Presenter(s): James Denker, David Roderos
Department: Biology
Advisor: Dr. Joseph Provost
Abstract: Glyoxysomal malate dehydrogenase (MDH), an enzyme that is responsible for the reaction converting malate to oxaloacetate, is a dimeric protein that is found in the mitochondria and cytosol of eukaryotic cells. To better understand the mechanism whereby MDH binds malate in Cutrullus vulgaris, or watermelon, the identity of two separate amino acid residues, believed to be important in stabilization of the substrate-enzyme complex, will be altered. Residues 87 and 95, Arginine and Glycine respectively, have both been modified to Lysine via point mutation. We will then measure the kinetic consequences of the aforementioned reaction and hope to gain insight into the stability of the enzyme-substrate complex as it relates to the steric interaction by these specifically manipulated amino acid residues.

122

Title: How Does the Substrate Specificity of Glyoxysomal Malate Dehydrogenase Change When Aspartate (Asp-157) is mutated to Glycine or Asparagine
Presenter(s): Anusha Mishra, Sara Getty, Bree Hamann
Department: Biology
Advisor: Dr. Joseph Provost
Abstract: In the citric acid cycle (as well as gluconeogenesis), the enzyme malate dehydrogenase (MDH) converts malate to oxaloacetate (and vice versa). In the mechanism the charge that occur's on the substrate, malate's oxygen is stabilized by the nitrogens on Aspartate-157. In changing the Aspartate to Asparagine, we hope to observe whether the substitution of a multiple nitrogen containing side group will affect how MDH stabilizes the oxygen's charges, and by substituting a glycine for the Asp-157, we hope to see whether opening the substrate binding pocket will change the substrate-binding specificity of MDH.

123

Title: Samuel Becket on 'self never knowing itself'
Presenter(s): Lucretia Wadnizak
Department: Theatre
Advisor: Dr. Craig Ellingson
Abstract: We will give a short autobiography on Samuel Becket, his influence on acting, and perform a piece.

124

Title: Wang Mang and His Confucian Ideal
Presenter(s): Sara Sechler
Department: History
Advisor: Dr. Henry Chan
Abstract: Hidden between the Former and Later Han Dynasties a little known, yet controversial, period of rule existed called the Xin Dynasty. The leader of this dynasty was originally a court official named Wang Mang. A loyal Confucian who had served several Former Han emperors, Wang Mang become regent for the last emperor of the Former Han. When the child emperor died, Wang Mang took the throne and was declared emperor. Even before his ascendency however, he had gained enough power to reform the country based on many of the Confucian principles he had studied. Because the first historians for Wang Mang considered him a usurper, original accounts of his activities have been clouded in historical debate. Paying attention to the earliest and latest views surrounding Wang Mang's political motivations, my paper takes an in-depth look at Wang Mang's ideals, reforms, and how they affected the him historically.

125

Title: Pulse Programmer of a Nuclear Magnetic Resonance Spectrometer
Presenter(s): Moneer Al-Rifai
Department: Physics & Astronomy
Advisor: Dr. Ananda Shastri
Abstract: Nuclear magnetic resonance is a technique that makes use of a property of the nucleus, called the spin, by placing these nuclei in a known magnetic field. In the solid state NMR spectrometer we are building, pulses of radio waves are used to change the axis of procession. This is done using a device called the pulse programmer, which sends pulses that range from 0.2 micro seconds to 10 seconds. In this poster, we discuss this important component of the NMR spectrometer, which mainly consists of a repitition rate generator, 4 slow one shots, 4 fast one shots, in addition to 8 line drivers that invert the pulse. This poster will show the circuits that we assembeled for each of these projects and examine their test results.

126

Title: The Fargo-Moorhead Streetcar
Presenter(s): Melissa Torpen
Department: Economics
Advisor: Dr. Gregory Stutes
Abstract: An overview of the rise and decline of the streetcar system in Fargo-Moorhead during the first part of the 20th century.

128

Title: Monitoring the activation of MAPK and wound repair ability in response to LPA, PE, and uPA stimulation in MRC-5, NCI-H196, and NCI-H23 cells
Presenter(s): Justin Voog, Andrew McCoy, Lisa Hansen
Department: Biotechnology Emphasis/Biology Dept
Advisor: Dr. Joseph Provost
Abstract: The Mitogen Activated Protein Kinase (MAPK) cascade is involved in a number of cellular processes including protein transcription and pH regulation via the Sodium Hydrogen Exchanger (NHE). These processes are vital for normal cellular growth and proliferation. Here we document the differences between cancerous and non-cancerous cell lines in their MAPK activation due to urokinase-type plasminogen activator (uPA), lysophosphatidic acid (LPA), and phenylephrine (PE). Using western blot techniques MRC-5 (non-cancerous) cells were shown to exhibited high basal MAPK activity and peak responses to LPA and PE at 50uM. H196 (cancerous) cells exhibited similar basal MAPK levels in relation to MRC-5 cells, but displayed a heightened response to both LPA and PE. H23 cells (cancerous) exhibited almost no response to added LPA and a delayed response when incubated with uPA. This may be due to a lack of LPA receptors in the H23 cell line. We will also determine the ability of individual cell lines to respond to hormone stimulation by increasing their growth rate and wound repair by scratch assay.

129

Title: Grand Round: Peter Richard Johnson
Presenter(s): Jennifer Nystrom, Jessica Westeren
Department: Education
Advisor: Dr. Brian Smith
Abstract: This is our Grand Round presentation from Educational Psychology (Ed 294). We created a child with some type of 'problem' then looked at him from all of the major developmental psychological theories.

131

Title: The Use of Chemical Cues by Aquatic Animals for the Avoidance of Predators
Presenter(s):
Department: Biology
Advisor: Dr. Brian Wisenden
Abstract: Aquatic animals use chemical cues for assessing predation risk. Typical antipredator responses to these cues are cessation of activity, movement to the bottom, and increased shoal cohesion. These responses reduce the probability of predator attack - during the day. There are many nocturnally active predators but no research has been done on the role of chemical cues in mediating nocturnal predator-prey interactions. In this experiment we test the nocturnal alarm reactions of Pristella tetras.

132

Title: Aging of Prairie Dogs: Correlation between length and with of humerus bone to the age of the prairie dog.
Presenter(s):
Department: Biology
Advisor: Dr. Donna M. Stockrahm
Abstract: My presentation will show whether their is a direct correlation between the length and width of a prairie dog's humerus bone in relation to how old the dog is.

133

Title: The Education System of Great Britain
Presenter(s): Katherine Dolan
Department: Music
Advisor: Dr. Laurie Blunsom
Abstract: In ancient Greek history, we are told that the creation of schools began in order to create the ideal citizen. Although the first attempts of doing this were valid, there is still a sense of needing to better oneself. Education seemed to be the path for self-enrichment. As a society, we are constantly changing what the educational system should be composed of and what the main focus of education should be. For example, when Sputnik was first launched, the United States spent many U.S. dollars on the education of science in our schools. We wanted to make sure that we would soon be on the same technological level as Russia and the other nations in the world. Every nation has its own ideals and subsequently different approaches to their educational systems. Although there have been many changes over time, the American educational system was based on the British educational system. During this presentation, we will look primarily at the secondary educational system of Great Britain. We will take a look at the many benefits that create inspiring young citizens, as well as, how each students academic success is defined at an extremely early age.

134

Title: Are you Stressed?
Presenter(s): Jennifer Miller, Anna Ackerson
Department: English
Advisor: Dr. Michael McCord
Abstract: Stress is the number one health problem among Americans. Sources estimate that 75-90% of all visits to primary care physicians are for stress related problems. In our presentation we will be discussing the different causes of stress, its effects on the human body, and ways to prevent and manage stress. We will be touching on topics from depression and anxiety to such simple things as the common cold. At the end of our presentation we will be administering a stress test, for you to determine your level of stress.

135

Title: SHOCK ART: Is it Art?
Presenter(s): Neal Peterson
Department: Art & Design
Advisor: Dr. Allen Sheets
Abstract: We all seem to know, or at least have a grasp on the definition of art, but what happens when we put the word "shock" in front of it? To some, it shouldn't be done, to others, it has to be done. *This presentation is not recommended for persons under the age of 18.

136

Title: John Cage's Silence
Presenter(s): Fritz Eagleshield III
Department: Music
Advisor: Dr. Laurie Blunsom
Abstract: What is the definition of music? Does it have melody, harmony, or pitch? Can silence in a quiet room be considered music? Some people would say no and others would say yes. The person who brought this to my attention is a composer by the name of John Cage. The general population of America thinks of music as having instruments being heard, a voice being sung or even a bass drum being hit. Everyone has certain types of music preferred, whether it may be the sounds of classical music like Beethoven, country music of the Dixie Chicks, the Jazz sounds from Louis Armstrong or all three genres. What makes John Cage unique is his interest on sound as music. For example, glass breaking on a cement sidewalk might be considered music or the claps of hands produced from audiences at a live performance might be considered music. The music composed by John Cage is one of the most unique pieces ever written, because it is a good example of silence. In the presentation, I will talk about Cage's piece 4' 33" which consists of approximately four and a half minutes of silence. It is written in three movements and is usually played on a piano. The process and ideas of this piece is the opening and closing of the piano and the surrounding idea of silence all around the performance. I will perform and talk about the piece.

137

Title: Wage Disparity, Causes
Presenter(s): Carl Skaro
Department: Economics
Advisor: Dr. Oscar Flores
Abstract: My Presentation will attempt to show the causes of increased wage disparity.

138

Title: Creation of asteroid light curves using CCD photometry.
Presenter(s): Michael Olson
Department: Physics and Astronomy
Advisor: Dr. Walter Worman
Abstract: Obtaining light curves of asteroids proves to be challenging research that involves a mastery of astronomical image processing. Dr. Worman and I focus our asteroid research on main belt asteroids. CCD images are taken of these asteroids at the Regional Science Center's Buffalo River Site, which holds a computer controlled 16" Cassegrain telescope used for this research. I will discuss how to obtain light curves for asteroids, and in particular I will focus on a recently completed light curve of the asteroid 1248 Jugurtha.

139

Title: Energy Flow in Ecosystems
Presenter(s): Jonathan Walsh, JT Luther
Department: Biology
Advisor: Dr. Alison Wallace
Abstract: National and state educational standards emphasize the importance of student understanding regarding biological processes (metabolism, cellular functions etc.), as well as the importance of scientific inquiry and its role in problem solving in a complex world facing many new challenges. Participants will experience a 10th grade biology lesson activity designed for the utilization of inquiry in teaching processes of energy flow in plants.

140

Title: Demonstration of Teaching Chemistry in the Community
Presenter(s): Shamus Funk
Department: Biology
Advisor: Dr. Alison Wallace
Abstract: Participants will experience applications of chemistry dealing with gases and the atmophere, taken from a National Science Education Standards based chemisty textbook.

141

Title: A Lesson in Biodiversity
Presenter(s): Heather Rickerl, Jennifer Hatton
Department: Biology
Advisor: Dr. Alison Wallace
Abstract: Participate in a hands-on biodiversity lesson taken from a National Science Education Standards-based high school biology text.

142

Title: An Ecological Approach to High School Biology
Presenter(s): Michael Richards
Department: Biology
Advisor: Dr. Alison Wallace
Abstract: Experience some sample activities from this new curricula developed by the National Institute of Health and the Biology Sciences curriculum studies. This curriculum is designed to teach an ecological approach to High School students.

143

Title: An Analysis of "From the Bridge" by Claribel Alegría
Presenter(s): Anita Bender
Department: Languages
Advisor: Dr. James Weckler
Abstract: Between 1979 and 1992, El Salvador, a country in Central America, experienced one of the most brutal civil wars in recent history. Claribel Alegria is a successful writer and poet who was originally born in Nicaragua but grew up in El Salvador. She is one of best representatives of "la generación comprometida" (the Committed Generation), writers dedicated to achieving social justice through their writing. The poem "From the Bridge" is a beautiful example of how Alegría reveals the "political and psychological aspects of the struggle of the oppressed" through her poetry. "From the Bridge" is a fascinating poem in which the poet searches to come to terms with who she is by looking back at herself during various stages of her life. It is a poem about the poet and her struggle to remain hopeful amidst the war in El Salvador. It is an intimate view of what destruction under dictatorship feels like. My paper is an analysis of the poem "From the Bridge" and the ways in which it connects to Alegía's commitment to the people of El Salvador. I will present a context for the poem by talking briefly about the civil war in El Salvador and will present biographical background on Claribel Alegría. I will follow by presenting a summation of my paper. I hope to give my audience a clear glimpse into the power of her voice through her poetry as she speaks to the costs of this war on many levels.

144

Title: How leaves adapt to different light environments: an analysis of some key photosynthetic parameters for sun versus shade adapted Wintergreen shrub leaves
Presenter(s): JT Luther, Nathan Huseby
Department: Biology
Advisor: Dr. Chris Chastain
Abstract: Leaves on the same plant can vary with respect to how much light they are exposed to with some leaves being completely shaded and some leaves fully exposed to sunlight. A current number of studies suggest that leaves will adjust their photosynthetic properties for optimizing photosynthesis in proportion to the light they receive. In this poster, we have tested the validity of this concept by examining several key photosynthetic parameters in shade and sun exposed leaves, a species never before studied for this phenomenon.

145

Title: How leaves adapt to different light environments: an analysis of some key photosynthetic parameters for sun versus shade adapted wild grape leaves
Presenter(s): Kelly Mangin, Dylan Voge
Department: Biology
Advisor: Dr. Chris Chastain
Abstract: Leaves on the same plant can vary with respect to how much light they are exposed to with some leaves being completely shaded and some leaves fully exposed to sunlight. Current a number of studies suggest that leaves will adjust their photosynthetic properties for optimizing photosynthesis in proportion to the light they receive. In this poster, we have tested the validity of this concept by examining several key photosynthetic parameters in shade and sun exposed wild grape leaves, a species never before studied for this phenomenon.

146

Title: How leaves adapt to different light environments: an analysis of some key photosynthetic parameters for sun versus shade adapted basswood leaves
Presenter(s): Dan Feir, Ben Peterson
Department: Biology
Advisor: Dr. Chris Chastain
Abstract: Leaves on the same plant can vary with respect to how much light they are exposed to with some leaves being completely shaded and some leaves fully exposed to sunlight. Current a number of studies suggest that leaves will adjust their photosynthetic properties for optimizing photosynthesis in proportion to the light they receive. In this poster, we have tested the validity of this concept by examining several key photosynthetic parameters in shade and sun exposed basswood leaves, a species never before studied for this phenomenon.

147

Title: How leaves adapt to different light environments: an analysis of some key photosynthetic parameters for sun versus shade adapted lilac leaves
Presenter(s): Lesley Lubenow, Perry Syverson
Department: Biology
Advisor: Dr. Chris Chastain
Abstract: Leaves on the same plant can vary with respect to how much light they are exposed to with some leaves being completely shaded and some leaves fully exposed to sunlight. Current a number of studies suggest that leaves will adjust their photosynthetic properties for optimizing photosynthesis in proportion to the light they receive. In this poster, we have tested the validity of this concept by examining several key photosynthetic parameters in shade and sun exposed lilac leaves, a species never before studied for this phenomenon.

148

Title: Psychological Views on Chris Nelson
Presenter(s): Amanda Haugen, Amy Steele
Department: Education Psychology
Advisor: Dr. Brian Smith
Abstract: Our poster is based on an assignment in our Education Psychology class. The assignment was to show our understanding of 16 different theories by applying them to a person and an explanation of the application results. Our child is Chris Nelson, a fictitious child, who has a learning disability. He is an obese second grader and was diagnosed with a learning disability in reading by the end of his first grade. The poster discusses the issues Chris has with his learning disability and our explanations regarding his issues are based on the application of the theorists to his situation.

149

Title: How leaves adapt to different light environments: an analysis of some key photosynthetic parameters for sun versus shade adapted Elm tree leaves
Presenter(s): Shari Dittmer
Department: Biology
Advisor: Dr. Chris Chastain
Abstract: Leaves on the same plant can vary with respect to how much light they are exposed to with some leaves being completely shaded and some fully exposed to sunlight. Currently a number of studies suggest that lesves will adjust their photosynthetic properties for optimizing photosynthesis in proportion to the light they receive. In this poster, we have tested the validly of this concept by examining several key photosynthetic parameters in shade and sun exposed Elm tree leaves, a species never before studied for this phenomenon.

150

Title: Handel's "Hercules"
Presenter(s): Jamie Lindbo
Department: Music
Advisor: Dr. Laurie Blunsom
Abstract: Most people only know George Frederick Handel because of his famous oratorio, "The Messiah". Actually, Handel's career was primarily focused on composing operas. Throughout his career, he wrote almost forty operas, but many of these operas are rarely performed. It is important to realize that there are many other compositions and pieces out there than what a majority of the world has been exposed to. In my presentation, I plan to present a musical drama composed by George Frederick Handel entitled, "Hercules". Before discussing the piece in depth, I will give a brief history behind George Frederick Handel and Italian Opera during the Baroque Period, including some significant characteristics of opera at that time. After giving a better understanding of the composer and musical genre, I will present the opera itself in which I will examine and explain how this particular musical work is unique through its use of structure, musical style, and subject matter. Also, I will bring up an issue about this piece that has created a great amount of debate throughout the years. In closing the presentation, I will perform an aria from the opera which will give the audience an idea of how Baroque Opera is stylistically different than much of the Classical and Romantic Opera which is widely performed throughout the United States.

151

Title: Painted Turtle (Chrysemys picta)Ecology in Clay County, Minnesota
Presenter(s): Joanna M. Schmit, Natasha Gruber
Department: Biology and Mathematics
Advisor: Dr. Donna M. Bruns & Dr. Jerome W. Stockrahm
Abstract: Painted turtles (*Chrysemys picta*) were live-trapped during the summer and early fall of 2001 and 2002 in Clay County, Minnesota, to study growth rates, recapture rates between years, population characteristics, and movements. In 2001, 2 sloughs (< 2 km apart) were trapped, 2.7 ha and 6.2 ha, respectively. In 2002, a third slough (< 1 ha) that was positioned between the first 2 sloughs was added to the study. For each captured turtle, outer scutes were notched for individual identification. Turtles were weighed, sexed, and measured for length and width of carapace, then released. For 2001, data for 250 turtles were analyzed. In 2002, a total of 118 turtles were trapped where 75 were new animals (37 males, 30 females, 8 juveniles) and 43 (34 males, 9 females) were recaptured turtles from 2001. Of the recaptures, 2 adult males moved between the 2 distant sloughs, 2 females were observed on land away from their respective sloughs (during breeding season), and 4 males (and 1 female) moved between the largest slough and the nearby tiny slough. In spite of intense trapping effort, trapping success between 2001 and 2002 varied greatly. Possible reasons for this difference, including mortality factors, will be investigated.

152

Title: Toyotomi Hideyoshi and his Korean Campaign
Presenter(s): Hajime Ishizuka
Department: History
Advisor: Dr. Henry Chan
Abstract: This paper studies Toyotomi Hideyoshi's invasion of Korea from 1592 to 1598. Son of a poor peasant, Hideyoshi was a military genius who subdued all his rivals and unified Japan in the waring states period. His ambition was to conquer China and India. To realize this goal, he took the first step by invading Korea in 1592. The Yi dynasty of Korea appealed to China for help. In response, the Ming administration of China sent an army to Korea and the war came to a standstill. Hideyoshi launched another offensive in 1597. The war finally ended with his death in 1598. Hideyoshi's adventure brought about seven years of war which cost numerous Japanese, Korean and Chinese lives. It weakened both the Yi dynasty of Korea and the Ming dynasty of China. The latter soon collapsed in 1644. In Japan, Hideyoshi's death opened the way to the rise of Tokugawa Ieyasu (1542-1616) and the beginning of the Tokugawa period in Japanese history.

153

Title: Discerning Your Call: The Vocation Approach to Career Counseling
Presenter(s): Melissa Rademacher
Department: Counseling & Student Affairs
Advisor: Dr. Pat Neuman
Abstract: This presentation will explore incorporating spirituality into career counseling. The vocation approach assists students in discerning a call to a career that will provide meaning and purpose. Topics will include introducing the idea of vocation, using assessment tools to begin the discernment process, and creating a plan for putting it all together.

154

Title: Leave No Child Behind?
Presenter(s): Jamie Knutson
Department: Early Childhood Education
Advisor: Dr. Beth Anderson
Abstract: Will this law help or hinder our ability to help children: A look into the ethics of No Child Left Behind.

155

Title: Calvin Griffith: A Biography
Presenter(s): Hannah Vanorny
Department: History
Advisor: Dr. Steve Hoffbeck
Abstract: My presentation will be a biography of Calvin Griffith, the man who brought the Minnesota Twins to Minneapolis in 1960. I will talk about his love of baseball and his very colorful (and often times controversial) personality.

157

Title: Nocturnal Alarm Responses in Fish
Presenter(s): Joshua Klitzke, Perry Syverson
Department: Biology
Advisor: Dr. Brian Wisenden
Abstract: Aquatic animals use chemical cues for assessing predation risk. Typical antipredator responses to these cues are cessation of activity, movement to the bottom, and increased shoal cohesion. These responses reduce the probability of predator attack - during the day. There are many nocturnally active predators but no research has been done on the role of chemical cues in mediating nocturnal predator-prey interactions. In this experiment we test the nocturnal alarm reactions of Pristella tetras.

158

Title: Visualizing mitochondrial dynamics during the cell cycle in yeast
Presenter(s): Austin McCoy, Heidi Johnson, Jen Risan
Department: Biology
Advisor: Dr. Ellen Brisch
Abstract: Mitochondria function to provide cells with energy for all metabolic processes. Throughout the cell cycle, mitochondria are highly dynamic. They continuously move about and change shape depending on which stage of the cell cycle they are in. This process is termed mitochondrial dynamics. In Saccharomyces cerevisiae, the inheritance of mitochondria from mother cell to daughter bud during cell division is an essential feature of yeast cell growth. The analysis of mutants defective in mitochondrial morphology and inheritance has lead to the identification of some of the proteins that control mitochondrial dynamics. Classically, temperature sensitive yeast mutants were used to identify cell cycle regulatory proteins. The analysis of mutants defective in events such as bud formation, DNA synthesis, spindle pole body duplication, and cytokinesis lead to the identification of proteins that control each of these integral steps in cell division. It is our hypothesis, that molecules that control cell division and cell cycle regulation play a key role in mitochondrial dynamics. We are currently testing our hypothesis by examining the following cell cycle mutants for defects in mitochondrial dynamics: cdc13, cdc14--meiosis and sporulation, cdc 5, cdc7, cdc15--kinases, cdc2, cdc6, cdc9--DNA replication. We are visualizing mitochondria using specific dyes and fluorescence microscopy. By identifying cell cycle mutants with mitochondrial defects we can build a model for how mitochondrial dynamics are coordinated during the cell cycle.

159

Title: A Comparison of Stress Fiber Formation in Human Embryonic Lung Cells and Human Non-Small Cell Lung Cancer Cells
Presenter(s): Ashley Malcolm
Department: Biology / Perham High School
Advisor: Dr. Mark Wallert, Dr. Joe Provost, Beth Schwarz
Abstract: In America, half of all men and one-third of all women will develop cancer during their lifetimes. Normal cells grow, divide, and die in an orderly fashion, while cancer cells continue to grow and divide at a high rate. The sodium hydrogen exchanger (NHE) is located in the plasma membrane of all human cells and functions to remove intracellular acid in exchange for extracellular sodium. During these actions, the cells will maintain an intracellular pH (pHi) that is optimal for growth and division. Activation of intracellular signaling pathways by growth factors leads to activation of NHE, which leads to an increase the pHi. This pHi increase is required for cell growth, stress fiber formation, and appears to be a key element in the migration of tumor cells. Recently it was discovered that G-proteins could activate proteins in the Ras/MAPK pathway. This suggests a potential role in G-Protein couple receptors (GPCRs) receptors in regulating cell growth and triggering cancer. The purpose of this project is to investigate the ability of agonists that function through GPCRs to cause stress fiber formation in human lung cells. Stress fibers are actin filaments formed in the cytoplasm of cells that are attached to proteins in the plasma membrane. Actin filaments are the most flexible elements of the cytoskeleton and play an important part in cellular movement and shape changes. The attachment of actin filaments to the membrane and by the elongation of the stress fibers appears to be an integral part of cell migration. This study investigated the ability of four agonists known to activate NHE to stimulate stress fiber formation in human embryonic lung cells and human non-small cell lung cancer cells. The agonists are: 1) lysophophatidic acid (LPA), a bioactive lipid that is one of the major growth factors in serum; 2) Urokinase- type plasminogen activator (uPA) an extracellular protease that also binds to a plasma membrane receptor to activate intracellular signaling through MAPK; 3) Phenylephrine (PE), a norepinephrine analog that stimulates intracellular signaling through protein kinase C; and 4) Phorbol myristate acetate (PMA) a molecule that mimics diacylglycerol and activates protein kinase C without binding to a cell surface receptor. The hypothesis for this research is that stress fibers will

be stimulated by PMA and LPA, but not from PE and uPA. Stress fiber formation was measured following agonist stimulation by fixing cells with paraformaldehyde, permeabalizing the membranes with triton X-100, and stains the actin using fluorescein conjugated phalloidin. The outcome of these experiments and ramifications to lung cancer cell migration will be presented.

160

Title: Agonist Effect on Growth and Invasion of Human Breast Cells
Presenter(s): Camille Erickson, Emily Stoll
Department: Biology / Perham High School
Advisor: Dr. Joe Provost, Dr. Mark Wallert, Beth Schwarz
Abstract: Changes in extracellular pH are one of the hallmarks of tumor formation. The sodium hydrogen exchanger (NHE) is a protein present in the membranes of all human cells that moves sodium into the cell and hydrogen out of the cell to regulate intracellular pH levels. As hydrogen ions outside the cell increase, the surrounding area becomes more acidic. This is an extremely important element in cell metastasis because the surrounding extracellular proteins are broken up allowing the cells to spread from initial tumor area. This occurs because of the lowered pH levels outside the cell. Recent breast cancer cell research has suggested that when NHE inhibitors are present, the ability of breast cancer cells to migrate has decreased. The purpose of this investigation is to determine the role NHE plays in the development of tumors and whether agonists (uPA and PMA) cause a fluctuation in cell migration. Our current study focuses on the ability of the extracellular signaling molecule urokinase-type plasminogen activator (uPA) to stimulate cell migration in normal and cancerous breast cells. uPA has the potential to contribute to cancer migration in two ways: 1) it could make cell migration easier. 2) it could bind to the cells' surface receptors stimulating two intracellular signaling pathways that are known to activate NHE. A second agonist, phorbol myristate acetate (PMA), was also used in the study. PMA is a tumor promoter that mimics diacylglycerol, [one of the intermediates in the signaling pathway activated by uPA.]The breast cell lines that were used in this study were MDA-MB-453 (normal human breast cells) and MDA-MB-321 (highly aggressive human breast cancer cells). Experiments were performed to standardize the cell culture conditions to optimally investigate migration. Migrations were measured using Matrigel invasion assay. Matrigel is a collection of extracellular matrix proteins isolated from mouse tumors, which mimics the extracellular environment common in tumors. Matrigel was placed in a 24 well culture plate, and then seeded with both breast cell lines, designating 12 wells each. Cells were incubated for 72 hours in the presence and absence of agonists. Loose cells were removed and cells remaining in the matrix were then stained and counted. We will present the outcome of these experiments and ramifications to breast cancer cell migration. This project was performed as part of an ongoing research collaboration between Drs. Joe Provost and Mark Wallert at MSUM and Beth Schwarz's science students at Perham High School.

161

Title: Investigating the evolutionary path of a C4 photosynthetic enzyme
Presenter(s): Kyle Carlson
Department: Biology / Perham High School
Advisor: Dr. Chris Chastain, Beth Schwarz
Abstract: According to the endosymbiotic theory, chloroplasts evolved from cyanobacteria and thus plants inherited their photosynthetic enzymes from cyanobacteria. However, a complete genetic sequencing has been completed on cyanobacteria, and the C4 photosynthetic enzyme, pyruvate, orthophosphate dikinase (PPDK), was not present. The purpose of this project was to determine how PPDK evolved in plants. The hypothesis was that plants inherited the PPDK enzyme from chlorophyta, the common ancestor to plants. A species of chlorophyta known as chlamydomonas was used in the experiment. The insoluble proteins in chlamydomonas were extracted and transferred onto nitro-cellulose membranes using the Western Blot electrophoresis method. The membranes were exposed to a PPDK antibody which allowed the PPDK protein to be seen after x-ray films were taken. The films clearly showed that PPDK did exist in the chlorophyta species, chlamydomonas. Therefore the conclusion of this research is that plants did inherit the PPDK enzyme from chlorophyta. A corollary hypothesis was developed addressing the fact that a few isolated groups of bacteria, protozoa, and fungi also contain the PPDK enzyme. This hypothesis was that chlorophyta or a further ancestor inherited PPDK through horizontal gene transfer rather than vertical gene transfer. A phylogenetic tree was created to investigate the hypothesis and indicates that horizontal gene transfer is a reasonable explanation of PPDK evolution. Comprehending the evolution of PPDK may lead to the understanding of its presence in C3 plants, where it is not used for photosynthesis. Further understanding of this enzyme may lead to more efficient crop production.

162

Title: Walleye survival training: conditioning hatchery reared walleye to recognize predators in the wild.
Presenter(s): Joshua Klitzke, Ryan Nelson
Department: Biology
Advisor: Dr. Brian Wisenden
Abstract: In response to predation, aquatic prey recognize injury-released chemical alarm cues from their own species. Predator recognition is acquired when fish learn to associate predator cues (predator odor) with chemical alarm cues released by injured members of their own species. This phenomenon has been well established for percids (darters), ostariophysans (minnows), and aquatic invertebrates. Walleye, popular in the midwest, are hatched in hatcheries, reared in secure ponds away from predators, and stocked into lakes where their survival rate is very low because they are predator naive. Here, we simulate the experiences that naive walleye lack to teach them to recognize one of their most feared predators - northern pike. Walleye possess similar skin cells that release the chemical alarm cues upon injury. We gave walleye one of two treatments: 1) walleye skin + pike odor, or 2) water + pike odor. Walleye responded with antipredator behavior in response to walleye skin + pike odor but not to water + pike odor. This showed that they do not have pre-existing recognition of pike odor. Then we retested the fish, this time giving them pike odor only. Walleye that had previously been given treatment #1 now responded to

pike odor alone. Those that had received treatment #2 showed no response to pike odor. This showed that walleye use chemical information for the assessment of predation risk, and can use these cues to learn new cues for survival. Application of predator-recognition training should increase the efficiency and effectiveness of large scale stocking programs.

163

Title: The Impact of Ethanol on Cell Aging
Presenter(s): Jill Wieler
Department: Biology / Perham High School
Advisor: Dr. Joe Provost, Dr. Mark Wallert, Beth Schwarz
Abstract: The fastest growing portion of the American population consists of people the age of 65 and older. Recent studies have indicated that daily consumption of alcohol in men and women can possibly prevent some forms of heart disease. This also holds true for those over the age of 65, though no more than one glass of alcohol should be ingested daily. The purpose of this research is to determine whether or not a small amount of alcohol ingested daily speeds or slows down the process of cell aging. On possible mechanism for alcohols effect on cellular processes is through its ability to block signaling through the enzyme phospolipase D (PLD). The activation of PLD has been implicated in intracellular signaling pathways that control cell growth and division. Based on current research the hypothesis of this work is that ethanol will slow the process of cell aging in a beneficial manner. Chinese Hamster lung cells (CCL39) are used as a common animal model to study cell-signaling events. CCL39 cells were obtained and cultured into four different flasks. Two flasks served as the control while the other was given daily dosages of 20 micro liters of pure ethanol. The cells were cultured for a period of 48 hours before they were once again split. One flask with ethanol and one flask without were set aside, fixed and viewed for changes in cell morphology and changes in growth rate. This process was repeated for eight cell passages. These experiments have the potential of identifying a molecular basis for the beneficial effects of ethanol. Results of this research will be shared at the MSUM academic conference.

164

Title: How the photosynthetic machinery of leaves differ between plants with C3 and C4 photosynthetic mechanisms. A study of Pigweed (C4) versus Groundsel (C3).
Presenter(s): Michael Richards
Department: Biology
Advisor: Dr. Chris Chastain
Abstract: C4 photosynthesis is a recently evolved, more efficient form of photosynthesis. However, it is found in less than 1% of all plant species, with the rest of the plant kingdom possessing the common, more ancient and less efficient C3 form of photosynthesis. Current evidence indicates that the photosynthetic machinery of C4 plant leaves is significantly different than the photosynthetic machinery of C3 leaves. In the study presented in this poster, we have tested this notion by examining several important photosynthesis parameters in a two broad leaf plants with C3 (common Groundsel) and C4 (Pigweed) photosynthesis.

165

Title: How the photosynthetic machinery of leaves differ between plants with C3 and C4 photosynthetic mechanisms. A study of Crabgrass (C4) versus Kentucky Bluegrass (C3).
Presenter(s): Chris Ziegelmann, Peter Hvidsten
Department: Biology
Advisor: Dr. Chris Chastain
Abstract: C4 photosynthesis is a recently evolved, more efficient form of photosynthesis. However, it is found in less than 1% of all plant species, with the rest of the plant kingdom possessing the common, more ancient and less efficient C3 form of photosynthesis. Current evidence indicates that the photosynthetic machinery of C4 plant leaves is significantly different than the photosynthetic machinery of C3 leaves. In the study presented in this poster, we have tested this notion by examining several important photosynthesis parameters in a two grass plants with C3 (Kentucky Bluegrass) and C4 (Crabgrass) photosynthesis.

166

Title: How sunlight changes the photosynthetic machinery of leaves: a comparison of key photosynthetic components of sun loving leaves (Goldenrod) and shade loving leaves (Common Gorund Ivy)
Presenter(s): Jarrod Heck
Department: Biology
Advisor: Dr. Chris Chastain
Abstract: A number of studies suggest plants can adapt the photosynthetic properties of their leaves with respect to the light environment they are exposed to. For example, some plant species leaves are adapted to growing in shady environments while many plant species have leaves adapted to highlight environments. This adaptation involves changes in chlorophyll and photosynthetic enzymes that optimizes photosynthesis for the light environment they exist in. In this poster, we have tested the validity of this concept by examining several key photosynthetic features in leaves of a shade loving species, (Common Gorund Ivy) and a sun loving species (Goldenrod). Notably, neither of these species has been studied for this phenomenon.

169

Title: Theatre History Panel
Presenter(s): Jennifer Reider, Ryan Legler, Tanner Dahlin, Reed Halvorson, Alicia Underlee
Department: Speech Communications/Theatre Arts
Advisor: Dr. David Wheeler
Abstract: No abstract submitted.

170

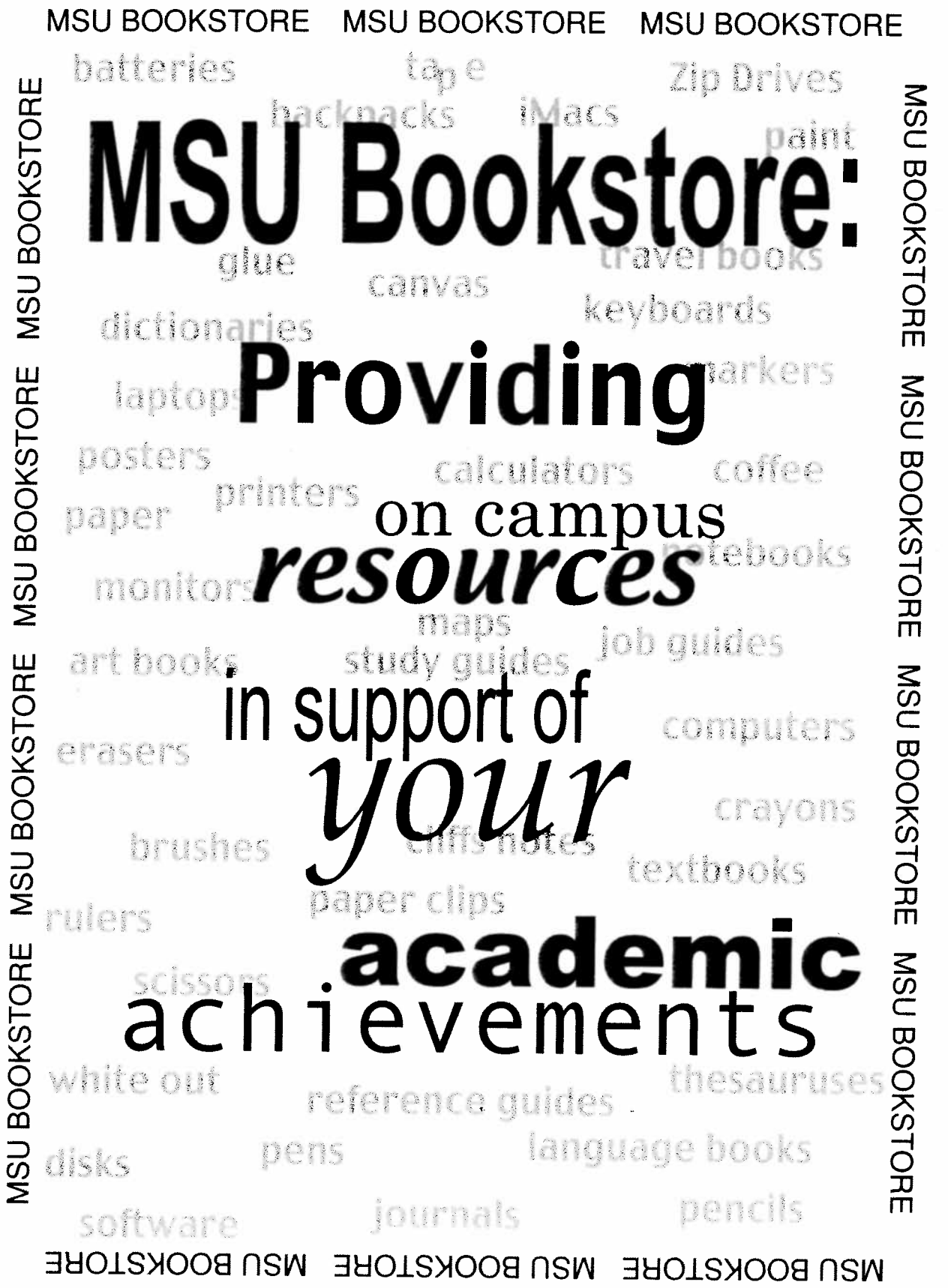
Title: Communication Issues in Selected 2002 Political Campaigns
Presenter(s): Erin Lampa, Ross Lockhart, Kristin Nettestad, Brandon Beery, Matt Hanson, Amy Pfeifer
Department: Speech/Theatre
Advisor: Dr. Tim Borchers
Abstract: A variety of events and candidates made the 2002 political campaign interesting and their impact on the American political landscape is only beginning to be felt. These papers each address some specific aspect of the recent campaign season. Two of the papers address the communication styles used by the candidates in the Coleman-Mondale U.S. Senate race. Another paper examines President Bush's rhetorical role in the election. One paper examines the media outlets used by local third party candidates. A final paper examines the rhetoric of the Clay County Sheriff's campaign. Together, these papers offer a communication-based perspective for understanding political campaigns.

171

Title: MSUM China Tour - A Cultural Experience
Presenter(s): John Arnold, Brent Neubauer
Department: Languages & Culture
Advisor: Dr. Jenny Lin
Abstract: We will do a presentation on last summer's China Tour. We will talk about the many beautiful and historic sites and cities we traveled to and show pictures as well. Also we will bring some of the items we bought in China and touch on their significance. Both of us are East Asian Studies majors so feel free to ask us questions about China's history and complex language.

172

Title: The Probabilities of Powerball
Presenter: John Reber
Department: Mathematics/Physics
Advisor: Matt Craig
Abstract: Powerball is a wildly popular multi-state lottery game, which millions of people play every week. Participants choose six numbers in an attempt to win a jackpot potentially worth hundreds of millions of dollars. However, the chances of winning the jackpot are 1 in 120,526,770. How did the recent rule changes affect the game? Is there a way to improve the odds? How long would one have to play to guarantee a jackpot win? The answers can be found using basic probability. This presentation will feature Powerball simulation software, written for a future museum exhibit.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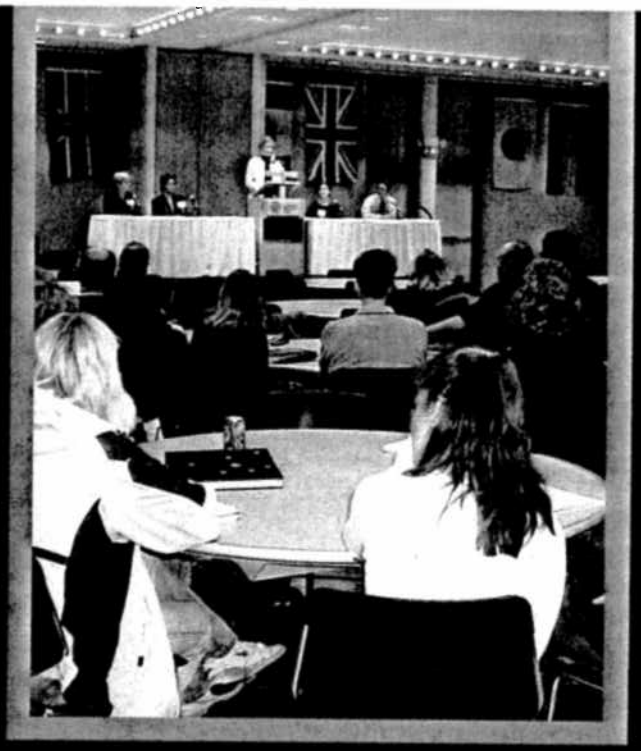

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