

6 T H A N N U A L

STUDENT ACADEMIC

C O N F E R E N C E

CONFERENCE PROGRAM & ABSTRACTS



Wednesday, April 14, 2004

Comstock Memorial Union
Minnesota State University Moorhead

Volume VI

*The MSUM showcase of
Academic Achievement*

www.mnstate.edu/acadconf

MINNESOTA STATE UNIVERSITY
moorhead

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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. Parents, friends, prospective students, alumni, employers and the university community 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 Sodexo Services.

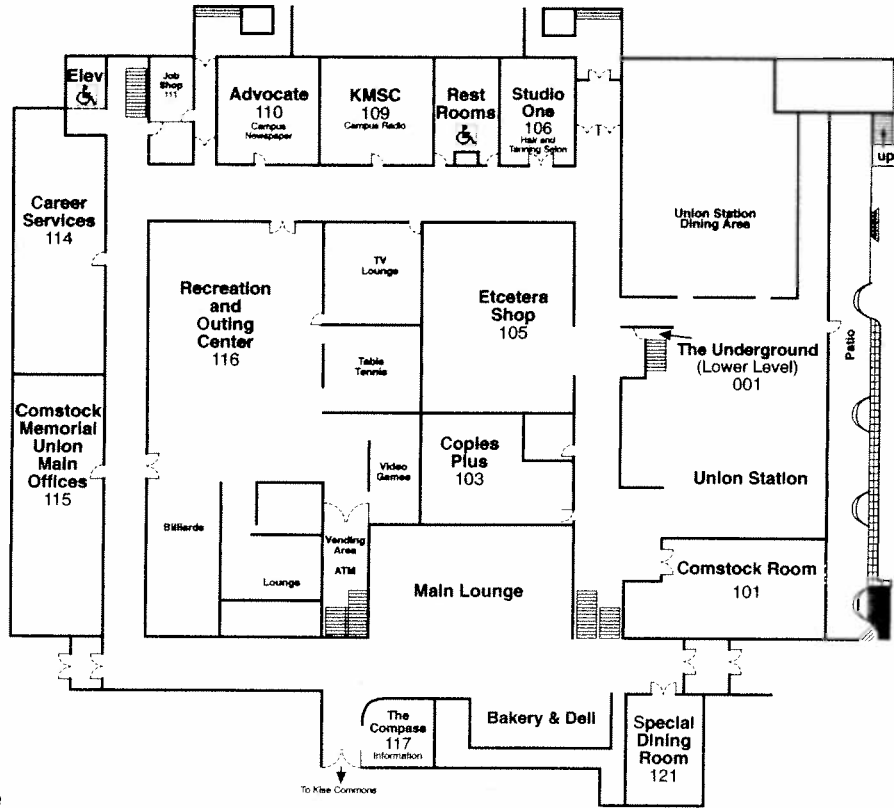
Comstock Memorial Union Map



Comstock Memorial Union

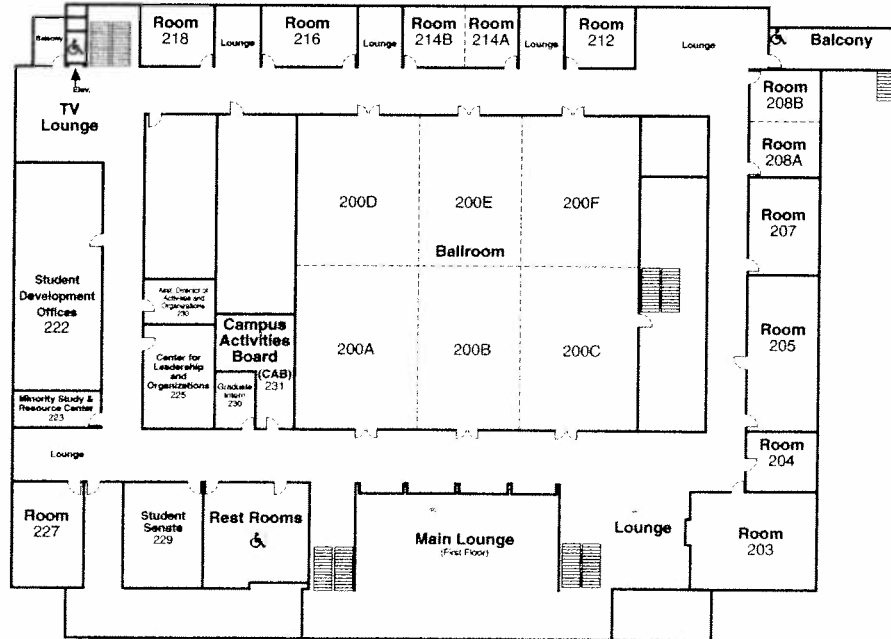


First Floor



= You Are Here

Second Floor



Comstock Memorial Union is a smoke-free environment

How the Conference got Started

Conference Highlights

2004	139 Presentations / 253 Presenters
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 remains the primary conference organizer with the assistance of students, various campus personnel and the advice of the two steering committees. 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 7th Student Academic Conference to be held in April 2005. Each year has seen progressive positive involvement from presenters, faculty, staff, and attendance at the conference.

Letter from the President



Greetings:

At Minnesota State University Moorhead, our students develop into proficient scholars and artists as evidenced by the annual MSUM Student Academic Conference.

This conference highlights 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 MSUM students and faculty is instrumental to high achievement by both.

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. Such experiences only strengthen the

undergraduate learning experience.

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

Conference Participants:

There are so many reasons that the Minnesota State University *Student Academic Conference* became a tradition after its initial offering. Student learning and excellent faculty teaching are what we are about, and nothing is more appropriate for us to celebrate than student achievements in scholarship, research, and creative activity.

It seems that more and more attention is focused on institutional collaborations and partnerships. In that context, it is so important always to remember that the most significant collaboration is between student and teacher, learner and mentor. Today, we all have the opportunity to learn from the results of so many truly special partnerships.

As you make your selections and visit the poster sessions, be certain to ask the student presenters questions about what they have accomplished and what each envisions the next step to be. Also, please take time to thank the faculty mentors for their efforts – without them the rewarding day you have ahead of you would never have happened.

Yours truly,



Bette Midgarder
Vice President

Letter from the Vice President of Student Affairs

Welcome!

The Student Academic Conference provides an excellent opportunity to bridge the classroom experience with the out of class learning environment. The "laboratories" that exist on campus through services, residence halls, leadership programs, employment, student activities, and organization involvement are there to complement what is learned in the classroom.

These experiences are rich with opportunity for students to apply what has been taught in the classroom and can assist in developing students in a variety of meaningful ways. The participation in the Conference can bring all facets of learning together in an inspiring and informative experience for all, whether presenting or reviewing the hard work of others. Thank you for taking the time to be involved and in making the MSUM campus a place where academic and student success can flourish.



Letter from the President of the Student Senate

Salutations,

Higher education provides individuals with countless opportunities to develop socially and intellectually, but rarely are these individuals allowed to professionally demonstrate this development prior to graduation. Committed to excellence, Minnesota State University Moorhead guarantees every student the right to showcase their skills at the annual academic conference.

Students who participate in the academic conference receive due recognition for hard work, but perhaps more importantly, they learn to communicate their ideas and thoughts to peers. An individual may possess the greatest ideas in the world, but if they are unable to effectively communicate, the greatness will be lost in translation.

Each and every student participating in the academic conference is certain to learn and grow from the experience. It is precisely this above and beyond learning ethic that makes the students participating in this event some of the best on campus.

In closing, I applaud all participating students for your continued dedication to academics and taking advantage of this great opportunity to showcase your skills.

Sincerely,

Travis Maier
President, Student Senate

Letter from the President of IFO

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, faculty are still there to nudge, cajole, instruct and sometimes even inspire them. Events like the Conference give us the pleasure of watching our students make us proud.



Cindy Phillips
President, MSUM Inter Faculty Organization

Letter from the President of Alumni Foundation

Dear Future Alumni,

The mission of the Minnesota State University Moorhead Alumni Foundation is to develop relationships and provide funding to advance academic excellence.

It is truly a pleasure for the Alumni Foundation to support students like you who exemplify academic excellence. Knowledge is exciting, but it becomes even more powerful when shared with others. Your willingness to present the results of scholarly activity speaks well of your commitment to a lifetime of learning.

You are accomplished students. I know that you will become successful alumni.

Sincerely,

Mark Vanyo
President, MSUM Alumni Foundation

- 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 Portabella Mushroom Alfredo [Vegetarian]
Luncheon is for presenters and invited guests. Tickets can be purchased by sending an e-mail to acconf@mnstate.edu noting your meal choice by 04/03/2004. Tickets are \$6.50. Individuals can attend the presentation portion of the luncheon without purchasing luncheon tickets.
- 11:50 a.m. Keynote Speaker—CMU Ballroom**
Mr. Thomas C. Proehl
Managing Director, Guthrie Theater, Minneapolis, MN.
- 12:20 p.m. Student Panelists—CMU Ballroom**
Chris Hames, Education & Human Services
Ben Hanson, Arts & Humanities
Heidi Petersen, Business & Industry
Stephanie Corneliussen, Social & Natural Sciences
- 1:00 p.m. Presentation Session 1 and Poster Session 1—
Various CMU Rooms and Poster Display Area**
- 2:20 p.m. Break**
- 2:30 p.m. Presentation Session 2 and Poster Session 2—
Various CMU Rooms and Poster Display Area**
- 4:00 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



Conference Organizers

Jan Krasny
*Student Organizer,
Residence Life Department*



Linda Palmer
Student Organizer



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

Steering Committee

Andrew Conteh	Political Science
Layne Anderson	Comstock Memorial Union
Theresa Carson	Communication Studies, Film Studies, and Theatre Arts
David Olday	Sociology & Criminal Justice
Helen Sheumaker	American Multicultural Studies & Humanities
Harry Weisenberger	Education Foundations
Gregory Stutes	Economics
Cynthia Preston	Academic Affairs
Dean Palmer	OAS Intermediate
Steven Bolduc	Economics
Yahya Fredrickson	New Center
Judy Peterson	Alumni Foundation
Oh-Hee Lee	Elementary and Early Childhood
Lian Ng	Mathematics
Ruth Marie Newton	Elementary and Early Childhood
Linda Palmer	Student
Jan Krasny	Student

Conference Volunteers

Angela Boser, Barb Seiler, Barbara Rath, Becky Boyle, Betty Gunderson, Brian Smith, Britt Tatman Ferguson, Brittney Goodman, Bruce Roberts, Carol Sibley, Chris Chastain, Cliff Schuette, Craig Ellingson, Cristina Mitrovici, Dave Olday, David Crockett, Dawn Hammerschmidt, Deb Lewis, Diane Wolter, Elizabeth Evenson, Ellen Brisch, Greg Stutes, Greg Toutges, Harry Weisenberger, Henry Chan, Jane Gudmundson, Janet Haak Aarness, Jean Hollaar, Jim Hatzenbuhler, Joe Provost, John Benson, Karen Mehnert-Meland, Karl W. Leonard, Kathryn Wise, Kathy Scott, Kevin Carollo, Konrad Czynski, Kris Benson, Kristi Alverson, Larry Schwartz, Laurie Blunsom, Layne Anderson, Linda Winkler, Marie Swanson, Phyllis May-Machunda, Roland Barden, Sandi Schuette, Sandy Pearce, Shawn Dunkirk, Shirlee Holland, Stephen Giedosh, Steve Bolduc, SuEllen Shaw, Theresa Carson

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: ***"Giving Back:
A Question of Responsibility
Enhancing Community"***

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:



Thomas C. Proehl
Managing Director

Having served as Guthrie Theater general manager for the past four years, Tom Proehl was named managing director in March 2003. He began his career at the Guthrie Theater as box office reservationist in 1984 prior to working for the La Jolla Playhouse and later moving to New York City in 1987. While in New York, Proehl held management positions with Playwrights Horizons, The Dramatists Guild, and Theatre for a New Audience. Before returning to Minneapolis he served as founding managing director of New York's Signature Theatre Company, collaborating with artistic director James Houghton and producing seasons of works by playwrights Lee Blessing, Edward Albee, Horton Foote, Adrienne Kennedy, Sam Shepard, Arthur Miller and John Guare. Mr. Proehl received his BA in Theatre from Minnesota State University, Moorhead and was recently awarded an outstanding alumni award. He received his MFA in Arts Administration from CUNY/Brooklyn College where he also served as an adjunct lecturer. Mr. Proehl continues to advise numerous New York based theater companies including The Foundry Theatre, Cherry Lane Theatre, SoHo Repertory Theatre and Signature Theatre Company. Tom also serves on the Executive Committee of the League of Resident Theatres and on the Board of Directors of The Playwrights' Center.

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:



Ben Hanson has been a student at MSUM for only two years. He completed his freshman year 2001-2002 at St. John's University in Collegeville, MN. In 2002 he decided to return home to where he grew up to attend MSUM and become an English/Mass Communications major. Ben is in his junior year at MSUM, but plans on attending the University of Alaska in Anchorage next fall through the National Student Exchange program. He hopes to experience a fresh perspective on life and learning through this amazing opportunity to live and study in a new and different culture. This experience will complement his studies here at MSUM greatly. Ben has worked at the local Fargo-Moorhead YMCA for the past four years in various positions. He started off as a camp counselor and waterfront director for Camp Cormorant, and he currently coaches the youth swim team, working with ages 6-18. Ben enjoys working with kids of all ages, entertaining those around him and generally being the most hilarious person he knows.



Chris Hames will be graduating this May with a bachelor degree in social work. He is a member of Phi Kappa Phi, the national interdisciplinary honor society, as well as other departmental organizations. He has most recently won an award for Outstanding Student Contribution for his work with the People Escaping Poverty Project. This service-learning award is given annually to one student within the four-college area. He is currently enjoying an internship at MeritCare hospital, and hopes to gain further experience in the field before attending graduate school. His passions lie in social research and he has aided professors during summer months with their independent studies. His interest in social work was stirred after an extensive motorcycle trip throughout the country of Mexico. Though the motorcycle now lies in pieces near the border of Guatemala, he will always remember the trip as a life-changing experience.



Heidi Petersen an accounting and economics major, has been an active student at MSUM since her freshman year. As a freshman and sophomore, she was actively involved in her respective Hall Councils and became a member of the Resident's Conduct Committee and Dining Service Committee. As a sophomore, she was President of Alpha Lambda Delta (ALD), a sophomore Honor Society, and Treasurer of SPURS, a volunteer organization. In 2002, she became involved with the Student Activities Budget Committee (SABC), and believes it is a committee where she can make the most difference for all MSUM students. Last fall, Heidi was elected President of the Financial Management Association of which she has been a member for two years. She also serves on the University Budget and Planning Committee. Through her campus involvement, Heidi has augmented her education with invaluable real world experiences that make her a better overall student at MSUM.



Stephanie Corneliussen is a senior psychology major. She plans to attend graduate school this fall to pursue a doctorate in clinical psychology. Stephanie is a member of Psi Chi, the National Honor Society in Psychology. She currently works as a research assistant at the Neuropsychiatric Research Institute in Fargo. Stephanie is a non-traditional student. She earned a B.S. degree in Mass Communications (journalism emphasis) in 1981, and worked as a professional journalist for over 20 years. Most of her journalism education was completed at Moorhead State University. She frequently wrote about social and psychological issues, and finally decided to become a psychologist (instead of always interviewing them). Stephanie is married, has two children, and lives in Hawley.

SCHEDULE BY ROOM

• CMU 101

Session 1

1:00 pm	7	An Economic Study Of Household Income
1:20 pm	10	Parent-Child Communication Program: Case Study #10
1:40 pm	17	The Scots are not English: Understanding Contemporary Scottish Identity
2:00 pm	22	Solutions to Meinong's Theory of Objects

Session 2

2:30 pm	18	Student Voices Through Poetry, Music and the Visual Arts: Responses to an Alternative Education Service Learning Project
2:50 pm	38	Commercial Banking: Nationally and Locally
3:10 pm	71	Deadly Diseases Among Us

• CMU 121

Session 1

1:00 pm	140	China's One Child Policy: The Changing Face of Family Planning
1:20 pm	127	Sports Economics
1:40 pm	124	Signature Quilt
2:00 pm	133	Women's Empowerment

Session 2

2:30 pm	113	Reproductive Ecology of Fathead Minnows (<i>Pimephales promelas</i>): The Effect of Nest Type on Reproductive Success
2:50 pm	111	Digital Manipulation, Has it Gone Too Far?
3:10 pm	103	Fraud in the United Way
3:30 pm	92	Early Fraternal Organizations of Clay County

• CMU 200A

Session 1

1:00 pm	5	Theatre of the Absurd
1:20 pm	53	Breathing, How it Works!

Session 2

2:30 pm	105	Stars and Stuff: an Introduction to Astrophysics
3:20 pm	110	Mental Retardation
3:40 pm	31	Greek Theatre

• CMU 200C

Session 2

2:30 pm	108	Portrait Drawing Demonstrations: Methods and Meanings
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• CMU 200D

Session 1

1:00 pm	84	Sri Lanka: Facts about the Culture, Life style, Education, Civil War and Terrorism
2:00 pm	30	Commedia Dell'arte

Session 2

2:30 pm	136	Shakespearean Theatre
2:50 pm	28	Alike, but not the Same: A Lesson on Human Genetic Variation.

• **CMU 203**

Session 1

- 1:00 pm 23 The Parent-Child Communication Program: Case Study #9
- 1:20 pm 98 Advanced Optical Imaging-Experiences at Looking Through the World With Different Lenses (objectives).
- 1:40 pm 100 Constitutionality of the USA PATRIOT ACT
- 2:00 pm 114 The Wine Industry

Session 2

- 2:30 pm 116 Fraud: How to Make a Million Stealing from Your Employer
- 2:50 pm 119 Parent-Child Communication Program
- 3:10 pm 35 Extensions of Synthetic Division

• **CMU 205**

Session 1

- 1:00 pm 1 Some Multiplication Tricks
- 1:45 pm 16 Being Genderqueer in a Binary Gender System: A Discussion About Gender

Session 2

- 2:30 pm 88 Parent-Child Communication Program Case Study #2
- 2:50 pm 3 Isabella and Bolinda Tuylendina
- 3:10 pm 4 Multiplication Made Easy

• **CMU 207**

Session 1

- 1:00 pm 34 Keith Haring: Success and Controversy in Mass Exposure
- 1:20 pm 27 Ethics: An Imperative Part of Any Business
- 1:40 pm The Influence of Self-Generated Hand Gestures on Recall
- 2:00 pm 48 The Parent-Child Communication Program, Case Study #8

Session 2

- 2:30 pm 57 The Correlation of the Proportion of Errors between Staggered Spondaic Word and SCAN-C tests
- 2:50 pm 65 A Look at the Changing Music Industry from an Economic Perspective
- 3:10 pm 123 The Implications of Selective Abortion in the Case of Disability: Integrating Disability Right and Reproductive Freedom
- 3:30 pm 79 Racism and MSUM

• **CMU 208**

Session 1

- 1:00 pm 8 The Parent-Child Communication Program: Case Study #7
- 1:20 pm 32 Comparison of teacher certification procedures in U.S.A. and Russia
- 1:40 pm 41 Small Group Decision Making
- 2:00 pm 68 The Malady of Fibromyalgia

Session 2

- 2:30 pm 72 Relating the Biological, Ecological and Societal Values in Order to Bring Attention to the Overall Importance of Virgin Prairie Land to Our Region and Nation as a Whole.
- 2:50 pm 76 The Determinants of Homeownership in the United States of America
- 3:10 pm 82 Parent-Child-Communication-Program Case Study #10
- 3:30 pm 87 Clay County Italian Immigration: Italian Influence on Local Beauty Industry

• **CMU 214**

Session 1

1:00 pm	139	Child Labor
1:20 pm	135	Gender Differences in Physical, Verbal, and Social Bullying of Elementary Students
1:40 pm	106	Vetoing the Engenderment of the Frozen Human Embryo: A Feminist Argument for the Regulation of Reproductive Technologies and the Abolition of Forced Motherhood
2:00 pm	102	Target: Upscale Discounting and Power Relationships

Session 2

2:30 pm	85	Parent-Child Communication Program: Case Study #1
2:50 pm	75	Anti-Germanism in Clay County
3:10 pm	42	Portfolio Assessment of Young Children
3:30 pm	39	Is Casino Gambling Profitable to the State?

• **CMU 216**

Session 1

1:00 pm	26	Parent-Child Communication Program (PCCP) - Case Study #4
1:20 pm	78	Language Disorders: The Elements and Instituting a Classroom Model.
1:40 pm	89	The Recent Changes in the Immigration and Asylum System of the United Kingdom and Their Detrimental Effects
2:00 pm	90	Predictions in Daily Lives - Can They Be Justified?

Session 2

2:30 pm	93	Web Research: Advertising, Public Relations-Marketing, News, Television, and Radio Online
2:50 pm	95	Investigating DNA Replication Origins in <i>C. elegans</i> .
3:10 pm	99	The United States Beer Industry
3:30 pm	109	NMR Study of Magnetic Molecules

• **CMU 218**

Session 1

1:00 pm	43	The Parent-Child Communication Program: Case Study #5
1:20 pm	91	Developmental and Behavioral Ontogeny of Antipredator Behavior in Cichlid Larvae
1:45 pm	132	Spectroscopy and the Spectroscope

Session 2

2:30 pm	14	Nonny's Flair: An Examination of a Children's Book Illustrator.
3:00 pm	19	Loving the Tummy
3:30 pm	36	Shakespeare's Tragedies and Histories

• **CMU 227**

Session 1

1:00 pm	138	Marxism, Revolution, and Reform
1:20 pm	134	Colorful History of Moorhead School: Oak Port.
1:40 pm	129	Genocide and the Normality of the Perpetrators of Evil
2:00 pm	128	Racing Through Time: A Historical Look at Horses in Clay County

Session 2

2:30 pm	126	French Settlement in Clay County
2:50 pm	125	Cost/Benefit Analysis of a Twins stadium in Minneapolis
3:10 pm	120	The role of NHE1 in Balb-c rat tumorigenesis
3:30 pm	117	Expression of Mitochondrial Genes in Wheat (<i>Triticum aestivum</i> L.)

• **Kise Line D**

Session 1

- 1:00 pm 13 Topics in the American Renaissance
 2:05 pm 52 Phospholipase D Regulates Stress Fiber Formations By Phenylephrine Stimulation in CCL39 cells

Session 2

- 2:30 pm 29 A Lesson in Genetic Probability
 3:30 pm 74 The Rise of Korean Nationalism Leading Up to the Samil

• **Underground**

Session 1

- 1:00 pm 112 Form Follows Function: Why Animals Look the Way They Do

Session 2

- 2:30 pm 121 Rape as a Weapon of War: Reproductive Issues Concerning Women in War

• **Main Lounge**

Session 1

- 1:00 pm 44 Chemical Characterization of Ostariophysan Alarm Substance
 1:00 pm 37 Mental Illness and Inmates
 1:00 pm 33 Aseptic Technique
 1:00 pm 2 Guided Notes in Mathematics Classes
 1:00 pm 6 The Social Problem of Battered Women
 1:00 pm 45 Children's Literature - A cooperative study
 1:00 pm 9 Assessing the Function of PPK in C3 Plants Using Arabidopsis thaliana TDNA Gene Knockouts
 1:00 pm 58 Effect of Environmental Stresses on Corn Root Respiration
 1:00 pm 21 Mary Crowdog/"Lakota Woman"
 1:00 pm 15 Providing Health Care in Nicaragua: Nursing Student's Experience
 1:00 pm 24 Are you interested in becoming a Certified Nursing Assistant?
 1:00 pm 25 Cell Cycle Genes and Their Effects on Mitochondrial Inheritance and Dynamics
 1:00 pm 12 Orchid Habitat in Northern Minnesota
 1:00 pm 61 Short-Term Effects of Removing Energy (sucrose) Supply to Growing Corn Roots.
 1:00 pm 55 A Glimpse Into the World of a Systems Analyst
 1:00 pm 59 Can corn root respiration be stimulated by pre-treating corn roots in iron fertilizer?
 1:00 pm 46 Investigation of a Novel Method to Purify Plasmid DNA
 1:00 pm 56 An Initial Biochemical Analysis of Autism
 1:00 pm 54 Is Mitochondrial Inheritance Tissue Specific? A New Look at the mtDNA Dogma from a Cell Biology Perspective.
 1:00 pm 51 How Do First-Syllable Characteristics Affect Visual Word Recognition of Long Words?
 1:00 pm 11 Intravenous Catheters Used in the Intensive Care Unit
 1:00 pm 50 Phospholipase D Regulates Stress Fiber Formation By Phenylephrine Stimulation in CCL39 cells
 1:00 pm 49 The Changing Face of St. Francis de Sales
 1:00 pm 47 The Influence of Prayer and Religious Beliefs on Measures of Life Satisfaction
 1:00 pm 60 Do Elevated Levels of Potassium Ion in the External Medium of Corn Roots Stimulate Respiration and Therefore ATP Synthesis?

Session 2

2:30 pm	94	How do MAPK/ERK Kinases Regulate Microtubule Spindle Formation?
2:30 pm	137	Special Problem in Education: Reaching Out to Adopted Minorities
2:30 pm	131	NMR Line Widths as a Signature of Crystal Geometry and Dynamics.
2:30 pm	130	Rates of Groundwater Cadmium Attenuation in Gravels Impregnated with Glacial Clay in the Red River Valley
2:30 pm	122	Growth Curve of Staphylococcus Epidermidis
2:30 pm	118	The Conversion of MDH to LDH Through Site Directed Mutagenesis
2:30 pm	115	Mothers and Unfair Pre-Natal Care.
2:30 pm	107	A Test of the Anti-Pathogen Hypothesis for the Function of Perciform Club Cells
2:30 pm	104	Can Some Predators Avoid Being Chemically Labeled by Their Prey?
2:30 pm	101	The Car Problem; Whether to Buy or Lease.
2:30 pm	69	Genetic Diversity Influencing Survival Among Declining Populations of Black-tailed Prairie Dogs.
2:30 pm	96	Phenylephrine Activates Na ⁺ -H ⁺ Exchangers via Bifurcating Pathways Involving RhoA and ERK as Downstream Effects of Different Protein Kinase C Isoforms
2:30 pm	62	Effect of Aluminum Ion on Corn Root Respiration
2:30 pm	86	Modeling of Upper-Level Degrees Earned Among Different Races
2:30 pm	83	Seeing the Unseen with Geophysical Methods
2:30 pm	81	Nocturnal Behavioral Response to Chemical Alarm Cues by Tetra Fish
2:30 pm	80	Comparison of Growth Rates and Survival of Painted Turtles (<i>Chrysemys picta</i>) in Clay County, Minnesota
2:30 pm	77	Designing Physical Anthropology Labs: An Exercise in Active Learning
2:30 pm	73	Green Fluorescent Protein Purification and Polyclonal Antibody Production in Rabbits
2:30 pm	70	Effects of Oxidative Stress on <i>Saccharomyces cerevisiae</i> FKH1 Transcription Factor Knockout
2:30 pm	67	The Role of PKC in RhoA Activation and Stress Fiber Formation
2:30 pm	66	Cohabitation and Divorce
2:30 pm	64	The Relationship of Root Cell Membranes "Leakiness" on Root Tissue Respiration Rate
2:30 pm	63	Survey of Wild Turkey (<i>Meleagris gallopavo</i>) Distribution in Cass and Clay Counties
2:30 pm	97	Exploring the Roles of Nurse Practitioner in Rural Health Care

Alphabetical List Of Presenters

Last Name	First Name	Presentation	Title	Room	Time
Ahonen	Adam	18	Student Voices Through Poetry, Music and the Visual Arts: Responses to an Alternative Education Service Learning Project	101	2:30 pm
Alemadi	Shireen	113	Reproductive Ecology of Fathead Minnows (<i>Pimephales promelas</i>): The Effect of Nest Type on Reproductive Success	121	2:30 pm
Alemadi	Shireen	107	A Test of the Anti-Pathogen Hypothesis for the Function of Perciform Club Cells	Main Lounge	2:30 pm
Alles	Amal	84	Sri Lanka: Facts about the Culture, Life style, Education, Civil War and Terrorism	200D	1:00 pm
Almer	Marin	57	The Correlation of the Proportion of Errors between Staggered Spondaic Word and SCAN-C tests	207	2:30 pm
Al-Rifai	Moneer	109	NMR Study of Magnetic Molecules	216	3:30 pm
Anania	Amanda	46	Investigation of a Novel Method to Purify Plasmid DNA	Main Lounge	1:00 pm
Andel	Chad	7	An Economic Study Of Household Income	101	1:00 pm
Andersen	Rachel	75	Anti-Germanism in Clay County	214	2:50 pm
Anderson	Leah	23	The Parent-Child Communication Program: Case Study #9	203	1:00 pm
Anderson	Amber	13	Topics in the American Renaissance	Kise Line D	1:00 pm
Baukol	Angela	41	Small Group Decision Making	208	1:40 pm
Beer	Melissa	83	Seeing the Unseen with Geophysical Methods	Main Lounge	2:30 pm
Bengtson	Jennifer	77	Designing Physical Anthropology Labs: An Exercise in Active Learning	Main Lounge	2:30 pm
Bentley	Vusya	134	Colorful History of Moorhead School: Oak Port.	227	1:20 pm
Bentz	Kristin	103	Fraud in the United Way	121	3:10 pm
Bichler	Christian	101	The Car Problem; Whether to Buy or Lease.	Main Lounge	2:30 pm
Blaeser	Alissa	136	Shakespearean Theatre	200D	2:30 pm
Boyd	Amber	75	Anti-Germanism in Clay County	214	2:50 pm
Boyer	Andrea	14	Nonny's Flair: An Examination of a Children's Book Illustrator.	218	2:30 pm
Breikjern	Nicholle	18	Student Voices Through Poetry, Music and the Visual Arts: Responses to an Alternative Education Service Learning Project	101	2:30 pm
Burgad	Derick	73	Green Fluorescent Protein Purification and Polyclonal Antibody Production in Rabbits	Main Lounge	2:30 pm

Numbers correspond with abstract listings beginning on page 28

Last Name	First Name	Presentation Title	Room	Time
Burnside	Tabitha	67 The Role of PKC in RhoA Activation and Stress Fiber Formation	Main Lounge	2:30 pm
Butler	Devin	13 Topics in the American Renaissance	Kise Line D	1:00 pm
Byklum	Tami	15 Providing Health Care in Nicaragua: Nursing Student's Experience	Main Lounge	1:00 pm
Charles	Lang	18 Student Voices Through Poetry, Music and the Visual Arts: Responses to an Alternative Education Service Learning Project	101	2:30 pm
Christianson	Sarah	17 The Scots are Not English: Understanding Contemporary Scottish Identity	101	1:40 pm
Church	Kinsey	14 Nonny's Flair: An Examination of a Children's Book Illustrator.	218	2:30 pm
Collins	Ashley	37 Mental Illness and Inmates	Main Lounge	1:00 pm
Colquhoun	Thomas	64 The Relationship of Root Cell Membranes "Leakiness" on Root Tissue Respiration Rate	Main Lounge	2:30 pm
Cook	Trevor	126 French Settlement in Clay County	227	2:30 pm
Cooper	Adriane	71 Deadly Diseases Among Us	101	3:10 pm
Cotton	Rose	57 The Correlation of the Proportion of Errors between Staggered Spondaic Word and SCAN-C tests	207	2:30 pm
Cox	Jesse	60 Do Elevated Levels of Potassium Ion in the External Medium of Corn Roots Stimulate Respiration and Therefore ATP Synthesis?	Main Lounge	1:00 pm
Crabtree	Shannon	121 Rape as a Weapon of War: Reproductive Issues Concerning Women in War	Undersground	2:30 pm
Crabtree	Shannon	123 The Implications of Selective Abortion in the Case of Disability: Integrating Disability Right and Reproductive Freedom	207	3:10 pm
Dahl	Faith	70 Effects of Oxidative Stress on Saccharomyces cerevisiae FKH1 Transcription Factor Knockout	Main Lounge	2:30 pm
Daley	Brittany	13 Topics in the American Renaissance	Kise Line D	1:00 pm
Denker	James	118 The Conversion of MDH to LDH Through Site Directed Mutagenesis	Main Lounge	2:30 pm
Deutsch	Tiffany	93 Web Research: Advertising, Public Relations-Marketing, News, Television, and Radio Online	216	2:30 pm
Dinnel	Autumn	25 Cell Cycle Genes and Their Effects on Mitochondrial Inheritance and Dynamics	Main Lounge	1:00 pm
Dollerschell	Mark	1 Some Multiplication Tricks	205	1:00 pm
Donner	Jeni	104 Can Some Predators Avoid Being Chemically Labeled by Their Prey?	Main Lounge	2:30 pm

Numbers correspond with abstract listings beginning on page 28

Last Name	First Name	Presentation Title	Room	Time
Drew	Shantell	81 Nocturnal Behavioral Response to Chemical Alarm Cues by Tetra Fish	Main Lounge	2:30 pm
Duval	Matthew	67 The Role of PKC in RhoA Activation and Stress Fiber Formation	Main Lounge	2:30 pm
Easton	Amanda	13 Topics in the American Renaissance	Kise Line D	1:00 pm
Easton	Amanda	106 Vetoing the Engenderment of the Frozen Human Embryo	214	1:40 pm
Easton	Amanda	121 Rape as a Weapon of War: Reproductive Issues Concerning Women in War	Underground	2:30 pm
Ehlers	Bethany	44 Chemical Characterization of Ostariophysan Alarm Substance	Main Lounge	1:00 pm
Elkin	Nicole Elkin	100 Constitutionality of the USA PATRIOT ACT	203	1:40 pm
Erik	Block	18 Student Voices Through Poetry, Music and the Visual Arts: Responses to an Alternative Education Service Learning Project	101	2:30 pm
Fanfulik	Lisa	119 Parent-Child Communication Program	203	2:50 pm
Feir	Dan	70 Effects of Oxidative Stress on <i>Saccharomyces cerevisiae</i> FKH1 Transcription Factor Knockout	Main Lounge	2:30 pm
Fick	Steven	30 Commedia Dell'arte	200D	2:00 pm
Finke	Tiffany	12 Orchid Habitat in Northern Minnesota	Main Lounge	1:00 pm
Flaat	Cole	136 Shakespearean Theatre	200D	2:30 pm
Flake	Shelley	13 Topics in the American Renaissance	Kise Line D	1:00 pm
Fohl	Michael	60 Do Elevated Levels of Potassium Ion in the External Medium of Corn Roots Stimulate Respiration and Therefore ATP Synthesis?	Main Lounge	1:00 pm
Foss	Nick	30 Commedia Dell'arte	200D	2:00 pm
Frank	Greta	30 Commedia Dell'arte	200D	2:00 pm
Frykman	Jon	112 Form Follows Function: Why Animals Look the Way They Do	Underground	1:00 pm
Frykman	Jon	62 Effect of Aluminum Ion on Corn Root Respiration	Main Lounge	2:30 pm
Funk	Shamus	86 Modeling of Upper-Level Degrees Earned Among Different Races	Main Lounge	2:30 pm
Gaa	Courtney	42 Portfolio Assessment of Young Children	214	3:10 pm
Gabel, Jr.	William	55 A Glimpse Into the World of a Systems Analyst	Main Lounge	1:00 pm
Geray	Katie	63 Survey of Wild Turkey (<i>Meleagris gallopavo</i>) Distribution in Cass and Clay Counties	Main Lounge	2:30 pm

Numbers correspond with abstract listings beginning on page 28

Last Name	First Name	Presentation Title	Room	Time
Gertsen	Lee	69 Genetic Diversity Influencing Survival Among Declining Populations of Black-tailed Prairie Dogs.	Main Lounge	2:30 pm
Gilleshammer	Lindsay	78 Language Disorders: The Elements and Instituting a Classroom Model.	216	1:20 pm
Glur	Darren	38 Commercial Banking: Nationally and Locally	101	2:50 pm
Gomez	Eric	13 Topics in the American Renaissance	Kise Line D	1:00 pm
Gomez	Eric	36 Shakespeare's Tragedies and Histories	218	3:30 pm
Goonawardena	Roshani	84 Sri Lanka: Facts about the Culture, Life style, Education, Civil War and Terrorism	200D	1:00 pm
Goonewardena	Roshani	82 Parent-Child-Communication-Program Case Study #10	208	3:10 pm
Goos	Gwen	121 Rape as a Weapon of War: Reproductive Issues Concerning Women in War	Underground	2:30 pm
Goos	Gwen	123 The Implications of Selective Abortion in the Case of Disability: Integrating Disability Right and Reproductive Freedom	207	3:10 pm
Grabowska	Sarah	40 The Influence of Self-Generated Hand Gestures on Recall	207	1:40 pm
Grawunder	Greg	113 Reproductive Ecology of Fathead Minnows (<i>Pimephales promelas</i>): The Effect of Nest Type on Reproductive Success	121	2:30 pm
Greenley	Jill	9 Assessing the Function of PPKK in C3 Plants Using <i>Arabidopsis thaliana</i> TDNA Gene Knockouts	Main Lounge	1:00 pm
Gruber	Natasha	63 Survey of Wild Turkey (<i>Meleagris gallopavo</i>) Distribution in Cass and Clay Counties	Main Lounge	2:30 pm
Gruber	Natash W.	80 Comparison of Growth Rates and Survival of Painted Turtles (<i>Chrysemys picta</i>) in Clay County, Minnesota	Main Lounge	2:30 pm
Guajardo	Pablo	79 Racism and MSUM	207	3:30 pm
Gubareva	Irina	32 Comparison of teacher certification procedures in U.S.A. and Russia	208	1:20 pm
Guiles	Pamela	13 Topics in the American Renaissance	Kise Line D	1:00 pm
Guthmiller	Michelle	23 The Parent-Child Communication Program: Case Study #9	203	1:00 pm
Hamann	Bree L.	91 Developmental and Behavioral Ontogeny of Antipredator Behavior in Cichlid Larvae	218	1:20 pm
Hannig	Melissa	42 Portfolio Assessment of Young Children	214	3:10 pm
Hanson	Amanda	62 Effect of Aluminum Ion on Corn Root Respiration	Main Lounge	2:30 pm
Hartung	Ashley	37 Mental Illness and Inmates	Main Lounge	1:00 pm

Numbers correspond with abstract listings beginning on page 28

Last Name	First Name	Presentation Title	Room	Time
Haugen	Inga	13 Topics in the American Renaissance	Kise Line D	1:00 pm
Haugen	Inga	36 Shakespeare's Tragedies and Histories	218	3:30 pm
Haverberg	Eric	105 Stars and Stuff: an Introduction to Astrophysics	200A	2:30 pm
Haynes	Angela	85 Parent-Child Communication Program: Case Study #1	214	2:30 pm
Heck	Jessica	95 Investigating DNA Replication Origins in <i>C. elegans</i> .	216	2:50 pm
Hendricks	Jacqueline	135 Gender Differences in Physical, Verbal, and Social Bullying of Elementary Students	214	1:20 pm
Hendrickson	Jodi	104 Can Some Predators Avoid Being Chemically Labeled by Their Prey?	Main Lounge	2:30 pm
Hendrickson	Jodi	58 Effect of Environmental Stresses on Corn Root Respiration	Main Lounge	1:00 pm
Herath	Shanaka	84 Sri Lanka: Facts about the Culture, Life style, Education, Civil War and Terrorism	200D	1:00 pm
Herman	James	132 Spectroscopy and the Spectroscope	218	1:45 pm
Hilton	Kristi	87 Clay County Italian Immigration: Italian Influence on Local Beauty Industry	208	3:30 pm
Hoepfner	Jennifer	13 Topics in the American Renaissance	Kise Line D	1:00 pm
Hoff	Amanda	26 Parent-Child Communication Program (PCCP) - Case Study #4	216	1:00 pm
Hohenstein	Janet	134 Colorful History of Moorhead School: Oak Port.	227	1:20 pm
Holmberg	Heidi	137 Special Problem in Education: Reaching Out to Adopted Minorities	Main Lounge	2:30 pm
Holzer	Chrissie	21 Mary Crowdog / "Lakota Woman"	Main Lounge	1:00 pm
Huber	Cassandra	10 Parent-Child Communication Program: Case Study #10	101	1:20 pm
Hugh	Emily	51 How Do First-Syllable Characteristics Affect Visual Word Recognition of Long Words?	Main Lounge	1:00 pm
Huseby	Nathan	28 Alike, but not the same: A lesson on human genetic variation.	200D	2:50 pm
Imdieke	Aimee	111 Digital Manipulation, Has it gone too Far?	121	2:50 pm
Jacobs	Sarah	43 The Parent-Child Communication Program: Case Study #5	218	1:00 pm
Jeske	Dustin	39 Is Casino Gambling Profitable to the State?	214	3:30 pm
Jetvig	Tessa	29 A Lesson in Genetic Probability	Kise Line D	2:30 pm
Jetvig	Tessa	61 Short-Term Effects of Removing Energy (sucrose) Supply to Growing Corn Roots.	Main Lounge	1:00 pm

Numbers correspond with abstract listings beginning on page 28

Last Name	First Name	Presentation Title	Room	Time
Jinadasa	Ludmi	82 Parent-Child-Communication-Program Case Study #10	208	3:10 pm
Jinadasa	Ludmi	84 Sri Lanka: Facts about the Culture, Life style, Education, Civil War and Terrorism	200D	1:00 pm
Jinadasa	Pat	84 Sri Lanka: Facts about the Culture, Life style, Education, Civil War and Terrorism	200D	1:00 pm
Johnson	Heidi	70 Effects of Oxidative Stress on Saccharomyces cerevisiae FKH1 Transcription Factor Knockout	Main Lounge	2:30 pm
Johnson	Jessica	50 Phospholipase D Regulates Stress Fiber Formation By Phenylephrine Stimulation in CCL39 cells	Main Lounge	1:00 pm
Johnson	Ann	86 Modeling of Upper-Level Degrees Earned Among Different Races	Main Lounge	2:30 pm
Johnson	Jessica	52 Phospholipase D Regulates Stress Fiber Formations By Phenylephrine Stimulation in CCL39 cells	Kise Line D	2:05 pm
Johnson	Lindsey	3 Isabella and Bolinda Tuylendina	205	2:50 pm
Jost	Gretchen	14 Nonny's Flair: An Examination of a Children's Book Illustrator.	218	2:30 pm
Kapsner	Katie	99 The United States Beer Industry	216	3:10 pm
Karunadharma	Pabalu	117 Expression of Mitochondrial Genes in Wheat (Triticum aestivum L.)	227	3:30 pm
Keisacker	Jessica	34 Keith Haring: Success and Controversy in Mass Exposure	207	1:00 pm
Keller	Chelsea	2 Guided Notes in Mathematics Classes	Main Lounge	1:00 pm
Kleffer	Holly	72 Relating the Biological, Ecological and Societal Values in Order to Bring Attention to the Overall Importance of Virgin Prairie Land to Our Region and Nation as a Whole.	208	2:30 pm
Kippen	Kadie	13 Topics in the American Renaissance	Kise Line D	1:00 pm
Kizima	Geniece	48 The Parent-Child Communication Program, Case Study #8	207	2:00 pm
Klassen	Tracy	119 Parent-Child Communication Program	203	2:50 pm
* Kleindl	Jessica	97 Exploring the Roles of Nurse Practitioner in Rural Health Care	Main Lounge	2:30 pm
Knudson	Tanya	68 The Malady of Fibromyalgia	208	2:00 pm
Knutson	Julie	58 Effect of Environmental Stresses on Corn Root Respiration	Main Lounge	1:00 pm
Kock	Cindi	24 Are you interested in becoming a Certified Nursing Assistant?	Main Lounge	1:00 pm

Numbers correspond with abstract listings beginning on page 28

Last Name	First Name	Presentation Title	Room	Time
Kopel	Heidi	88 Parent-Child Communication Program Case Study #2	205	2:30 pm
Kubista	Shelly	42 Portfolio Assessment of Young Children	214	3:10 pm
Larson	Ryan	27 Ethics: An Imperative Part of Any Business	207	1:20 pm
Larson	Sara	9 Assessing the Function of PPKK in C3 Plants Using Arabidopsis thaliana TDNA Gene Knockouts	Main Lounge	1:00 pm
Larson	Tom	28 Alike, but not the same: A lesson on human genetic variation.	200D	2:50 pm
Larson	Tom	59 Can corn root respiration be stimulated by pre-treating corn roots in iron fertilizer?	Main Lounge	1:00 pm
Lein	Christina	5 Theatre of the Absurd	200A	1:00 pm
Lembke	Candace	53 Breathing, How it Works!	200A	1:20 pm
Leopold	Carrie	58 Effect of Environmental Stresses on Corn Root Respiration	Main Lounge	1:00 pm
Levorsen	Alicia	73 Green Fluorescent Protein Purification and Polyclonal Antibody Production in Rabbits	Main Lounge	2:30 pm
Lhotka	Michele	130 Rates of Groundwater Cadmium Attenuation in Gravels Impregnated with Glacial Clay in the Red River Valley	Main Lounge	2:30 pm
Liberda	Chris	65 A Look at the Changing Music Industry from an Economic Perspective	207	2:50 pm
Lien	Tammy	25 Cell Cycle Genes and Their Effects on Mitochondrial Inheritance and Dynamics	Main Lounge	1:00 pm
Lindeman	Jennifer	108 Portrait Drawing Demonstrations: Methods and Meanings	200C	2:30 pm
Linstad	Jayne	101 The Car Problem; Whether to Buy or Lease.	Main Lounge	2:30 pm
Lipp	Amanda	73 Green Fluorescent Protein Purification and Polyclonal Antibody Production in Rabbits	Main Lounge	2:30 pm
Lisa	Streitz	54 Is Mitochondrial Inheritance Tissue Specific? A New Look at the mtDNA Dogma from a Cell Biology Perspective.	Main Lounge	1:00 pm
Lof	Kay	15 Providing Health Care in Nicaragua: Nursing Student's Experience	Main Lounge	1:00 pm
Mastel	Tracy	63 Survey of Wild Turkey (Meleagris gallopavo) Distribution in Cass and Clay Counties	Main Lounge	2:30 pm
Mastel	Tracy	69 Genetic Diversity Influencing Survival Among Declining Populations of Black-tailed Prairie Dogs.	Main Lounge	2:30 pm
Matteson	Ben	31 Greek Theatre	200A	3:40 pm

Last Name	First Name	Presentation Title	Room	Time
Mau	Jen	43 The Parent-Child Communication Program: Case Study #5	218	1:00 pm
McCamant	Virginia	71 Deadly Diseases Among Us	101	3:10 pm
McColley	Patrick	5 Theatre of the Absurd	200A	1:00 pm
McCoy	Austin	98 Advanced Optical Imaging-Experiences at looking through the world with different lenses (objectives).	203	1:20 pm
McCracken	Amanda	83 Seeing the Unseen with Geophysical Methods	Main Lounge	2:30 pm
Medhus	Jared	93 Web Research: Advertising, Public Relations-Marketing, News, Television, and Radio Online	216	2:30 pm
Meier	Kierston	13 Topics in the American Renaissance	Kise Line D	1:00 pm
Metcalfe	Alison	67 The Role of PKC in RhoA Activation and Stress Fiber Formation	Main Lounge	2:30 pm
Mies	Julie	4 Multiplication Made Easy	205	3:10 pm
Mikelson	Valerie	108 Portrait Drawing Demonstrations: Methods and Meanings	200C	2:30 pm
Mische	Hannah	124 Signature Quilt	121	1:40 pm
Mishra	Anusha	96 Phenylephrine Activates Na ⁺ -H ⁺ Exchangers via Bifurcating Pathways Involving RhoA and	Main Lounge	2:30 pm
Pfeifer	Kate	61 Short-Term Effects of Removing Energy (sucrose) Supply to Growing Corn Roots.	Main Lounge	1:00 pm
Pfeifer	Kate	29 A Lesson in Genetic Probability	Kise Line D	2:30 pm
Plattner	Alycia	55 A Glimpse Into the World of a Systems Analyst	Main Lounge	1:00 pm
Pudil	Samantha	136 Shakespearean Theatre	200D	2:30 pm
Quade	Katie	42 Portfolio Assessment of Young Children	214	3:10 pm
Rajapakse	Pushpakantha	84 Sri Lanka: Facts about the Culture, Life style, Education, Civil War and Terrorism	200D	1:00 pm
Ranguma	Sonnica	122 Growth Curve of Staphylococcus Epidermidis	Main Lounge	2:30 pm
Ranstrom	Lindsay	47 The Influence of Prayer and Religious Beliefs on Measures of Life Satisfaction	Main Lounge	1:00 pm
Reames	Cory	1 Some Multiplication Tricks	205	1:00 pm
Richgels	Erin	86 Modeling of Upper-Level Degrees Earned Among Different Races	Main Lounge	2:30 pm
Ringstrom	Bruce	129 Genocide and the Normality of the Perpetrators of Evil	227	1:40 pm
Roberson	Brianne	13 Topics in the American Renaissance	Kise Line D	1:00 pm

Numbers correspond with abstract listings beginning on page 28

Last Name	First Name	Presentation Title	Room	Time
Rodke	Stephanie	10 Parent-Child Communication Program: Case Study #10	101	1:20 pm
Ronderos	Dave S.	96 Phenylephrine Activates Na ⁺ -H ⁺ Exchangers via Bifurcating Pathways Involving RhoA and ERK as Downstream Effects of Different Protein Kinase C Isoforms	Main Lounge	2:30 pm
Roshau	Jessica	66 Cohabitation and Divorce	Main Lounge	2:30 pm
Rud	Courtney	104 Can Some Predators Avoid Being Chemically Labeled by Their Prey?	Main Lounge	2:30 pm
Rufsvold	Tracey	88 Parent-Child Communication Program Case Study #2	205	2:30 pm
Ruzicka	Amy	85 Parent-Child Communication Program: Case Study #1	214	2:30 pm
Rzaszutak	Mariya	71 Deadly Diseases Among Us	101	3:10 pm
Sandbek	Adam	102 Target: Upscale Discounting and Power Relationships	214	2:00 pm
Sander	James	92 Early Fraternal Organizations of Clay County	121	3:30 pm
Sanders	Meridith	114 The Wine Industry	203	2:00 pm
Sang	Rachel	50 Phospholipase D Regulates Stress Fiber Formation By Phenylephrine Stimulation in CCL39 cells	Main Lounge	1:00 pm
Sang	Rachel	52 Phospholipase D Regulates Stress Fiber Formations By Phenylephrine Stimulation in CCL39 cells	Kise Line D	2:05 pm
Santana	Castel	118 The Conversion of MDH to LDH Through Site Directed Mutagenesis	Main Lounge	2:30 pm
Sawarynski	Megan	131 NMR Line Widths as a Signature of Crystal Geometry and Dynamics.	Main Lounge	2:30 pm
Schmit	Joanna M.	80 Comparison of Growth Rates and Survival of Painted Turtles (<i>Chrysemys picta</i>) in Clay County, Minnesota	Main Lounge	2:30 pm
Semelis	Katie	108 Portrait Drawing Demonstrations: Methods and Meanings	200C	2:30 pm
Sherman	Brandon	140 China's One Child Policy: The Changing Face of Family Planning	121	1:00 pm
Shrestha	Binod	101 The Car Problem; Whether to Buy or Lease.	Main Lounge	2:30 pm
Shreve	Aaron	89 The Recent Changes in the Immigration and Asylum System of the United Kingdom and Their Detrimental Affects	216	1:40 pm
Simmons	Jindallay	124 Signature Quilt	121	1:40 pm

Numbers correspond with abstract listings beginning on page 28

Last Name	First Name	Presentation Title	Room	Time
Simms	Ava-Gaye	19 Loving the Tummy	218	3:00 pm
Simms	Ava-Gaye	94 How do MAPK/ERK Kinases Regulate Microtubule Spindle Formation?	Main Lounge	2:30 pm
Skjoiten	Kara	8 The Parent-Child Communication Program: Case Study #7	208	1:00 pm
Skolte	Jill	56 An Initial Biochemical Analysis of Autism	Main Lounge	1:00 pm
Sletten	Jessica	133 Women's Empowerment	121	2:00 pm
Smith	Sarah Jane	93 Web Research: Advertising, Public Relations-Marketing, News, Television, and Radio Online	216	2:30 pm
Smith	Rachael	112 Form Follows Function: Why Animals Look the Way They Do	Underground	1:00 pm
Splonskowski	Beth	87 Clay County Italian Immigration: Italian Influence on Local Beauty Industry	208	3:30 pm
Stanina	Jaynae	11 Intravenous Catheters Used in the Intensive Care Unit	Main Lounge	1:00 pm
Stein	Erika	115 Mothers and unfair pre-natal care.	Main Lounge	2:30 pm
Stinar	Kari	8 The Parent-Child Communication Program: Case Study #7	208	1:00 pm
Stroh	Julie	3 Isabella and Bolinda Tuylendina	205	2:50 pm
Takahashi	Mika	108 Portrait Drawing Demonstrations: Methods and Meanings	200C	2:30 pm
Teske	Rich	59 Can corn root respiration be stimulated by pre-treating corn roots in iron fertilizer?	Main Lounge	1:00 pm
Thompson	Andy	118 The Conversion of MDH to LDH Through Site Directed Mutagenesis	Main Lounge	2:30 pm
Thronson	Hillary	120 The role of NHE1 in Balb-c rat tumorigenesis	227	3:10 pm
Trautwein	Jessica	35 Extensions of Synthetic Division	203	3:10 pm
Tripathi	Virendra	90 Predictions in Daily Lives - Can They Be Justified?	216	2:00 pm
Tweed	Jeremy	127 Sports Economics	121	1:20 pm
Vave	Rebecca	74 The Rise of Korean Nationalism Leading Up to the Samil	Kise Line D	3:30 pm
Veslede	Heide	13 Topics in the American Renaissance	Kise Line D	1:00 pm
Villarreal	Angie	78 Language Disorders: The Elements and Instituting a Classroom Model.	216	1:20 pm
Wananu	Moses	56 An Initial Biochemical Analysis of Autism	Main Lounge	1:00 pm
Wasche	Rachel	101 The Car Problem; Whether to Buy or Lease.	Main Lounge	2:30 pm

Numbers correspond with abstract listings beginning on page 28

Last Name	First Name	Presentation Title	Room	Time
Weerasekara	Akila	94 How do MAPK/ERK Kinases Regulate Microtubule Spindle Formation?	Main Lounge	2:30 pm
West	Megan	31 Greek Theatre	200A	3:40 pm
Westerfield	Eli	16 Being Genderqueer in a Binary Gender System: A Discussion About Gender	205	1:45 pm
Wijesighe	Samadhi	84 Sri Lanka: Facts about the Culture, Life style, Education, Civil War and Terrorism	200D	1:00 pm
Wilder	Gina	13 Topics in the American Renaissance	Kise Line D	1:00 pm
Wittmier	Megan	49 The Changing Face of St.Francis de Sales	Main Lounge	1:00 pm
Zillgitt	Jessica	36 Shakespeare's Tragedies and Histories	218	3:30 pm
Zillgitt	Jessica	13 Topics in the American Renaissance	Kise Line D	1:00 pm

Abstracts

1

Title: Some Multiplication Tricks

Presenter(s): Mark Dollerschell, Cory Reames

Department: Mathematics

Advisor: Geok Ng

Abstract: A presentation of how to perform some multiplication without the use of calculators. The techniques learned can be applied to everyday situations.

2

Title: Guided Notes in Mathematics Classes

Presenter(s): Chelsea Keller

Department: Mathematics

Advisor: Kristine Montis

Abstract: I will be displaying a poster on guided notes in mathematics classes, and I will also be telling about and displaying information on my experience as a co-presenter at the RCML (Research Council on Mathematics Learning) Conference in Oklahoma City. The presentation that Dr. Kristine Montis and I will be doing at the RCML Conference is on guided notes as a means of success at the secondary and college levels.

3

Title: Isabella and Bolinda Tuylendina

Presenter(s): Lindsey Johnson, Julie Stroh, Danielle Peterson

Department: Education

Advisor: Brian Smith

Abstract: We have applied our knowledge of the human condition to twin first grade girls, applying major psychologists and their theories to the girls' lives and actions.

4

Title: Multiplication Made Easy

Presenter(s): Julie Mies, Andrea Mumm

Department: Mathematics

Advisor: Geok Ng

Abstract: Multiplication made easy by "tricks" or "shortcuts". Methods that are presented are functional and fast.

5

Title: Theatre of the Absurd

Presenter(s): Natalie Novacek, Christina Lein, Patrick McColley

Department: Theatre Arts

Advisor: Theresa Carson

Abstract: We will discuss the rise of absurdism and the important playwrights of the movement. We will also be performing 2 short scenes from absurdist plays.

6

Title: The Social Problem of Battered Women

Presenter(s): Kelly Nerby

Department: Sociology

Advisor: Sue Humphers-Ginther

Abstract: Woman battery is a social problem in our nation today although not many hear about it. It is a major cause of injury, disability, and death among American women, as among many world wide. In most cases today police officers refuse to arrest a man for beating his wife, and most courts refuse to prosecute them. Battery continues to exist because it reflects basic cultural and political forces in our society and around the world. What exactly are we teaching our kids who have to sit back and watch this violence in their own home? In the last decade we have made some advances in helping these women but there is still more that can be done. People need to know how they can help abused women to get out of the relationship safely, or if they themselves need help getting out.

7

Title: An Economic Study Of Household Income

Presenter(s): Chad Andel

Department: Economics

Advisor: Oscar Flores-Ibarra

Abstract: Using economic theory and regression analysis I will discuss how a college graduate's household income is expected to depend on chosen independent variables.

8

Title: The Parent-Child Communication Program: Case Study #7

Presenter(s): Kari Stinar, Kara Skjoiten

Department: SLHS

Advisor: Dr. Louis De Maio

Abstract: The study we conducted was one of twelve 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 questions before and after the training program.

9

Title: Assessing the Function of PPDK in C3 Plants Using *Arabidopsis thaliana* TDNA Gene Knockouts

Presenter(s): Sara Larson, Jill Greenley

Department: Biology

Advisor: Chris Chastain

Abstract: Pyruvate, orthophosphate dikinase (PPDK) is an enzyme involved in the photosynthetic process of C4 plants. The function of PPDK in C3 plants has yet to be discovered. Here, we aim to determine whether PPDK plays a secondary role (not necessary for plant survival) or primary role (necessary for plant survival) in plant metabolism. Our hypothesis is if PPDK plays only a secondary role in plant metabolism, then *Arabidopsis* plants lacking PPDK may be able to survive and grow, although, illustrating an inferior phenotype with low vigor. We will test our hypothesis by obtaining plants that lack PPDK through using TDNA gene knockouts. *Arabidopsis thaliana* plants have been chosen for this study as they are an ideal C3 plant with available PPDK TDNA gene knockout lines. An ArabiPatch apparatus will be used to cultivate *Arabidopsis* plants. Leaf tissue will be extracted to determine if PPDK is present using Western blot analysis. Identified mutants will be cultivated in stressed environments. Failure to germinate will result in cultivation in nutrient-rich agar or the use of heterozygote plants.

10

Title: Parent-Child Communication Program: Case Study #10

Presenter(s): Cassandra Huber, Stephanie Rodke

Department: SLHS

Advisor: Louis De Maio

Abstract: The study we conducted was one of twelve 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 questions before and after the training program.

11

Title: Intravenous Catheters Used in the Intensive Care Unit

Presenter(s): Jaynae Stanina

Department: Nursing

Advisor: Donna Heald

Abstract: I plan to research, plan, and present the different uses and styles of intravenous (IV) ports/catheters used on adults in the hospital setting on critical patients. The presentation will be posted on poster/bulletin board visual with detailed explanation of each port/catheter on pamphlets provided with the use of PowerPoint. As a nursing student obtaining my baccalaureate degree, I participated in a ninety-hour clinical preceptorship in an adult intensive care unit. During this time, I got to work first hand with patients who had a variety of IV catheters for various reasons. I would like the opportunity to be able to explain the different types of IV catheters and answer questions regarding the topic.

12

Title: Orchid Habitat in Northern Minnesota

Presenter(s): Tiffany Finke

Department: Anthropology/Earth Science

Advisor: Paul Sando

Abstract: My presentation will be based on information collected during a botany internship with the Minnesota DNR. The internship began in May 2003 and ended in August 2003. I used a Garmin GPS in the field and GIS Arcview software in the lab to create a GIS analysis of orchids found throughout northern Minnesota.

13

Title: Topics in the American Renaissance

Presenter(s): Amanda Easton, Brittany Daley, Amber Anderson, Devin Butler, Shelley Flake, Heide Veslede, Kierston Meier, Jennifer Hoepfner, Brianne Roberson, Jessica Zillgitt, Eric Gomez, Gina Wilder, Inga Haugen, Pamela Guiles, Kadie Kippen

Department: English

Advisor: Sheila Coghill

Abstract: This session will be a multiple-student presentation of a variety of topics students researched for their major course papers in English 322: (1) The American Renaissance. Topics include, but are not limited to: (1) The Ethos of Redemption Through Death: Paradigms and Parallels in Harriet Beecher Stowe's *Uncle Tom's Cabin* & Nathaniel Hawthorne's "Rappacini's Daughter" (2) "Like the Picture of Some Bright Angel Stopping to Reclaim a Sinner": Harriet Beecher Stowe's Use of Redemption to Reorganize Culture in *Uncle Tom's Cabin* (3) "Nevermore": Suffering in the Literature of Misery and the Creation of Literature of Isolation in Emily Dickinson's Poetry and Melville's *Bartleby The Scrivener* (4) Subverting Conventionality: Establishing Minority Identity in Frederick Douglass's *The Meaning of the Fourth of July for the Negro* and Harriet Beecher Stowe's *Uncle Tom's Cabin* (5) "Have You Ever Lost a Child?": The Power of Motherhood in Stowe's *Uncle Tom's Cabin* and Hawthorne's *Scarlet Letter* (6) Volcanoes, the Other and the Poetry of the Precipice: Emily Dickinson's and Walt Whitman's Poetry of Subversion (7) The Soul's Journey To Transformation By Way of Retreat: Emotion and Ratiocination in Susan Warner's *Wide, Wide, World* and Edgar Allen Poe's *The Purloined Letter* (8) "O, Had I the Wings of the Morning, I'd Fly Away to Cannan's Shore": Harriet Beecher Stowe's Subversion of the Sentimental Heroine Convention in Constructing Uncle Tom and Edgar Allen Poe's Characterization of Roderick Usher in *The Fall of the House of Usher*.

14

Title: Nonny's Flair: An Examination of a Children's Book Illustrator.

Presenter(s): Kinsey Church, Gretchen Jost, Andrea Boyer

Department: Elementary Education

Advisor: Carol Sibley

Abstract: Our slide show presentation examines the background of Nonny Hogrogian, a children's book illustrator. This includes an in-depth analysis of selected picture books, including those that have won the Caldecott Award.

15

Title: Providing Health Care in Nicaragua: Nursing Student's Experience"

Presenter(s): Tami Byklum, Kay Lof

Department: Nursing

Advisor: Jane Bergland

Abstract: Overview of health care in Nicaragua and our experiences as health care providers in this country.

16

Title: Being Genderqueer in a Binary Gender System: A Discussion About Gender

Presenter(s): Eli Westerfield

Department: Sociology

Advisor: Deb White

Abstract: In theory, transgender is a challenge to the social construction of gender. In practice, it usually is not. Transgendered people—in one way or another—place themselves outside the conventional female/male dichotomy. However, transgendered people live in a world that recognizes only female and male, a world where they have to be one or the other. People who live openly as transgendered still have gender attributions made about them by the casual passerby, even if they passerby has questions about the person's gender identity. This is because there is the belief that everyone can and must be classified as being either female or male. How can a self-identified transgendered/genderqueer person earn and maintain a transgender identity, when non-transgendered people feel the need to attribute a specific gender to that person?

17

Title: The Scots are Not English: Understanding Contemporary Scottish Identity

Presenter(s): Sarah Christianson

Department: History

Advisor: Margaret Sankey

Abstract: During a recent Independent Study in Scotland, I met many Scots that took offense at the slightest mention of anything related to England. I was determined to find out why. This presentation discusses some of the major historical events that helped to shape this aspect of contemporary Scottish identity.

18

Title: Student Voices Through Poetry, Music and the Visual Arts: Responses to an Alternative Education Service Learning Project

Presenter(s): Nicholle Breikjern, Adam Ahonen, Lang Charles, Block Erik

Department: Foundations of Ed

Advisor: Steve Grineski

Abstract: Students enrolled in Steve Grineski's Social Foundations of Education class complete a service learning project with students from the Red River Area Learning Center (RRALC). Over the course of the semester, these teacher education students participate in community-based recreational activities and provide academic tutoring with the RRALC students. As a culminating assignment, students prepare a project that responds to the alternative education experience and describe what they learned. Nicholle Breikjern will discuss an interview she conducted with a RRALC student and share a poster she created. Charles Lang will show a sculpture and talk about how it captures his ideas about alternative education, Erik Block will perform an original musical composition that reveals his thinking about the difficulties many alternative education students face and Adam Ahonen will share a piece of art and accompanying poem that highlights the importance of high teacher expectations for alternative education students.

19

Title: Loving the Tummy

Presenter(s): Ava-Gaye Simms

Department: MSUM Peer Health Educators

Advisor: Lynn Peterson

Abstract: This presentation aims to educate and to teach students that "Loving the Tummy" is an essential part of a healthy lifestyle. Students will learn that nutritional information is readily available and they will be enlightened on how to use these resources. In addition, students will be encouraged to think about what they eat through interactive games that place participants in realistic settings and require group participation. Students will see that eating healthy can be delicious and fun.

21

Title: Mary Crowdog/"Lakota Woman"

Presenter(s): Chrissie Holzer

Department: Center for Multidisciplinary Studies

Advisor: Yayha Frederickson

Abstract: The study of Multi-Cultural American Literature, with a poster presentation on Mary Crowdog and her published works "Lakota woman". Integrating traditional Native American art with passages from her book and information about her origins, it brings to life her struggles and accomplishments being a female American Indian in the United States.

22

Title: Solutions to Meinong's Theory of Objects

Presenter(s): Peter Montecucollo

Department: Philosophy

Advisor: Phil Mouch

Abstract: Alexius Meinong attempts to solve one of the major problems in the philosophy of language: the problem of negative existentials. This problem arises when we attempt to make meaningful statements about things which do not exist. For instance, the statement "Pegasus has wings" is a claim that there exists a thing such that it is Pegasus and it has wings. But since there is no such thing that exists and is Pegasus, and there has never been a thing such that it existed and was Pegasus, then how is it possible to mean anything by the statement? Meinong, however, attempts to solve this problem by positing different levels of existence. This theory has some very good insights into the problem of negative existentials, but he also runs into some serious problems. This presentation is an attempt to explicate how these existence levels work and to reconcile the problems Meinong faces in his theory. The goal is to demonstrate that Meinong's theory could work, thus allowing us to make meaningful statements about negative existentials.

23

Title: The Parent-Child Communication Program: Case Study #9

Presenter(s): Michelle Guthmiller, Leah Anderson

Department: Speech/Language/Hearing Sciences

Advisor: Louis De Maio

Abstract: Our study was one of twelve 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 questions before and after the training program.

24

Title: Are you interested in becoming a Certified Nursing Assistant?

Presenter(s): Cindi Koch

Department: Nursing

Advisor: Donna Heald

Abstract: Offering a job opportunity that may promote a further interest in a nursing career. A 75 hour class could give good wages - to help pay tuition and possibly advance person into a health care field. CNA's are a vital part of Long Term Care and would benefit the community!

25

Title: Cell Cycle Genes and Their Effects on Mitochondrial Inheritance and Dynamics

Presenter(s): Tammy Lien, Autumn Dinnel

Department: Biology

Advisor: Ellen Brisch

Abstract: Mitochondria are responsible for cellular respiration. As they are essential for life, it is critical that they are transported from mother to daughter cell during division. Previous research has shown that mitochondria are transported along the cytoskeleton; they move, fuse, and separate while anchored to the cytoskeleton (Boldogh, 2001). Thus, the cytoskeleton plays an important role in the morphology and distribution of mitochondria throughout the cell cycle. Under normal conditions mitochondria appear as reticular tube-like structures located at the cortex of the cell. Under abnormal conditions, morphology takes on different forms, and mitochondria can begin to aggregate, or clump abnormally (McCoy, Johnson, Risan, 2003). These mutations are usually associated with some loss of function. The work we propose is based on previous research where proteins closely associated to the mitochondria were mutated (membrane associated proteins involved with fusion and fission of membranes) and morphological as well as distribution changes were observed (Brisch, 2001). However the changes were never associated with specific phases of the cell cycle. We plan to mutate three cell cycle genes, *cdc28*, *swe1*, and *bub1*. We will use a TS Degron/ PCR approach to generate temperature-sensitive cell cycle specific mutants. After successful transformation, we will examine mitochondrial morphology and distribution regarding our mutations via microscopy and fluorescent staining.

26

Title: Parent-Child Communication Program (PCCP) - Case Study #4

Presenter(s): Heidi Mork, Amanda Hoff

Department: Speech-Language Hearing Science (SLHS)

Advisor: Louis J. DeMaio, Ph.D.

Abstract: For our research project we are studying whether a mother's use of facilitative techniques increases after Parent-Child Communication Program (PCCP) training. Specifically, we are evaluating and comparing a mother's use of facilitative techniques in conversation with her preschool child before formal training with PCCP and after formal training with PCCP. Our ultimate goal is to determine if the mother's use of facilitative techniques has increased. Facilitative techniques include input, feedback, and revision components. These techniques improve a child's language when used by a mother during conversation. We hypothesize that the mother's use of facilitative techniques will increase after formal PCCP training.

27

Title: Ethics: An Imperative Part of Any Business

Presenter(s): Ryan Larson

Department: Accounting

Advisor: James Hansen

Abstract: We will look at how to be an ethical person. Also, we will explore why companies are getting in trouble. Why is this a problem now and what can our country do about it? Finally, we will analyze some of the steps and procedures that have already been taken in solving this ethical crisis in our country.

28

Title: Alike, but not the same: A lesson on human genetic variation.

Presenter(s): Nathan Huseby, Tom Larson

Department: Biology

Advisor: Alison Wallace

Abstract: A class wide inventory of human traits to compare and contrast the similarities and differences of these traits.

29

Title: A Lesson in Genetic Probability

Presenter(s): Kate Pfeifer, Tessa Jetvig

Department: Biology

Advisor: Alison Wallace

Abstract: Participants will explore the relationship of genotype and phenotype, and the role of probability in genetics through an activity.

30

Title: Commedia Dell'arte

Presenter(s): Greta Frank, Steven Fick, Nick Foss

Department: Communication Speech, Film, and Theatre Arts

Advisor: Theresa Carson

Abstract: A short presentation of the history of Commedia Dell'arte, and then an acting presentation of this style of Theatre.

31

Title: Greek Theatre

Presenter(s): Megan West, Ben Matteson

Department: Communication Speech, Film and Theatre Arts

Advisor: Megan West

Abstract: An introduction to Greek Theatre and a performance in the portrayal of this type of acting style.

32

Title: Comparison of teacher certification procedures in U.S.A. and Russia

Presenter(s): Irina Gubareva

Department: Education

Advisor: Dean Mollerud

Abstract: In my presentation I'm going to compare the procedures of teacher certification in Russia and the USA and point out the priorities in the area of teacher preparation in both countries.

33

Title: Aseptic Technique

Presenter(s):

Department: Nursing

Advisor: Donna Heald

Abstract: Poster presentation describing the history, importance, and examples of aseptic technique.

34

Title: Keith Haring: Success and Controversy in Mass Exposure

Presenter(s): Jessica Keisacker

Department: Art

Advisor: Anna Arnar

Abstract: Keith Haring is, arguably, one of the most widely-distributed artists in the contemporary Art world. He was able to connect people with his works and messages in all demographic sectors. His activist art not only informed but created interest among the masses about issues surrounding intolerance, drug-addiction and AIDS. Keith Haring's views on mass production/distribution were controversial and revolutionary in the 1980's. I plan to discuss the formal qualities of his art, how his technique created a universal race and message and how the Pop Shop and other distribution plans created part the Keith Haring's legacy and controversy in the High Art arena.

35

Title: Extensions of Synthetic Division

Presenter(s): Jessica Trautwein

Department: Mathematics

Advisor: Derald Rothmann

Abstract: Most students usually encounter the basic synthetic division techniques in beginning algebra classes. There they use it to divide a polynomial $P_n(x)$ by a factor of the form $x-a$, obtaining a quotient $Q_{n-1}(x)$, remainder r , and byproduct $P_n(a)$. In this presentation I will show how repeated synthetic division can be used to evaluate derivatives of $P_n(x)$ at $x=a$. Some possible applications of these extensions will also be discussed.

36

Title: Shakespeare's Tragedies and Histories

Presenter(s): Jessica Zillgitt, Inga Haugen, Eric Gomez

Department: English

Advisor: Sandy Pearce

Abstract: Shakespeare's Tragedies and Histories A brief sketch of the papers we will be presenting:(A History) A Tragedy of Errors: The Misconception of Richard the Second as a Tragic Hero The most humorous element about the King Richard the Second lies in the dichotomy of his mouth and brain. In most instances the organ of the brain and mechanics of the mouth work in conjunction and compliment the other. Yet, poor Richard surrounds himself with sycophants and toadies all the while spouting the most beautiful metered poetry. Stupidity does not equate to tragedy. Though The Necessary Shakespeare by David Bevington titles Shakespeare's play The Tragedy of Richard the Second, the character of Richard the Second clearly does not conform to the criterion of a tragic hero according to the Aristotelian model. Using four common criterions from Aristotle's Poetics, and evaluating Richard the Second's characteristics will show the error in this play's classification. (The Tragedy) The Cost of Linen in Othello Size really does matter. The smaller the piece, the more significant it is. In Othello, larger textiles, such as standards and sheets, are actually less important than a single handkerchief. The significance of textiles in the play occurs in an inverse proportion to their size and normal importance. A single handkerchief costs the lives of Cassio, Roderigo, Desdemona and Othello, whereas reputations buy wedding sheets and standards. This paper examines fabric references within Othello, specifically standards, sheets, and small pieces of apparel. (The other History) Shakespeare's Use of Traitors to Demonstrate Leadership of Kings in His Histories The kings in Shakespeare's second series of plays dedicated to the history of England present a large variety of personality traits and leadership methods. Evaluating the manner in which each king approaches subjects who conspire to disobey or destroy his reign reflects many of the differences in the leadership of the kings. These differences impact how audiences view each king's competence as a ruler. A comparison of the three kings' approaches to traitors illustrates the superiority of King Henry V's leadership qualities over those of King Henry IV and King Richard II.

37

Title: Mental Illness and Inmates

Presenter(s): Ashley Collins, Ashley Hartung

Department: Sociology

Advisor: Susan Humphers-Ginther

Abstract: People with mental illnesses are treated as maybe victims of a sickness in the mind. They are many times given as much help and love as others can provide. Although there are many inmates who are living with a mental illness. These people are treated as being the horrible criminals that prey on the victims. They are not treated as the victims as others with mental illnesses are. In many of these cases these inmates are affected by a mental illness that take over some of their criminal actions. Should these inmates be in prisons as criminals or psychiatric hospitals as victims?

38

Title: Commercial Banking: Nationally and Locally

Presenter(s): Darren Glur

Department: Economics (senior seminar, 498)

Advisor: Oscar Flores

Abstract: This presentation will focus on national and local banks. It will demonstrate certain strategies involved in order to maintain business and increase profits. The local market will also be compared to the national market to determine if the local Fargo-Moorhead banks are following the same trends that the national banking industry is following.

39

Title: Is Casino Gambling Profitable to the State?

Presenter(s): Dustin Jeske

Department: Economics

Advisor: Oscar Flores

Abstract: This presentation will attempt to explain if the state profits from the operation of Native American Casinos. (Using regression analysis)

40

Title: The Influence of Self-Generated Hand Gestures on Recall

Presenter(s): Sarah Grabowska

Department: Psychology

Advisor: Magdalene Chalikia

Abstract: The combination of hand gestures and speech is a possible means to facilitating communication and learning, which has been supported by research. Very few studies have measured the effects of self-generated hand gestures on cognitive functions. My research analyzes the influence of self-generated hand gestures on word recall.

41

Title: Small Group Decision Making

Presenter(s): Angela Baukol

Department: Speech Communication

Advisor: Tim Borchers

Abstract: I will be presenting a research paper discussing the problem solving and decision making processes within a small group. The presentation will discuss how effective these processes are when used by a small group in the workplace.

42

Title: Portfolio Assessment of Young Children

Presenter(s): Shelly Kubista, Courtney Gaa, Erin Muff, Melissa Hannig, Katie Quade

Department: Elementary and Early Childhood Education

Advisor: Karen Danbom

Abstract: Our session will look at the benefits of ongoing, observational assessments of young children. We have created portfolios using multiple methods of assessment. We observed a Hispanic, bilingual child and a child with Down syndrome. Early childhood characteristics provide evidence that this method is more reliable than standardized testing of young children. Portfolio assessments initiate excellent conversations with parents, as opposed to reading scores from standardized testing results.

43

Title: The Parent-Child Communication Program: Case Study #5

Presenter(s): Sarah Jacobs, Jen Mau

Department: SLHS

Advisor: Louis DeMaio

Abstract: The study we conducted was one of twelve 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 questions before and after the training program.

44

Title: Chemical Characterization of Ostariophysan Alarm Substance

Presenter(s): Bethany Ehlers

Department: Biology

Advisor: Brian Wisenden

Abstract: The Ostariophysi is a group of freshwater fishes that include the minnows, tetras, catfishes and suckers. Collectively, they comprise about 64% of all freshwater fish species in the world. One feature that all of these fish have in common is the presence of specialized cells in their skin that contain an alarm substance. When the fish is attacked by a predator, these cells are ruptured and the substance is released. Nearby fishes smell the chemical and adopt antipredator behaviors that reduce their probability of being captured by the predator. The chemical nature of alarm substance is not well understood. Some evidence points toward a small molecule, other evidence suggests that it is a large molecule such as a protein. In this study, we used dialysis tubing to separate skin extract of zebra danios into large and small molecules and tested if each fraction retained the ability to invoke a fright behavior in zebra danios. Understanding the chemical nature of this signaling system will contribute to greater understanding of the ecology of this dominant group of fishes.

45

Title: Children's Literature - A cooperative study

Presenter(s): John Myers

Department: Elementary and Early Childhood Education

Advisor: Barb Worman

Abstract: The presentation will discuss a project I was involved in concerning children's literature. Literature has a drastic effect on children's lives and it is something that is a necessity in order to grow and mature. Cooperative learning involves both give and take in children's lives.

46

Title: Investigation of a Novel Method to Purify Plasmid DNA

Presenter(s): Amanda Anania

Department: Biology

Advisor: Dr. Mark Wallert & Dr. Joseph J. Provost

Abstract: Plasmid DNA is a small DNA containing self-reproducing element that exists outside the chromosome, such as in particular types of bacteria. They have the potential to alter a hereditary characteristic when introduced into another bacterium. Plasmid DNA is used in many biotechnology applications. Thus, there is a high demand for pure and inexpensive DNA that is easy to produce. The current state of purification of plasmid DNA takes around 8 hours to complete and is expensive because most commercially available kits are not reusable. We are working with a new material that can decrease the time involved with plasmid purification, cut the costs, and is reusable. Endotoxin is a bacterial protein that commonly co-purifies with DNA and is a potential problem for using the DNA with mammalian cells and for gene therapy. This new kit will decrease the amount of endotoxin without using detergents or other potentially dangerous compounds used in many kits. By using this new material, we hope to achieve comparable yields and purity obtained by the popular conventional methods/kits. Ultimately, the process can be beneficial in the aid of production of such important substances such as insulin or other biotechnology produced proteins.

47

Title: The Influence of Prayer and Religious Beliefs on Measures of Life Satisfaction

Presenter(s): Lindsay Ranstrom

Department: Sociology

Advisor: Sue Humphers-Ginther

Abstract: Although the topic seems to be a bit taboo in our present society, there seems to be a documented relationship between religious practices, membership in a church family, and a personally fulfilling religious experience with life satisfaction and health of people even today. Moreover, prayer as a part of this experience serves an important function in the lives of many. In particular, it influences satisfaction and health of these individuals in many different and personal ways. As Ted Mitchell (2000) asserts, research has pointed out that when individuals are recovering from surgery or other health related problems, those who did not draw comfort and strength from religious practices (perhaps prayer and interactions with other believers) were seven times more likely to die within six months of the surgery. It is by these types of empirical findings that suggest that faith and religion play a larger part in human life than is often thought. In my examination of these relationships, I plan to use the GSS (General Social Survey) as my source of data collection. My research will focus on the correlation between prayer and life satisfaction, as this may have implications into bettering the lives of many people around the world. I will incorporate the findings of the survey with present research in this field to make up the base of my examination and following paper and poster presentation. After analyzing and interpreting the data found here and the literature, I hope to be able to understand the relationship and influence prayer has on the greater forces of well being in our society and also why some people are dedicated to these practices while others refuse to engage themselves or simply remain indifferent to the topic and its' potential influence on their life.

48

Title: The Parent-Child Communication Program, Case Study #8

Presenter(s): Geniece Kizima, Sarah Palmer

Department: Speech/Language/Hearing Sciences

Advisor: Louis De Maio

Abstract: The purpose of the study was to evaluate the effectiveness of the Parent-Child Communication Program (PCCP) in training parents as language facilitators. The program was developed by Dr. Louis J. De Maio in 1998 and is currently used at Minnesota State University Moorhead's Speech, Language and Hearing Clinic. The study evaluated the effectiveness of the therapy in reducing the frequency of questions asked by the parent during interaction with their child. Results show the program helped the parent reduce the number of questions asked during communication with the child, resulting in the parent being a responder rather than conversation initiator - thus promoting language development in the child.

49

Title: The Changing Face of St. Francis de Sales

Presenter(s): Megan Wittmier

Department: American Studies

Advisor: Helen Sheumaker

Abstract: We will be presenting the history of the many changes that have occurred over many years in the Catholic church of St. Francis de Sales

50

Title: Phospholipase D Regulates Stress Fiber Formation By Phenylephrine Stimulation in CCL39 cells

Presenter(s): Kit Mitchell, Jessica Johnson, Rachel Sang

Department: Biology

Advisor: Joseph Provost/Mark Wallert

Abstract: Stress fiber formation is an important event in regulating the cell growth and migration of cells. G protein-coupled receptors induce stress fiber formation through a variety of mechanisms. Several studies implicate Gq in the activation of stress fibers however the mechanism is unknown. In endothelial cells, migration requires both ERK and phospholipase D (PLD) activity. We report here that the addition of the specific $\alpha 1$ -adrenergic agonist, phenylephrine (PE) to CCL39 fibroblasts induced stress fiber formation similar to that found with cells treated with lysophosphatidic acid (LPA). PE induced stress fibers were significantly inhibited in cells treated with the MEK inhibitor PD98059, or primary alcohols. To investigate the signaling pathway mediating the adrenergic receptor, we examined the ability of PE to activate a number of potential signaling intermediates. Addition of PE induced a three-fold increase in PLD activity and a large increase in ERK phosphorylation. Moreover, PE activation of ERK was blocked by the addition of 1-butanol but not 2-butanol. Finally, activation of ERK by PE was attenuated when cells expressed a dominant negative RhoA. These data suggest that PE-stimulated stress fiber formation is mediated by ERK activation and that this pathway is likely activated by action of PLD. Additional evidence for the role of $\alpha 1$ -adrenergic receptors in regulating cell growth is shown by assaying wound healing rates in the presence or absence of 1- and 2- butanol. Specifically, evidence has shown that PE stimulation affects the rates of wound healing in scratch assays. Taken together, these results indicate a novel role for PLD in activation of the ERK growth pathway to stimulate early cellular events induced by PE. This work was supported by a MSU Moorhead Faculty Grant, NSF - DUE 0088654 and MRI - DBI 0110537

51

Title: How Do First-Syllable Characteristics Affect Visual Word Recognition of Long Words?

Presenter(s): Emily Hugh

Department: Psychology

Advisor: Christine Malone

Abstract: This study was conducted to see if neighborhood size affected the reaction time of word recognition. Neighborhood similarity is defined as the number of other words that have all but one letter in common with the original word. We hypothesize that larger neighborhoods will facilitate faster word recognition. Words will be presented on a computer screen. Participants will have to identify the word as quickly as possible. Reaction time and accuracy will be analyzed.

52

Title: Phospholipase D Regulates Stress Fiber Formations By Phenylephrine Stimulation in CCL39 cells

Presenter(s): Jessica Johnson, Rachel Sang

Department: Biology

Advisor: Mark Wallert/Joseph Provost

Abstract: Stress fiber formation is an important event in regulating the cell growth and migration of cells. G protein-coupled receptors induce stress fiber formation through a variety of mechanisms. Several studies implicate Gq in the activation of stress fibers however the mechanism is unknown. In endothelial cells, migration requires both ERK and phospholipase D (PLD) activity. We report here that the addition of the specific $\alpha 1$ -adrenergic agonist, phenylephrine (PE) to CCL39 fibroblasts induced stress fiber formation similar to that found with cells treated with lysophosphatidic acid (LPA). PE induced stress fibers were significantly inhibited in cells treated with the MEK inhibitor PD98059, or primary alcohols. To investigate the signaling pathway mediating the adrenergic receptor, we examined the ability of PE to activate a number of potential signaling intermediates. Addition of PE induced a three-fold increase in PLD activity and a large increase in ERK phosphorylation. Moreover, PE activation of ERK was blocked by the addition of 1-butanol but not 2-butanol. Finally, activation of ERK by PE was attenuated when cells expressed a dominant negative RhoA. These data suggest that PE-stimulated stress fiber formation is mediated by ERK activation and that this pathway is likely activated by action of PLD. Additional evidence for the role of $\alpha 1$ -adrenergic receptors in regulating cell growth is shown by assaying wound healing rates in the presence or absence of 1- and 2- butanol. Specifically, evidence has shown that PE stimulation affects the rates of wound healing in scratch assays. Taken together, these results indicate a novel role for PLD in activation of the ERK growth pathway to stimulate early cellular events induced by PE. This work was supported by a MSU Moorhead Faculty Grant, NSF - DUE 0088654 and MRI - DBI 0110537

53

Title: Breathing, How it Works!

Presenter(s): Candace Lembke

Department: Biology

Advisor: Alison Wallace

Abstract: Differences between negative pressure and positive pressure breathing. Mechanisms of getting oxygen into the lungs and then into the blood system.

54

Title: Is Mitochondrial Inheritance Tissue Specific? A New Look at the mtDNA Dogma from a Cell Biology Perspective.

Presenter(s): Streitz Lisa

Department: Biology

Advisor: Ellen Brisch

Abstract: 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 in the mitochondrial genome. Mitochondria are extremely important to study because almost any mutation in mtDNA leaves an organism somewhat debilitated, by causing mitochondrial myopathy. Mitochondria have been thought to be maternally inherited for over twenty years. Results from previous experiments show that a child's mtDNA will be identical to that of the mother. Does this mean that there is no paternally inherited DNA? Perhaps not, however researchers have mainly focused on testing mtDNA in blood samples. To examine if inheritance patterns differ between tissues, Heidi Jo Johnson, Austin McCoy and Jen Risan began planning an experimental approach and protocol development to test our hypothesis. Our hypothesis is that blood and muscle tissue will inherit mitochondria from different parents. The approach I am using to test my hypothesis is to sequence the mtDNA taken from two different strains of mice. Next, I plan to cross the parent mice and sequence the mtDNA of their offspring. I will be sequencing mtDNA from the blood as well as from the muscle tissue to see if mtDNA inheritance is, indeed, tissue-specific. Currently, I have completed mitochondrial isolation from different tissues and mtDNA extraction. Verifying the specificity of mitochondria is an important step for figuring out what cellular mechanisms are required to direct the mitochondria into different tissues. This may open a whole new way of looking at mitochondrial inheritance and ultimately show us how this system is regulated.

55

Title: A Glimpse Into the World of a Systems Analyst

Presenter(s): William Gabel, Jr., Alycia Plattner

Department: CSIS

Advisor: Daniel Brekke

Abstract: This presentation will demonstrate the skills that we learned in the Systems Analysis and Database Design courses that are offered in the Computer Science and Information Systems Department. Our focus will be on the data modeling aspect of the System Development Life Cycle.

56

Title: An Initial Biochemical Analysis of Autism

Presenter(s): Jill Skolte, Moses Wananu

Department: Biology

Advisor: Joseph Provost

Abstract: Autism is a pervasive developmental disorder with a collection of behavioral symptoms including dysfunction in social interaction and communication in affected children. Autism is associated with sensory disturbances, obsessive-compulsive-like behavior, lack of bonding to caregivers and motor disturbances. We have obtained lymphocyte cells from children with and without autism and are going to test them for several proteins which may be altered in children with autism. While there is little understanding of the biochemical basis for the cause of autism, one phenomenon of this disorder is the formation and development of neural synapses. A significant percentage of people with autism display chromosomal alterations in chromosomes 9 or 15. The genes associated with these abnormalities code for two proteins called hamartin and tubarin. These proteins are very closely related and when functioning normally, regulate the small G-protein RhoA. RhoA is an important signaling molecule which regulates cytoskeletal structure, important for cell growth and development. RhoA also activates the sodium-hydrogen exchanger (NHE), and NHE may act as an anchor for cytoskeletal proteins. Thus alteration in either RhoA or NHE would significantly impact the development of neural cells as they mature. We intend to test for RhoA activation levels in our cells and for NHE activity. With this research we hope to gain an understanding of one potential cause of autism.

57

Title: The Correlation of the Proportion of Errors between Staggered Spondaic Word and SCAN-C tests

Presenter(s): Marin Almer, Rose Cotton

Department: SLHS

Advisor: Louis De Maio

Abstract: This presentation studies the relationship between two auditory processing disorder tests. A random assessment of twelve children from the Minnesota State University Moorhead-Auditory Processing Disorders clinic was done in which we compared the results of the SSW and SCAN tests to see if they could be used interchangeably in screening and diagnosing Auditory Processing Disorder.

58

Title: Effect of Environmental Stresses on Corn Root Respiration

Presenter(s): Julie Knutson, Jodi Hendrickson, Carrie Leopold

Department: Biology

Advisor: Dr. Chris Chastain

Abstract: Plant roots are subject to a wide array of environmental stresses such as drought, salinity, flooding, and extremes of temperature. In this study, we sought to determine which of the above environmental stresses are the most acute and which are the most benign. We selected root tissue respiration rate as a comparative measure of how stress can effect the health and function of the root as a whole, since respiration is a processes directly tied to the central process of energy (ATP) production in the corn root cells. Presented will be comparative measurements of root respiration rates on root tissue obtained from 3 day old corn root seedlings that have been subjected to simulated drought, salinity, flooding, and high/low temperature stress.

59

Title: Can corn root respiration be stimulated by pre-treating corn roots in iron fertilizer?

Presenter(s): Tom Larson, Rich Teske

Department: Biology

Advisor: Chris Chastain

Abstract: Respiration in corn roots is due to the uptake of O₂ by cellular mitochondria. This in turn leads to synthesis of ATP by the mitochondria that is required for the physiological functions of the root. This study was conducted to see if supplementing corn roots with large doses of iron fertilizer can stimulate the rate of respiration via increasing the iron containing enzymes of the mitochondria. Respiration measurements will be performed on root tissue obtained from 3-day old germinated corn seedlings using an oxygen electrode. Data from these measurements, along with other indirect biochemical measurements of root mitochondrial function, will be presented.

60

Title: Do Elevated Levels of Potassium Ion in the External Medium of Corn Roots Stimulate Respiration and Therefore ATP Synthesis?

Presenter(s): Justin Noehre, Michael Fohl, Jesse Cox

Department: Biology

Advisor: Chris Chastain

Abstract: Potassium (K⁺) is a major plant mineral nutrient that plants extract from the soil using an ATP-dependent cell membrane-mediated process. We sought to test the concept that as roots are exposed to higher amounts of K⁺ in the soil, they also should need to produce increased amounts of ATP. This in turn should necessitate a higher respiration activity in order for the mitochondria to meet the demand for more ATP synthesis. In order to investigate this proposed link between high K⁺ and respiration, we utilized root tissue from three day old corn seedlings germinated and grown in the presence of high or low amounts of KCl. Respiration rates were measured using an O₂ electrode. Other assessments of the putative effects of high levels of K⁺ on corn root respiration will include the use of respiratory inhibitors and enzyme analysis.

61

Title: Short-Term Effects of Removing Energy (sucrose) Supply to Growing Corn Roots.

Presenter(s): Tessa Jetvig, Kate Pfeifer

Department: Biology

Advisor: Chris Chastain

Abstract: Roots must obtain their food (sucrose) from the photosynthetic portions of the plant leaves via the phloem. In certain cases, such as short term water stress or phloem disease, roots can be cut off from this energy source and essentially have to scale back on energy requiring physiological functions such as extraction of mineral nutrients from the soil. In order to investigate the rapidity on how terminating energy (sucrose) supply to growing root can effect production of cellular energy in the root, we measured respiration rates in 3 day old corn seedling roots that had been excised from the kernel they grow from and receive sucrose from until the leaf emerges. The data gained from this study will be used to predict the interdependence of sucrose supply to the root and the ability of the root to produce its own cellular energy (ATP) for fueling energetic physiological processes such as extraction of minerals from the soil.

62

Title: Effect of Aluminum Ion on Corn Root Respiration

Presenter(s): Jon Frykman, Amanda Hanson

Department: Biology

Advisor: Chris Chastain

Abstract: Various metal ions found in soils are actually toxic to plant growth. One such metal ion is aluminum, which has a striking inhibitory effect on growth of roots. In this study, we examined the relationship between root cell respiration and aluminum toxicity in corn roots. As the central energy producing process in the cell, we expect (mitochondrial) respiration to be a site of aluminum poisoning that may explain inhibition of root growth. Data will be presented showing respiration rates of growing corn roots treated with aluminum ions (Al³⁺) compared to untreated controls.

63

Title: Survey of Wild Turkey (*Meleagris gallopavo*) Distribution in Cass and Clay Counties

Presenter(s): Natasha Gruber, Katie Geray, Tracy Mastel

Department: Biology

Advisor: Dr. Donna Bruns-Stockrahm

Abstract: The Minnesota Department of Natural Resources (DNR) is currently working on a wild turkey (*Meleagris gallopavo*) reintroduction program in northwestern Minnesota. To determine the current populations of wild turkeys in Cass County, North Dakota, and Clay County, Minnesota, we distributed surveys along the Red River in the Georgetown, Kragens, Oakport, Kurtz, and Holy Cross Townships of Clay County, and along the Sheyenne River in the Harwood and Reed Townships of Cass County. Information about the survey was also placed in the Barnesville Recorder and in The Fargo Forum, and those interested contacted us. Surveys were also filled out at the annual meeting of the local chapter of the National Wild Turkey Federation. We received a total of 64 usable surveys and 11 usable emails. A total of 537 birds were reported sighted, with 59 identified as toms (male) and 94 identified as hens (female). However, because we have no way of knowing if some of the turkeys were sighted more than once, the actual number reported is probably inflated. Through this survey, we have discovered a thriving population of wild turkeys in Cass and Clay Counties, and a hunting season may be opened in the area. In the future, we plan to continue surveying residents as well as using GIS techniques to predict if human interactions with wild turkeys are increasing.

64

Title: The Relationship of Root Cell Membranes "Leakiness" on Root Tissue Respiration Rate

Presenter(s): Thomas Colquhoun

Department: Biology

Advisor: Chris Chastain

Abstract: The relationship of root cell membranes "leakiness" on root tissue respiration rate Plant roots are subject to many agents in the soil that can cause transient holes or leaks in the outer cell membranes. Such agents include pathogenic fungi and extremes of cold and heat. In response, the plant must respond by repairing damaged membranes. We propose this repair response must be accompanied by an increase in energy (ATP) production by the root cell mitochondria. To test this hypothesis, we examined how respiration rate in corn roots responded to certain detergents that effectively "punch holes" in the membrane. These results will be displayed along with other enzyme based data that will illustrate how the central cell process of respiration is involved in maintaining cell membrane integrity.

65

Title: A Look at the Changing Music Industry from an Economic Perspective

Presenter(s): Chris Liberda

Department: Economics

Advisor: Oscar Flores

Abstract: The introduction of digital music and peer-to-peer file sharing has had an enormous impact on the music industry. In this presentation I will look at how changes in technology have changed the form of good that music has taken. I will incorporate economic tools and analysis to quantify the effects that certain technological changes have had on music and the implications that arise.

66

Title: Cohabitation and Divorce

Presenter(s): Jessica Roshau

Department: Sociology

Advisor: Dr. Sue Humphers-Ginther

Abstract: To examine the relationship between cohabitation and divorce. Focusing on various living arrangements and how they effect relationships later in life. While looking at the current divorce rate in relation to the struggles of today's family.

67

Title: The Role of PKC in RhoA Activation and Stress Fiber Formation

Presenter(s): Alison Metcalf, Tabitha Burnside, Matthew Duval

Department: Biology

Advisor: Joseph Provost

Abstract: Stress fiber formation in Chinese hamster lung fibroblasts (CCL39) requires activation of both RhoA and the sodium-hydrogen exchanger (NHE). We have recently demonstrated that Extracellular-Signal Regulated Kinase (ERK) and NHE are activated in response to the α 1-adrenergic agonist phenylephrine (PE). Our initial data also indicates that PE stimulates the translocation of RhoA to the plasma membrane, while traditional α 1-adrenergic stimulation acts through Protein Kinase C (PKC). In this study we plan to investigate the role of PKC in RhoA and stress fiber activation. We will test the effects of three PKC inhibitors: bisindolylmaleimidine I (BIM), Go6976, and Ro-31-8220. BIM is a derivative of the general PKC inhibitor staurosporine that acts as a competitive inhibitor for the ATP-binding site of PKC. It is highly specific for PKCa, bI, bII, g, d, and e isozymes. Go6976 is an indolocarbazole that specifically inhibits PKCa by blocking Ca^{2+} binding. Finally, Ro-31-8220 is a staurosporine analogue that inhibits active membrane-bound PKC 12.5 times better than cytosolic PKC. In all of our experiments, Phorbol-12-myristate-13-acetate (PMA) is our positive control. PMA directly activates PKC by mimicking diacylglycerol thereby bypassing a PE requirement. To measure the ability of PE to activate RhoA, EGFP-tagged RhoA is used to observe translocation. Unstimulated control cells display RhoA dispersed throughout the cytoplasm, while PMA stimulated cells show RhoA predominantly associated with the plasma membrane. To measure the role of PKC in RhoA stimulation, PE treatment will be done in the presence and the absence of PKC inhibitors. Once RhoA translocation is characterized, we will then investigate the role of PKC in stress fiber formation. We propose that PKC is required for the activation of RhoA and ultimately the formation of stress fibers.

68

Title: The Malady of Fibromyalgia

Presenter(s): Tanya Knudson

Department: Physical Education-Athletic Training

Advisor: Dawn Hammerschmidt

Abstract: An introduction to the facts on fibromyalgia, and discussion on the controversies of the disease.

69

Title: Genetic Diversity Influencing Survival Among Declining Populations of Black-tailed Prairie Dogs.

Presenter(s): Tracy Mastel, Alisha Pagel, Lee Gertsen

Department: Biology

Advisor: Michelle Malott

Abstract: The populations of black-tailed prairie dogs are steadily declining due to a variety of human-impact factors such as habitat alteration, recreational shooting, and agricultural control. A study on genetic diversity could provide valuable insight on survival of black-tailed prairie dogs in future generations. We are using PCR to examine micro-satellites in order to compare the DNA of black-tailed prairie dogs between and among prairie dog towns from Theodore Roosevelt National Park. Micro-satellites are areas of the genome that are highly variable between individuals and can be used as markers of genetic variability in populations. We are presenting our results and conclusions thus far on this topic. In our continuation of research with black-tailed prairie dog DNA we hope to determine whether or not genetic invariability could potentially cause a population decline to the point of extinction.

70

Title: Effects of Oxidative Stress on *Saccharomyces cerevisiae* FKH1 Transcription Factor Knockout

Presenter(s): Heidi Johnson, Faith Dahl, Dan Feir

Department: Biology

Advisor: Michelle Malott

Abstract: Forkhead proteins are known to play a role in regulating early development, cell differentiation, and cell cycle progression in many different eukaryotic cells. FOXO3a is a protein from the forkhead FOXO family of human transcription factors. Transcription factors play an important role in regulating cell cycle, cell death, and oxidative stress. They bind DNA through a winged-helix structure. Once translocated into the nucleus, they are able to induce the transcription of genes necessary for these specific functions in the cell. *Saccharomyces cerevisiae* is a model organism commonly used to study many of these fundamental processes. FKH1 and FKH2 are yeast forkhead transcription factor proteins in *S. cerevisiae* yeast cells. Although there have been limited studies on FKH1 and FKH2, the conserved DNA binding domain among transcription factors suggests that the yeast transcription factors will behave in a similar fashion to that of FOXO3a. Therefore, FKH1 and FKH2 could be used as a means to study the role of forkhead transcription factors in cellular response to oxidative stress. Bioinformatic analysis will be performed to obtain the conservation between these three forkhead proteins. Preliminary data has suggested that oxidative stressors, such as hydrogen peroxide, cause DNA damage to cells. When the cell is exposed to hydrogen peroxide, FOXO3a initially inhibits the process of apoptosis, possibly allowing the cell to repair its damaged DNA. We hypothesize that FKH1 and FKH2 will behave in a similar manner. We will focus on the FKH1 protein while performing experiments with wild type strains along with mutated strains lacking the FKH1 gene.

71

Title: Deadly Diseases Among Us

Presenter(s): Adriane Cooper, Mariya Rzaszutak, Virginia McCamant

Department: Biology

Advisor: Alison Wallace

Abstract: Infectious diseases continue to be a major cause of human suffering and death. This event is a high school level group activity which will allow students to compare and contrast emerging and re-emerging infectious diseases, how they are transmitted, and other common characteristics of each disease.

72

Title: Relating the Biological, Ecological and Societal Values in Order to Bring Attention to the Overall Importance of Virgin Prairie Land to Our Region and Nation as a Whole.

Presenter(s): Holly Kleffer

Department: Biology

Advisor: Chris Chastain

Abstract: My goal is to illustrate to a general audience the importance of our lands heritage, Virgin Prairie Land. I plan to do so by stating the interrelationships between the biological ecological and societal viewpoints. Together these three topics come together to further prove that this rare and beautiful resource should be preserved and protected by both the law and the general public. With the knowledge of such importance of this vast resource I hope to instill both hope and action. We can overcome the blatant disregard for this precious gem and begin to appreciate our regions gift, Virgin Prairie Land.

73

Title: Green Fluorescent Protein Purification and Polyclonal Antibody Production in Rabbits

Presenter(s): Derick Burgad, Alicia Levorsen, Amanda Lipp

Department: Biology/Chemistry

Advisor: Dr. Joseph Provost

Abstract: The gene that encodes the green fluorescent protein (GFP) comes from *Aequorea victoria*. This gene was transformed and expressed in *Escherichia coli*. A lysate solution of the GFP expressing *E. coli* was then prepared for purification and injected subcutaneously into rabbits for polyclonal antibody production. The purpose of this experiment was to produce rabbit specific polyclonal antibodies toward a highly purified preparation of the antigen GFP. The purification process involved dialysis to reduce the salt concentration and the use of two different chromatography columns. The first an IEC column containing DEAE Sephacel, to fractionate the sample based on charge and the second step was a SEC column using Sephadex S-100 beads to fractionate the proteins by size. Following the purification through each column, the fractions were collected and analyzed by the Bradford method to determine protein concentration. The final protein sample was then concentrated using a Centriprep YM-10 centrifugal filter unit. Analysis was performed on the final sample to determine purity by an SDS-PAGE gel. The final sample was then emulsified using complete Freund's adjuvant and a boost with incomplete Freund's adjuvant. Four weeks post injection sera was isolated. The titer of the sera was tested by both Western blot and an ELISA.

74

Title: The Rise of Korean Nationalism Leading Up to the Samil

Presenter(s): Rebecca Vave

Department: History

Advisor: Henry Chan

Abstract: On March 1, 1919 the people of Korea gathered in Pagoda Park in Seoul, as well as in various other places across Korea, in a moving demonstration of their longing for independence. It has been said that Korean nationalism was born in that movement, now called the Samil. In this paper, I trace the rise of Korean nationalism leading up to the Samil. I contend that the nationalistic fervor of the Samil Movement was not born in a day. It was painfully grown from the seeds of the legacies of the past, the disparaging Yi Dynasty, and foreigner encounters, particularly the oppressive Japanese colonization.

75

Title: Anti-Germanism in Clay County

Presenter(s): Amber Boyd, Rachel Andersen

Department: American Studies

Advisor: Helen Sheumaker

Abstract: Germans are and have been one of the largest ethnic groups in Clay County. However, the German culture, people, and language have not always been accepted and desired additions to the community. World War I created an anti-German movement that spread across the nation and this area of the country was no exception. This is a research project for the American Studies Senior Seminar (AMST419) and focuses on the local attitude changes towards German people and things during the WWI era.

76

Title: The Determinants of Homeownership in the United States of America

Presenter(s): Heidi Petersen

Department: Economics

Advisor: Dr. Oscar Flores-Ibarra

Abstract: This presentation uses regression analysis to determine the different factors that affect the percentage of citizens who become homeowners in the United States of America. It is a time series analysis with data from 1971 to 2001.

77

Title: Designing Physical Anthropology Labs: An Exercise in Active Learning

Presenter(s): Jennifer Bengtson

Department: Anthropology and Earth Science

Advisor: Rinita Dalan

Abstract: The Department of Anthropology and Earth Science has recently restructured its introductory physical anthropology course in order to provide a more effective learning environment for students. This has been accomplished through the use of several small interactive lab sessions, complemented by an expanded and improved collection of primate and hominid fossil casts purchased through a grant from the Center for Teaching and Learning. These activities have improved learning in subjects like primate taxonomy and early hominid evolution and have provided an opportunity for students to work more closely with their instructor and classmates. As a lab assistant, I have been active in designing the labs and working with students during the sessions. The experience has expanded my knowledge of the subject, improved my ability to work with students, and reinforced my desire to continue my education in this field. I look forward to conducting research as well as working in an academic setting in the future, and I believe this experience will prove invaluable to my accomplishment of those goals.

78

Title: Language Disorders: The Elements and Instituting a Classroom Model.

Presenter(s): Lindsay Gilleshammer, Angie Villarreal

Department: Speech/Language/Hearing Sciences

Advisor: Louis De Maio

Abstract: This presentation will focus on identification (assessment), intervention, and facilitation of classroom models. We will present how the speech language pathologist along with the teacher come up with individual input that essentially affects the delivery of quality services for a child. We will also focus on instituting a classroom model.

79

Title: Racism and MSUM

Presenter(s): Pablo Guajardo

Department: American Multicultural Studies and the Humanities

Advisor: Phyllis Phyllis May-Machunda

Abstract: For any institution there is an inherent resistance to change. I will demonstrate what I learned about the effect racism has had on the student body, the nature of the University and efforts made to change that nature over the course of several decades. This will involve interviews with students and faculty past and present, surveys of the student body and several of the documents dealing with this issue back.

80

Title: Comparison of Growth Rates and Survival of Painted Turtles (*Chrysemys picta*) in Clay County, Minnesota

Presenter(s): Joanna M. Schmit, Natasha W. Gruber

Department: Biology

Advisor: Donna M. Bruns and Jerome Stockrahm

Abstract: Painted turtles (*Chrysemys picta*) were live-trapped during the summer and early fall of 2001, 2002, and 2003 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. For 2002 only, 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. In 2003, a total of 190 turtles were trapped where 42 were new animals (20 males, 18 females, 4 juveniles) and 147 (107 males, 35 females, 1 juvenile, plus 4 females observed away from the sloughs) were recaptured turtles. In spite of intense trapping effort, trapping success between 2001, 2002, and 2003 varied greatly. Possible reasons for these differences, including mortality factors will be investigated. Growth rates and survival rates will be discussed.

81

Title: Nocturnal Behavioral Response to Chemical Alarm Cues by Tetra Fish

Presenter(s): Shantell Drew

Department: Biology

Advisor: Brian Wisenden

Abstract: Fish detect the presence of an active predator by chemical cues that are released when a predator attacks and injures its prey. Prey species can also use these alarm cues to associate the smell of the predator with danger, and later recognize the predator's presence by its smell even before it attacks. Both the response to chemical alarm cues, and learned recognition of predator odor have obvious survival benefits. Study of alarm responses to alarm cues have been conducted exclusively during daylight hours. Many predators are nocturnal and feed at night. In this study, we tested if tetra fish (*Pristella*) show a behavioral response to chemical alarm cues at night. Using room light timers, we shifted the day/night cycle of tetras so that we could study nocturnal behavior during the day. We gave the fish the odor of another fish species, a cichlid, and either water or tetra alarm cues. We recorded activity and vertical distribution - two measures of antipredator behavior. This tested if tetras give an overt behavioral response to alarm cues at night, and if they already recognize cichlid odor as an indicator of danger. We changed the water and retested the same fish several days later, this time with only cichlid cues. This tested for learned recognition of cichlid odor as dangerous. We found no evidence of an overt behavioral response to alarm cues at night, nor any evidence of recognition learning during daylight conditions. This result suggests that the alarm reaction and recognition learning may be conditional upon the presence of light. Attentiveness to chemosensory indicators of predation risk may occur only when awake.

82

Title: Parent-Child-Communication-Program Case Study #10

Presenter(s): Ludmi Jinadasa, Roshani Goonewardena

Department: Speech-Language-Hearing Science Department

Advisor: Dr. Louis De Maio

Abstract: The study we conducted was one of twelve studies that analyzed the effects of the Parent-Child Communication Program on a mother with a child who has language delay. 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 development. In this study we analyzed the mother's use of Initiations, Responses and questions before and after PCCP training.

83

Title: Seeing the Unseen with Geophysical Methods

Presenter(s): Amanda McCracken, Melissa Beer

Department: Anthropology/Earth Science

Advisor: Rinita Dalan

Abstract: Ongoing research has been directed toward uncovering secrets that the Hopewell Culture (200 BC-AD 500) of the Midwest have left behind. The Hopewell Culture created hundreds of mounds and earthworks throughout the Mississippi River valley, but our area of interest is the earthworks located in Ross County Ohio at the Hopeton archaeological site. Due to site degradation, traditional archaeological methods are not sufficient to answer questions about where an earthwork was and how it was built. By means of geophysical methods, we are able to "see" what cannot be seen with the naked eye on the surface or in archaeological excavations. This presentation will focus on the geophysical methods used as well as the answers that have been produced from our research.

84

Title: Sri Lanka: Facts about the Culture, Life style, Education, Civil War and Terrorism

Presenter(s): Ludmi Jinadasa, Roshani Goonewardena, Shanaka Herath, Pushpakantha Rajapakse, Amal Alles, Pat Jinadasa, Samadhi Wijesighe

Department: Office of International Programs

Advisor: Kim Gillette

Abstract: Sri Lanka is a country in Southern Asia. It is an Island in the Indian Ocean, South of India. Sri Lanka is a county slightly larger than West Virginia but the population exceeds 19 Million. We have 17 Sri Lankan students as well as 3 Faculty members currently at MSUM. This will be a great experience to know about SRI LANKA.

85

Title: Parent-Child Communication Program: Case Study #1

Presenter(s): Angela Haynes, Amy Ruzicka

Department: Speech Language Hearing Sciences

Advisor: Louis De Maio

Abstract: This presentation is on a case study on the Parent-Child Communication Program, developed by Dr. Louis De Maio. The program teaches parents how to talk with their children to facilitate their children's communication. We measured the number of questions the mother asked her child before training and the number she asked after training and compared the two amounts to see if she decreased her amount of questions asked. The results show that she significantly decreased the amount of questions asked to her child.

86

Title: Modeling of Upper-Level Degrees Earned Among Different Races

Presenter(s): Ann Johnson, Erin Richgels, Shamus Funk

Department: Mathematics

Advisor: Ellen Hill

Abstract: A comparison of the number of upper-level degrees earned per year among different races. Analysis of different degrees earned will be made regarding to degrees vs. time, and the number of degrees earned by different races will be compared against each other. Statistical analysis may be provided as well.

87

Title: Clay County Italian Immigration: Italian Influence on Local Beauty Industry

Presenter(s): Beth Splonskowski, Kristi Hilton

Department: American Studies

Advisor: Helen Sheumaker

Abstract: Clay county has a variety of different ethnic groups that have located in this region. This project will focus on the Italian immigration into the area, particularly Dilworth. It will also take a look at the impact that the Italian's had on the beauty industry. This project is for the multicultural web museum and will outline the family history and the timeline of their success in the local beauty industry.

88

Title: Parent-Child Communication Program Case Study #2

Presenter(s): Heidi Kopel, Tracey Rufsvold

Department: SLHS

Advisor: Louis DeMaio

Abstract: This case study analyzed the effect of the Parent-Child Communication Program (PCCP) on a mother and child pair in which the child was diagnosed with a language delay. PCCP promotes child communication and language and was developed by Dr. Louis DeMaio. We analyzed the mother's use of questions before and after the training program.

89

Title: The Recent Changes in the Immigration and Asylum System of the United Kingdom and Their Detrimental Affects

Presenter(s): Aaron Shreve

Department: Political Science

Advisor: Andrew Conteh

Abstract: This presentation looks at the recent changes in immigration and asylum policy in the United Kingdom. Most of the changes have come about as a result of the Nationality, Immigration, and Asylum Act. I will discuss the reasons for change in policy, specific changes in policy, and the detrimental affects of the policy changes.

90

Title: Predictions in Daily Lives - Can They Be Justified?

Presenter(s): Virendra Tripathi

Department: Philosophy

Advisor: Ted Gracyk

Abstract: From a simple task of making the morning cup of coffee to driving to work, we all make innumerable predictions in our lives. More often than not, our predictions are right. But, rightness of a prediction need not justify the prediction. In a philosophical analysis, the groundings for predictions come apart. This presentation discusses the problems for predictions issuing from such a philosophical analysis and the choice of the route it takes.

91

Title: Developmental and Behavioral Ontogeny of Antipredator Behavior in Cichlid Larvae

Presenter(s): Bree L. Hamann, Anusha Mishra

Department: Biology

Advisor: Wisenden Brian & Ellen Brisch

Abstract: Cichlids are unusual among fishes in having prolonged care of their eggs and developing young for up to 6 weeks. This is an enormous investment because of the energy spent defending the young against predators, lost foraging opportunities, and lost opportunities to reproduce again until the brood of young reaches independence. The duration of brood care is determined by the antipredator competence of the young. Here, we use video playback analysis to measure the speed and distance of the startle response of convict cichlid, *Archocentrus nigrofasciatus*, young at increments of development. The degree of calcification is measured by developmental staining procedures, which produces a red coloration in bones and a blue coloration in cartilage. We correlate the capacity for behavioral avoidance of predator attack with the degree of calcification of the skeleton. We show that skeletal calcification determines antipredator competence in this species, and that, in turn, determines patterns of parental care. These data have implications for the evolution of egg size in cichlid fishes.

92

Title: Early Fraternal Organizations of Clay County

Presenter(s): James Sander

Department: American Studies

Advisor: Helen Sheumaker

Abstract: The projects goal is to analysis the impact of Early Civic Fraternities in Clay County. The project with examine how Clay county fit in to the national scheme of fraternal growth and how the county differed. The project will also look into the type of citizens that belonged to civic fraternities.

93

Title: Web Research: Advertising, Public Relations-Marketing, News, Television, and Radio Online

Presenter(s): Sarah Jane Smith, Jared Medhus, Tiffany Deutsch

Department: Mass Communications

Advisor: Regene Radniecki

Abstract: The year 2001 marked a pivotal milestone for the Internet. In that year over 50 million people in the U.S. were connected to the Internet from home. The Net had come of age, reaching critical mass as a communication medium in record time. Our study takes a look at how the mass media use the Internet and the World Wide Web. Specifically, we will focus on how traditional mass media — news outlets, the television and radio industries, and media professionals in the advertising, public relations, and marketing fields adopted the new medium and how they are using it to reach current and new audiences.

94

Title: How do MAPK/ERK Kinases Regulate Microtubule Spindle Formation?

Presenter(s): Sumeda Nandadasa, Ava-Gaye Simms, Akila Weerasekara

Department: Biology

Advisor: Ellen Brisch

Abstract: The mitotic spindle formation is the key process that allows the segregation of the newly replicated chromosomes into two poles. Microtubules (MT) are the key components of which the mitotic spindle is formed. Understanding Microtubule assembly is important to understanding spindle fiber regulation. In our study we are trying to understand how microtubule assembly is regulated, what key proteins are involved, what gives the signal for microtubule sub-particles to assemble and disassemble? In earlier experiments we have found that there are two key proteins involved and they are sized 44 and 48KD. By antibody tests we predict that these proteins are in the Mitogen Activated Protein Kinase (MAPK) family and Extracellular Receptor Kinase (ERK) family by using specific antibodies. By using a collaboration of protein assay techniques together with western blot techniques we plan to further analyze these two proteins and to identify them using protein micro sequencing.

95

Title: Investigating DNA Replication Origins in *C. elegans*.

Presenter(s): Jessica Heck, Diane Nelson

Department: Biology

Advisor: Michelle Malott

Abstract: In order to ensure that only one complete copy of the entire genome is accurately replicated before mitosis, DNA replication is initiated at multiple locations in the genome called replication origins. Replication origins are of great importance to the regulation of DNA replication and make it impressively efficient. These initiation sites must be uniformly distributed throughout the genome in order to replicate the entire genome within a limited time period. The human c-myc sequence may be involved in the regulation of replication initiation. The human c-myc gene is a proto-oncogene that has been extensively characterized with regard to promoter regulation and chromosomal structure. DNA replication has been demonstrated to initiate within a 2.4 kb region upstream of the c-myc gene in human cells growing in culture. In addition, these sequences, when put into a plasmid and transected into human cells, are able to direct the replication of the plasmid once per cell cycle. The ability of these sequences of DNA to initiate the replication of a larger piece of DNA, such as a plasmid independently of a chromosome, is referred to as autonomously replicating ability. The c-myc sequences allow plasmids to replicate independently of the chromosome, and are thus said to be autonomously replicating sequences (ARS). In order to more fully understand replication initiation in metazoan cells, we propose to examine the c-myc sequences that act as replication origins in the model organism *C. elegans*, a small nematode. *C. elegans* are an ideal organism for this type of study because their entire genome is sequenced and has been used extensively to study molecular processes and genetic activities. We intend to work to develop a method to study the initiation of DNA replication within a 2.4 kb fragment of the human c-myc gene using *C. elegans* as a model organism.

96

Title: Phenylephrine Activates Na⁺-H⁺ Exchangers via Bifurcating Pathways Involving RhoA and ERK as Downstream Effects of Different Protein Kinase C Isoforms

Presenter(s): Dave S. Ronderos, Anusha Mishra

Department: Biology

Advisor: Mark Wallert & Joseph J. Provost

Abstract: In Chinese hamster lung fibroblasts (CCL39), Phenylephrine (PE) activates both ERK and the Na⁺-H⁺ exchanger (NHE) to regulate stress fiber formation. PE activation of α1-adrenergic receptors activates conventional isoforms of protein kinase C (PKC). Previous research from our laboratory indicates that PE addition leads to activation of RhoA in CCL39 cells. Additionally, general PKC inhibitors such as staurosporine and BIM have been shown to block both RhoA and ERK activity in cells treated with PE. Multiple PKC isoforms are differentially regulated by a variety of cell membrane receptors to control diverse cellular functions. The focus of this study was to determine which PKC isoform(s) are involved in the PE activation of RhoA and ERK. Using enhanced green fluorescent protein tagged-PKC isoforms, we investigated the ability of PE to stimulate PKC translocation using the conventional PKC isoforms α, β1, β2 and γ. Our experiments show that PE activates multiple PKC isoforms. This finding allows for the possibility that distinct PKC isoforms are responsible for the independent activation of ERK and RhoA. Dominant/negative PKC constructs and specific PKC inhibitors are also used to examine the potential role for different PKC isoforms in the regulation of the RhoA-ROCK pathway and the ERK pathway. Our research has also shown that activation of ERK, RhoA and NHE are all required for stress fiber formation by PE in CCL39 cells. Defining a role for multiple PKC isoforms in the regulation of stress fiber formation would dramatically improve our understanding of this process.

97

Title: Exploring the Roles of Nurse Practitioner in Rural Health Care

Presenter(s): Jessica Kleindl

Department: Nursing

Advisor: Donna Heald

Abstract: A look at the roles and importance of nurse practitioners in the rural health setting. How they improve care and benefit local hospitals, as well as, a look at obstacles they face.

98

Title: Advanced Optical Imaging-Experiences at looking through the world with different lenses (objectives).

Presenter(s): Austin McCoy

Department: Biology

Advisor: Ellen Brisch

Abstract: This talk will be a personal statement on my experiences helping to set up an advanced optical imaging set up in the biology department. I have learned many imaging techniques and Simple PCI software abilities. I also helped teach others how to use the microscopy set up and software. I will highlight the problems solving strategies I developed when working with this new technology.

99

Title: The United States Beer Industry

Presenter(s): Katie Kapsner

Department: Economics

Advisor: Oscar Flores

Abstract: This presentation discusses the United States Beer Industry. There will be an overview of the beer industry over the years, and a close look at the industry today. It primarily focuses on growth in exports and imports.

100

Title: Constitutionality of the USA PATRIOT ACT

Presenter(s): Nicole Elkin Elkin

Department: Political Science

Advisor: Andrew Conteh

Abstract: Overview of the USA PATRIOT ACT, as well as views of its constitutionality from sources including judges, senators, and professors. Also how this Act is seen from international organizations and other nation states.

101

Title: The Car Problem; Whether to Buy or Lease.

Presenter(s): Christian Bichler, Rachel Wasche, Binod Shrestha, Jayne Linstad

Department: Mathematics

Advisor: Ellen Hill

Abstract: Using dynamical systems to aid in the decision of buying or leasing a car. The benefits and drawbacks of each decision will be presented in the project. Also, the costs involved in each decision will be evaluated.

102

Title: Target: Upscale Discounting and Power Relationships

Presenter(s): Adam Sandbek

Department: Speech Communication

Advisor: Tim Borchers

Abstract: Research based paper discussing the implications of Target as an upscale discounter. A rhetorical criticism is conducted using Marxist principles with an attempt to better understand how Target's practices influence power relationships.

103

Title: Fraud in the United Way

Presenter(s): Kristin Bentz

Department: Accounting

Advisor: James Hansen

Abstract: I'll be talking about the fraud that occurred approximately two years ago in the United Way Foundation.

104

Title: Can Some Predators Avoid Being Chemically Labeled by Their Prey?

Presenter(s): Jeni Donner, Jodi Hendrickson, Courtney Rud

Department: Biology

Advisor: Brian Wisenden

Abstract: We know from previous studies that minnows can detect the diet of predators by chemical alarm cues in minnow skin that survive the digestive system of the predator. This chemical labeling should put pressure on the predators to mask or breakdown these signaling molecules to avoid alerting the prey of their presence and improving further success of the predator. We are testing two predators, the northern pike and the largemouth bass. Pike are known to be chemically leaky in that the prey can detect alarm substance of ingested prey; however bass have never been tested. Evolutionarily, bass are much more advanced than pike. But are bass as chemically leaky as pike, or do bass have a mechanism for blocking the effect of chemical labeling by minnow prey? We tested this idea on zebra danios in the laboratory by injecting into their tanks the alarm substance made up of the digestive wastes of the pike and bass on a diet of zebra danios or swordtails (a non-minnow species). AS controls, we used blank water, and undigested skin extracts of zebra danios and swordtails. We measured activity and vertical distribution, which commonly change during antipredator behavior. If the zebra danios respond to the bass on a zebra danio diet then we can conclude that bass give off a chemical label that can be detected by the prey. If the danios do not have a response to Bass on a danio diet, then we can conclude that they can block chemical labeling.

105

Title: Stars and Stuff: an Introduction to Astrophysics

Presenter(s): Eric Haverberg

Department: Physics

Advisor: Alison Wallace

Abstract: An introduction to the fundamentals of Astrophysics. Topics to include gravity, light and stellar evolution.

106

Title: Vetoing the Engenderment of the Frozen Human Embryo: A Feminist Argument for the Regulation of Reproductive Technologies and the Abolition of Forced Motherhood

Presenter(s): Amanda Easton

Department: Women's Studies

Advisor: Tracy Scholl

Abstract: This presentation will represent a feminist argument for the regulation of reproductive technologies and the abolition of forced motherhood.

107

Title: A Test of the Anti-Pathogen Hypothesis for the Function of Perciform Club Cells

Presenter(s): Shireen Alemadi

Department: Biology

Advisor: Brian Wisenden

Abstract: Minnows and other species in the group called "Ostariophysi" possess specialized club cells in their skin that release an alarm chemical when the minnow is injured in an attack. Members of the evolutionary advanced perch family (non-Ostariophysans) possess similar cells that arose independently from the minnow line of fish evolution. These cells in both groups present a problem to evolutionary biologists because it is not clear how individuals that invest in these cells benefit from the costly investment in these cells. Other individuals benefits from the alarm signal when they die, but why do these fishes make the cells in the first place? In addition to antipredator responses, some researchers speculate that these cells may play a roll as an antipathogenic agent (against skin parasites), or in protecting the fish from the adverse effects ultraviolet (UV) radiation. Both parasitism and UV exposure increases the rate of healing of damaged tissue in exposed locations. We tested for the effect of skin parasitism on the proliferation of club cells in yellow perch, *Perca flavescens*. The amount of club cells and mucus cells present on the back of the neck (nape) and side (flank) increased with increases in the degree of parasitism. We also compared the distribution of club cells on different parts of the body. Results showed that club cell density was highest on the nape, intermediate on the flank, and least numerous on the bottom. The same result was also seen in the number of mucus cells in each section of fish. These data provide support for a healing function of club cells. Club cells were most abundant in the nape where UV radiation is most intense, and club cells were most abundant in fishes exposed to high rates of parasitism.

108

Title: Portrait Drawing Demonstrations: Methods and Meanings

Presenter(s): Katie Semelis, Valerie Mikelson, Mika Takahashi, Jennifer Lindeman

Department: Art and Design

Advisor: Sherry Lee Short

Abstract: This dynamic portrait drawing demonstration will be presented by four students from the Department of Art and Design. Every 15 minutes of the first hour, one of the students will give a formal presentation on her work, including its historical influences, style, and intent. The second hour will be an informal, open session; as the work is being completed, visitors are invited to observe, ask questions, and view other examples of the students' finished work.

109

Title: NMR Study of Magnetic Molecules

Presenter(s): Moneer Al-Rifai

Department: Physics

Advisor: Ananda Shastri

Abstract: This presentation is based on an internship at Ames Lab, IA where we studied the nuclear magnetic resonance behavior of magnetic molecules. Our research focused on studying the proton NMR of these magnetic molecules (V12) at different magnetic fields and different temperatures (4.2-300K). To analyze this behavior, it is important to understand how the spin dynamics and the spin relaxation rate depend on the magnetic field and temperature.

110

Title: Mental Retardation

Presenter(s): Maggie Mork

Department: SLHS-Speech Language, Hearing Communications

Advisor: Louis DeMaio

Abstract: Mental retardation (MR) is defined as having substantial limitations in present functioning. People with MR can be further diagnosed as having mild, moderate, severe, or profound severity. Language is one of the most impaired areas for a child with MR. They have issues with pragmatics, semantics, syntax/morphology, phonology, and comprehension. Their difficulty in these areas depends on their severity. The possible causal factors for MR include biological, social-environmental, and processing factors. In conclusion, mental retardation is a very complex diagnosis that is often misunderstood.

111

Title: Digital Manipulation, Has it gone to Far?

Presenter(s): Aimee Imdieke

Department: Mass Communication

Advisor: Martin Grindeland

Abstract: My presentation will be on the the issue of digital manipulation. I will be speaking about the extremes that this issue has been taken to, and the opinions and ethics behind it. I will be presenting examples of various kinds of manipulations to correspond with my presentation, to help aid the audience in understanding the issue.

112

Title: Form Follows Function: Why Animals Look the Way They Do

Presenter(s): Rachael Smith, Jon Frykman

Department: Biology

Advisor: Alison Wallace

Abstract: This workshop will be an activity exploring evolution as a high school life science student would experience it. Hands-on activities and discussions will cover topics such as natural selection and genetics.

113

Title: Reproductive Ecology of Fathead Minnows (*Pimephales promelas*): The Effect of Nest Type on Reproductive Success

Presenter(s): Shireen Alemadi, Greg Grawunder

Department: Biology

Advisor: Brian Wisenden & Michelle Malott

Abstract: Animal mating systems include monogamy (M:F), polygyny (M:FF), polyandry (MM:F) and promiscuity (MM:FF). Here, we report preliminary findings of our study of variation in the mating system of a promiscuous fish, the fathead minnow (*Pimephales promelas*). Males establish a territory under submerged sticks or floating objects, chase away rival males and court females. Successful males may receive eggs from several females, and each female may deposit eggs in more than one nest. Males eat little during this time and often resort to eating their own eggs to sustain themselves. For this reason, females prefer to lay eggs in nests that already contain eggs. New, fresh males can therefore sire more eggs if they evict the half-starved resident male of a nest that contains eggs, than if they start a new nest on their own. We studied a population of fathead minnows in Budd Lake, MN, in Itasca State Park. We found that the type of nest strongly influenced the number of eggs received. Nests formed on the underside of lily pads contained significantly more eggs than nests formed on the underside of submerged sticks. Lily pad nests offered much more surface area for egg deposition. Eggs in lily pad nests were typically deposited in a single layer whereas eggs on the underside of sticks were often glued to each other in multiple layers. Stacking eggs would limit access to oxygen and potentially hinder egg development and hatch success. Male-male fighting was observed frequently, particularly around lily pad nests. We hypothesize that lily pad nests are more likely to contain eggs sired by multiple males due to nest takeovers. To test for multiple paternity, we developed DNA fingerprinting methods that we will eventually use to match the DNA of the male guarding the nest with the DNA of the eggs contained in his nest.

114

Title: The Wine Industry

Presenter(s): Meridith Sanders

Department: Economics

Advisor: Oscar Flores

Abstract: This presentation will take a look at the present state of the wine industry and the changes that have been taking place.

115

Title: Mothers and unfair pre-natal care.

Presenter(s): Erika Stein, Gretchen Omdahl

Department: Sociology

Advisor: Sue Humphers-Ginther

Abstract: Our presentation will demonstrate the difficulties of obtaining adequate pre-natal care based on different factors such as age, race, and ethnicity.

116

Title: Fraud: How to Make a Million Stealing from Your Employer

Presenter(s):

Department: Accounting

Advisor: James Hansen

Abstract: Fraud costs U.S. businesses \$600 Billion a year. Fraud schemes will be discussed, such as the outrageous "Crazy Eddie \$120 Million Rip-off", which included all five principle types. The accounting profession's reaction to fraud will also be detailed.

117

Title: Expression of Mitochondrial Genes in Wheat (*Triticum aestivum* L.)

Presenter(s): Pabalu Karunadharm

Department: Biology MSUM & Plant Sciences NDSU

Advisor: Khwaja Hossain & Shahryar Kianian

Abstract: Nuclear and organelle genomes in plants play an important role in expression of productivity traits. The sub cellular genomes - mitochondria and chloroplast - only code for a small number of genes but they are unique and irreplaceable for the regulation of the cellular processes in plants. Mitochondria is the center for energy synthesis and serves essential functions in the development of the plant. Mutations of mitochondrial genes lead to many changes in the plant development such as cytoplasmic male sterility (CMS) which is observed in as many as 150 plant species. Also there are many conserved sequences among the mitochondrial genomes of plant species. Wild species is the usual reservoir of genes for improvement of pest resistance, grain quality and agronomic fitness of any cultivated species. The genes affecting nuclear-cytoplasmic (NC) interactions seem to affect gene transfer from wild to a cultivated species. Analysis of gene expression in mitochondria will provide valuable information in understanding these NC interactions in the cell. So far seventy-eight mitochondrial genes have been identified in wheat. These genes are identified from several cDNA sequences. The purpose of this study is to isolate these mitochondrial genes and compare them with other mitochondrial genomes from grass species such as rice and maize

118

Title: The Conversion of MDH to LDH Through Site Directed Mutagenesis

Presenter(s): James Denker, Andy Thompson, Castel Santana

Department: Biology

Advisor: Joseph Provost

Abstract: Malate Dehydrogenase (MDH) is an enzyme that is involved in the pathways of the Krebs Cycle, carbohydrate, fatty acid, and amino acid metabolism. The role of MDH is to catalyze the reduction of oxaloacetate (OAA) to malate via oxidation of NADH to NAD⁺. Lactate Dehydrogenase (LDH) is a glycolytic pathway enzyme, which catalyzes the conversion of pyruvate to lactate. Upon alignment and examination of the amino acid sequences of yeast, and watermelon MDH isoforms, we found that their active site amino acid residues 102 and 171 are conserved. When the sequences of these isoforms are aligned with that of *Bacillus stearothermophilus* LDH (BsLDH) differences were found at or near these key sites (102:MDH-arginine, LDH-glutamine; 170: MDH-valine, LDH-alanine; 172: MDH-alanine, LDH-phenylalanine). The goal of this project is to shift the substrate specificity of yeast and watermelon MDH isoforms through saturation mutations, which should result in nearly every possible amino acid substitution at each of these key sites. A shift in substrate specificity from OAA to pyruvate, will in essence, convert MDH into LDH. Mutants of the yeast, and watermelon MDH will be constructed using the Stratagene Quickchange mutagenesis kit employing degenerate oligos with a highly efficient, long range polymerase to create site directed mutants for both the yeast mitochondrial and watermelon glyoxisomal isozymes. The resulting mutants will be assayed for specific enzyme/substrate interactions (MDH functioning vs. LDH functioning). We will develop a nitrocellulose filter assay system or, alternatively, we will create a stop time, spectrophotometric enzymatic assay to measure the catalytic rates of the reactions. Once mutation has been obtained, a Sanger-dideoxy DNA sequencing reaction will be performed in order to confirm the amino acid changes made to the resulting mutants and the specific kinetic changes in the mutants will be measured.

119

Title: Parent-Child Communication Program

Presenter(s): Lisa Fanfulik, Tracy Klassen

Department: Speech-Language-Hearing Sciences

Advisor: Louis DeMaio

Abstract: Parents play a crucial role in facilitating communication and language development in their child. A child's parent is usually their first communicative partner, so ideally they would speak with their child in a way that aids language rather than impedes it. In order to facilitate language development in a language-impaired child, it is important that parents "tune in" to their own communication style. For this reason, many therapy programs for language-impaired children are giving parents a central role in therapy. Teaching parents more effective ways of communicating with their child helps facilitate language development.

120

Title: The role of NHE1 in Balb-c rat tumorigenesis

Presenter(s): Hillary Thronson

Department: Biology

Advisor: Joseph Provost

Abstract: The sodium hydrogen exchanger (NHE1) is an ion transport protein with a wide variety of functions, one of which is intracellular pH regulation. Aberrant NHE1 activity can facilitate both tumor formation and metastasis by changing the internal and external environments of a cell. This study will attempt to determine if there is a correlation between exchanger function and tumorigenesis in Balb-c rats using cell lines with varying levels of NHE1 activity. CCL39 cells have normal NHE1 activity, while PS127 cells overexpress NHE1 and PS120 cells completely lack the exchanger. Previous studies have shown that an aggressive cell line (DMS 114) derived from a human pulmonary carcinoma will cause tumor formation in nude mice when injected into mammary fat pads (Waalkes, Bhalchandra). This study will use a similar cell line (DMS 79) derived from a pulmonary carcinoma as a positive control. Groups of rats will be injected subcutaneously with one of the aforementioned cell lines and sacrificed two and four weeks after injections to detect the presence and severity of tumors throughout the animals' bodies.

121

Title: Rape as a Weapon of War: Reproductive Issues Concerning Women in War

Presenter(s): Shannon Crabtree, Gwen Goos, Amanda Easton

Department: Women's Studies

Advisor: Tracy Scholl

Abstract: Paper addressing the issue of women's reproductive rights and women as a weapon of war.

122

Title: Growth Curve of Staphylococcus Epidermidis

Presenter(s): Sonnia Ranguma

Department: Biology

Advisor: Kathryn Wise

Abstract: The presentation will show the experiments I did on determining the growth and generation time of staphylococcus epidermidis at 37 degrees. The poster will show the procedure I used and the what I observed in order to come up with a growth curve showing all the different phases.

123

Title: The Implications of Selective Abortion in the Case of Disability: Integrating Disability Right and Reproductive Freedom

Presenter(s): Gwen Goos, Shannon Crabtree

Department: Women's Studies

Advisor: Tracy Scholl

Abstract: This will be a panel discussion on 3 papers written by Women's Studies Seniors all on the subject of Reproductive Rights. My portion of the discussion looks at selective abortion in the case of disability and what consequences abortions of this type have in the social context.

124

Title: Signature Quilt

Presenter(s): Hannah Mische, Jindallay Simmons

Department: American Studies

Advisor: Helen Sheumaker

Abstract: We will be researching and visually documenting a signature quilt. Information will be compiled for a historical web site. We will be documenting the ethnicity and occupations of the creators of this community signature quilt.

125

Title: Cost/Benefit Analysis of a Twins stadium in Minneapolis

Presenter(s): Ian Perkins

Department: Economics

Advisor: Oscar Flores

Abstract: I am going to see what the cost and the benefits are going to be to the city of Minneapolis, if its Twins stadium project is approved by the state government

126

Title: French Settlement in Clay County

Presenter(s): Trevor Cook

Department: American Studies

Advisor: Helen Sheumaker

Abstract: Both French Canadian and French nationals settled in Clay County, Minnesota, since the county's origin. I will report on the impact that each of these groups has made in shaping the county.

127

Title: Sports Economics

Presenter(s): Jeremy Tweed

Department: Economics

Advisor: Oscar Flores-Ibarra

Abstract: I will be identifying the costs, benefits, and the economic impact of a city that decides to build a new sports venue in a downtown area.

128

Title: Racing Through Time: A Historical Look at Horses in Clay County

Presenter(s): Kayla Muehler

Department: American Studies

Advisor: Helen Sheumaker

Abstract: From racing on the frozen Red River to aiding in plowing fields, horses were an integral part of life in Clay County. Prior to automobiles, people depended on horses for labor, transportation, and entertainment. This presentation will focus on artifacts, photographs, and the history of horses in the Red River Valley.

129

Title: Genocide and the Normality of the Perpetrators of Evil

Presenter(s): Bruce Ringstrom

Department: History

Advisor: Dieter Berninger

Abstract: The vast majority of genocide participants are ostensibly normal people, who embrace the moral precepts of their culture. Yet their actions as perpetrators accord with neither their normality nor their moral precepts. This paper explores the mechanics of transforming average people into participants of genocide.

130

Title: Rates of Groundwater Cadmium Attenuation in Gravels Impregnated with Glacial Clay in the Red River Valley

Presenter(s): Michele Lhotka

Department: Anthropology and Earth Sciences

Advisor: Russ Colson

Abstract: Cadmium is a naturally occurring metal that is used industrially in batteries, ceramics, and dental materials. It can also be found in cigarettes, coffee, tea, refined foods, water pipes and others. Cadmium is toxic when present in high levels to all mammals. It is most toxic when inhaled and is a probably carcinogen to humans and animals. Cadmium gets deposited in soils from improper disposal and because it naturally occurs in the Earth. The experiment reported here examines how cadmium concentrations in an aqueous solution will change with time due to reactions with sediment. Glacial till from one of the most recent deposits was collected from the Buffalo River Regional Science Center. Cadmium chloride aqueous solutions will be exposed to glacial till and gravel for times varying from one day to ninety days. We plan to measure the decrease in cadmium concentration with time as a means to establish how rapidly cadmium attenuation might occur in natural aquifers in the Red River Valley. The results will be presented at the conference.

131

Title: NMR Line Widths as a Signature of Crystal Geometry and Dynamics.

Presenter(s): Megan Sawarynski

Department: Physics and Astronomy

Advisor: Joe Ross (Texas A&M)

Abstract: A poster presenting the research that was developed during my summer 2004 internship with Texas A&M's Institute for Quantum Studies. We were looking at Type I Clathrates to determine where the elements "sit" in the cage-like structure by using the line shapes and the relaxation times of two samples.

132

Title: Spectroscopy and the Spectroscope

Presenter(s): James Herman

Department: New Center

Advisor: Dennis Jacobs

Abstract: This presentation will focus on the relevance and use of spectrosopes in human society, beginning with the earliest times to the present. It examines the study of spectroscopy in contemporary society, and provides some projections of possible future trends. The presentation will also include a demonstration of the use of a spectroscopy.

133

Title: Women's Empowerment

Presenter(s): Jessica Sletten

Department: Political Science

Advisor: Andrew Conteh

Abstract: There are many different discussions about rights, especially the rights of women. What does this really mean? What are the real goals of women's rights and how far do they really extend? Today I will take a look at women's rights and the different aspects of this concept. Such as, what women's rights are and what has been done to protect them. Also, what are some of the problems faced with implementing these rights and problems faced by the women fighting this battle. These are some of the issues not widely talked about or as often as they should be. Hopefully with awareness this will become a larger topic of debate and with debate something greater will be done about this issues, and true liberation of women can be reached.

134

Title: Colorful History of Moorhead School: Oak Port.

Presenter(s): Janet Hohenstein, Vusya Bentley

Department: American Studies

Advisor: Helen Sheumaker

Abstract: This presentation will touch upon the ethnic, language, student population and historical background of Oak Port School in Moorhead, Minnesota. We will encompass the effect on specific background culture and what teaching they used to pass on their culture. Students with many backgrounds have been taken for granted in the United States as a whole. However, the history of Oak Port School portrayed it otherwise.

135

Title: Gender Differences in Physical, Verbal, and Social Bullying of Elementary Students

Presenter(s): Jacqueline Hendricks

Department: Counseling and Student Affairs

Advisor: Patricia Neuman

Abstract: The presentation will provide an overview of gender research related to bullying behavior in school children and highlight the results of my thesis project, which examined the gender differences in physical, verbal, and social bullying behavior in upper elementary students. In addition, the influence of gender on admission to bullying and willingness to inform school professionals about violent incidents was examined.

136

Title: Shakespearean Theatre

Presenter(s): Samantha Pudil, Alissa Blaeser, Cole Flaatt

Department: Theatre

Advisor: Theresa Carson

Abstract: Look back on who Shakespeare was, what his plays were like and what he did for theater as a whole. There will also be a short scene performed

137

Title: Special Problem in Education: Reaching Out to Adopted Minorities

Presenter(s): Heidi Holmberg

Department: Multicultural Studies

Advisor: Helen Klassen, Dr.

Abstract: I will prepare a poster presentation on the problem of reaching out through the school system to children who have been adopted by a family of a different ethnic background. How should one give them pride in their heritage and in who they are without alienating them, their family, or their classmates? How does one teach these children that they are special without making them feel even more isolated, especially in a community that is predominantly white? These are questions that will be answered.

138

Title: Marxism, Revolution, and Reform

Presenter(s): Peter Montecullo

Department: Philosophy

Advisor: Randy Cagle

Abstract: Karl Marx believed that capitalist oppression was to be overthrown, and subsequently superseded by communism, wherein oppression is eliminated. However, there is much debate about the way in which such a task can be actualized. In fact, the debate focuses on whether revolution or reform is the best way in which to bring about communism. In this presentation, I will explain Marx's position along with demonstrating why it is that revolution presents a better case for actualizing the communist goal.

139

Title: Child Labor

Presenter(s): Njeri Mwangi

Department: Political Science

Advisor: Andrew Conteh

Abstract: My paper is on child labor. It defines what child labor is and the different forms that exist. It also looks at what the United Nations along with the International Labor Organization are doing to eliminate child labor all over the world.

140

Title: China's One Child Policy: The Changing Face of Family Planning

Presenter(s): Brandon Sherman


Department: East Asian Studies

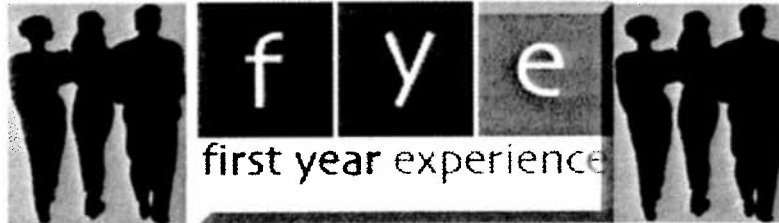
Advisor: Henry Chan

Abstract: A common problem facing developing countries today is the taxes on resources caused by overpopulation. China holds the distinction of a negative total fertility rate (TFR), which is generally found only in developed countries such as the United States of America and Germany. The reasons for China's negate TFR, however, differ from those of developed countries. This presentation will examine the historical development of family planning policy in China and the structure and methods of its implementation. It will discuss some of the failures and successes of the policies, and address some of the international dialogue concerning the policies. Lastly, it will discuss some of the reforms that the policies have undergone in the last decade. Ultimately, the presentation hopes to provide an introductory overview of the family planning in China and the "One Child" policy.

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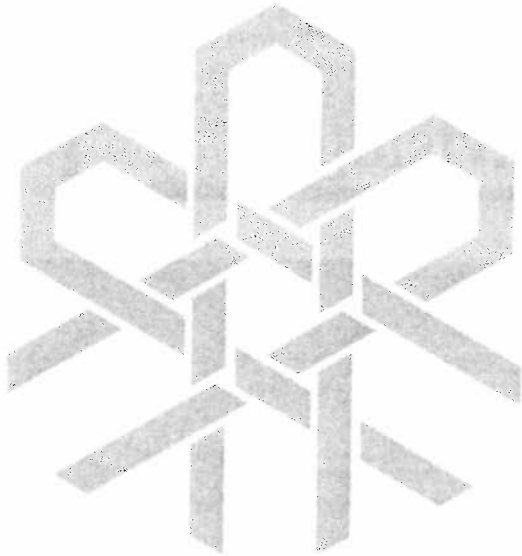
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games, outdoor equipment and computer lab

Underground

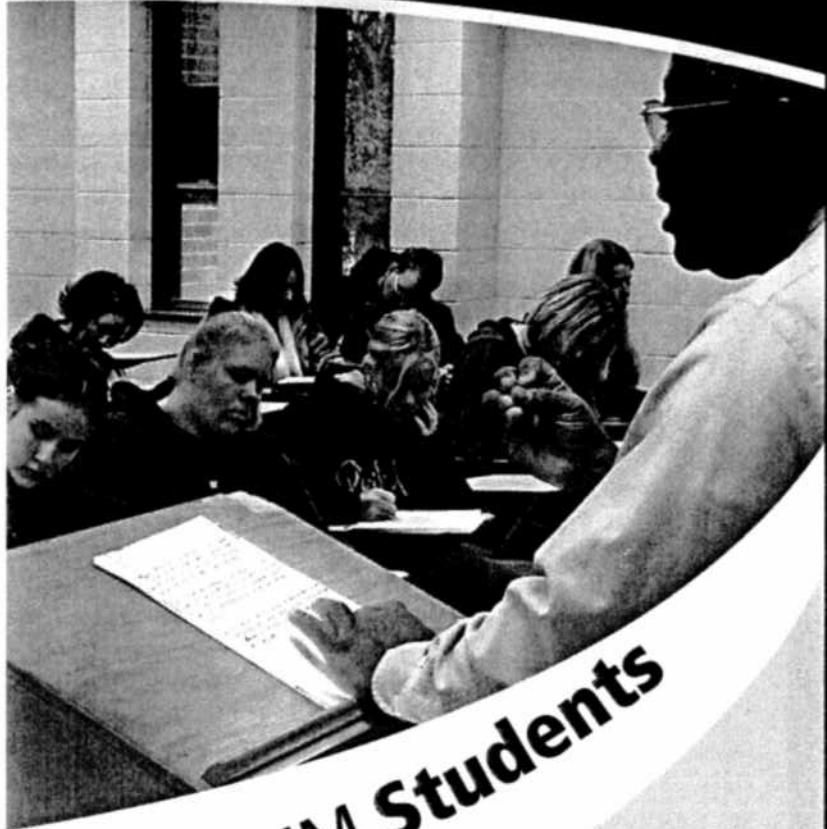
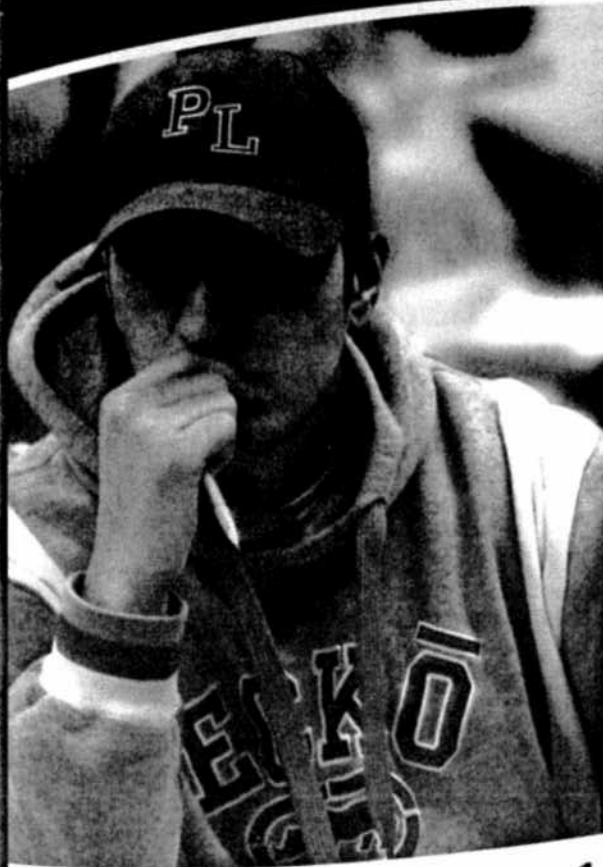
non-alcoholic dance club

Other Services Include

Hair & Tanning Salon, Affinity Bank & ATM, Union City, Subs & Sweets

For more information contact the CMU at 218.4772261 or visit www.mnstate.edu/cmu

MINNESOTA STATE UNIVERSITY MOORHEAD
ALUMNI FOUNDATION



Congratulations MSUM Students

The Alumni Foundation provides more than \$1,000,000 annually in scholarships, grants and program support to the MSUM community.

We are proud of your academic achievements and wish you continued success in all future endeavors.

www.mnstate.edu/alumni



The mission of the Minnesota State University Moorhead Alumni Foundation is to develop relationships and provide funding to advance academic excellence.

We Proudly Support Student Academic Conference Scholars

Counseling Center

Bridges 260

www.mnstate.edu/counsel

Monday-Thursday
8:00 a.m. - 5:00 p.m.

Friday
8:00 a.m. - 4:30 p.m.

Services

- Personal Counseling
- Career Counseling
- Supplemental Instruction
- Personal Development
- Courses
- Study Skills Program
- Graduate School Testing
- Career Resource Library
- Disability Services

Career Services

CMU 114

www.mnstate.edu/career

Monday-Friday
8:00 a.m. - 4:30 p.m.
(7:00 p.m. Tuesday, school year)

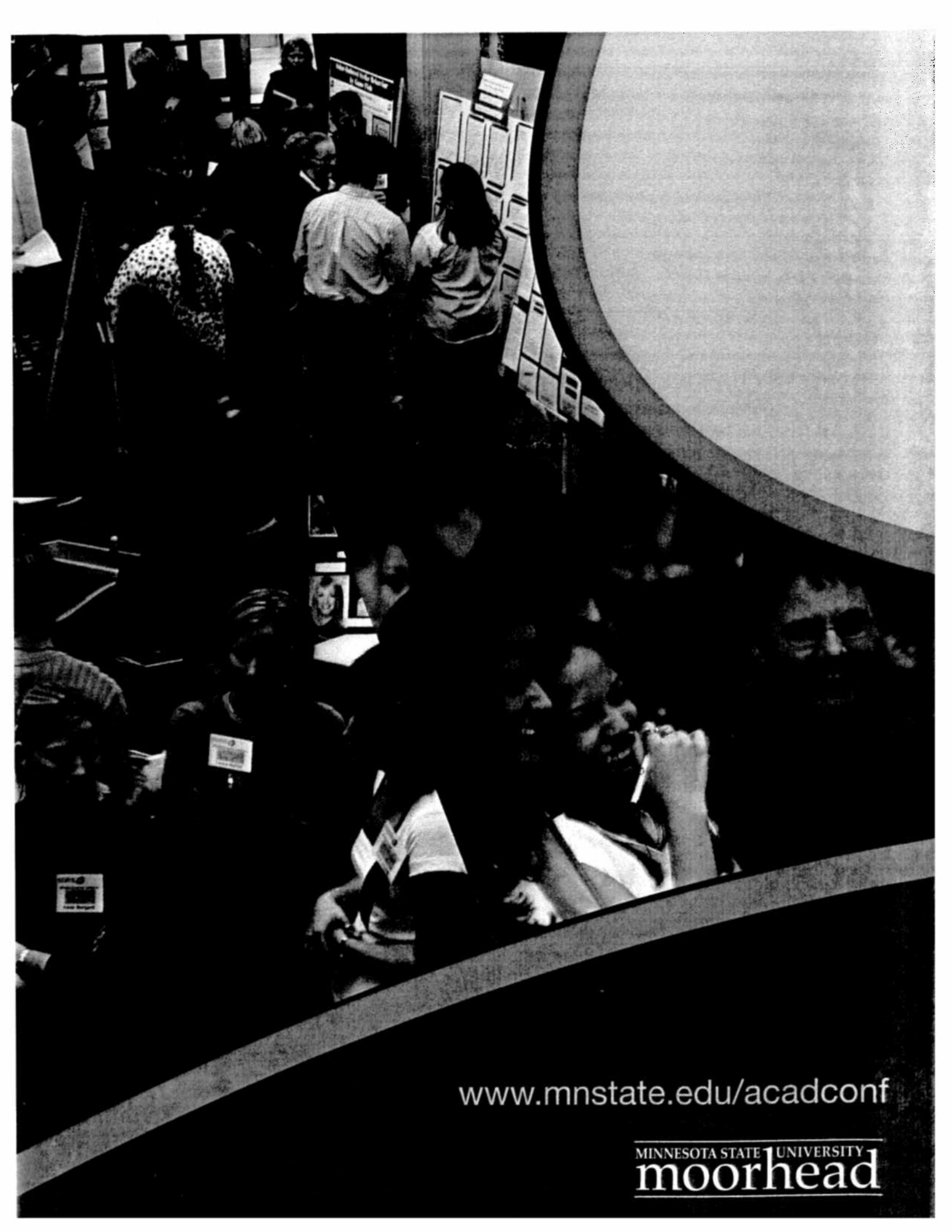
Tuesdays and Fridays
11:00 a.m. - 2:00 p.m.
(Satellite Office CB 101, school year only)

Services

- Career Services
- Career Information and Planning
- Mock Interviews
- Internship Opportunities
- Job Seeking Skills Workshops
- Dragon Careers On-Line Service
- On-Campus Recruiting
- Career and Job Fairs

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www.mnstate.edu/acadconf

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