



# 8th ANNUAL STUDENT ACADEMIC CONFERENCE

# 2006

April 12



**SUPPORT:** THIS CONFERENCE EXISTS BECAUSE OF THE WORK OF THE ENTIRE UNIVERSITY COMMUNITY, BOTH IN FINANCIAL AND MORAL SUPPORT. SUPPORTERS INCLUDE: SOLOMON COMSTOCK FUND, STRATEGIC GRANT INITIATIVES FUND, PRESIDENT'S OFFICE, ACADEMIC AFFAIRS, STUDENT AFFAIRS, ADMINISTRATIVE AFFAIRS, ALUMNI FOUNDATION, INTER FACULTY ORGANIZATION, MSUAASF, AFSCME, STUDENT SENATE, CAMPUS ACTIVITIES BOARD, STUDENT ACTIVITIES BUDGET COMMITTEE, AND SODEXHO SERVICES.

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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 Sodexho Services.

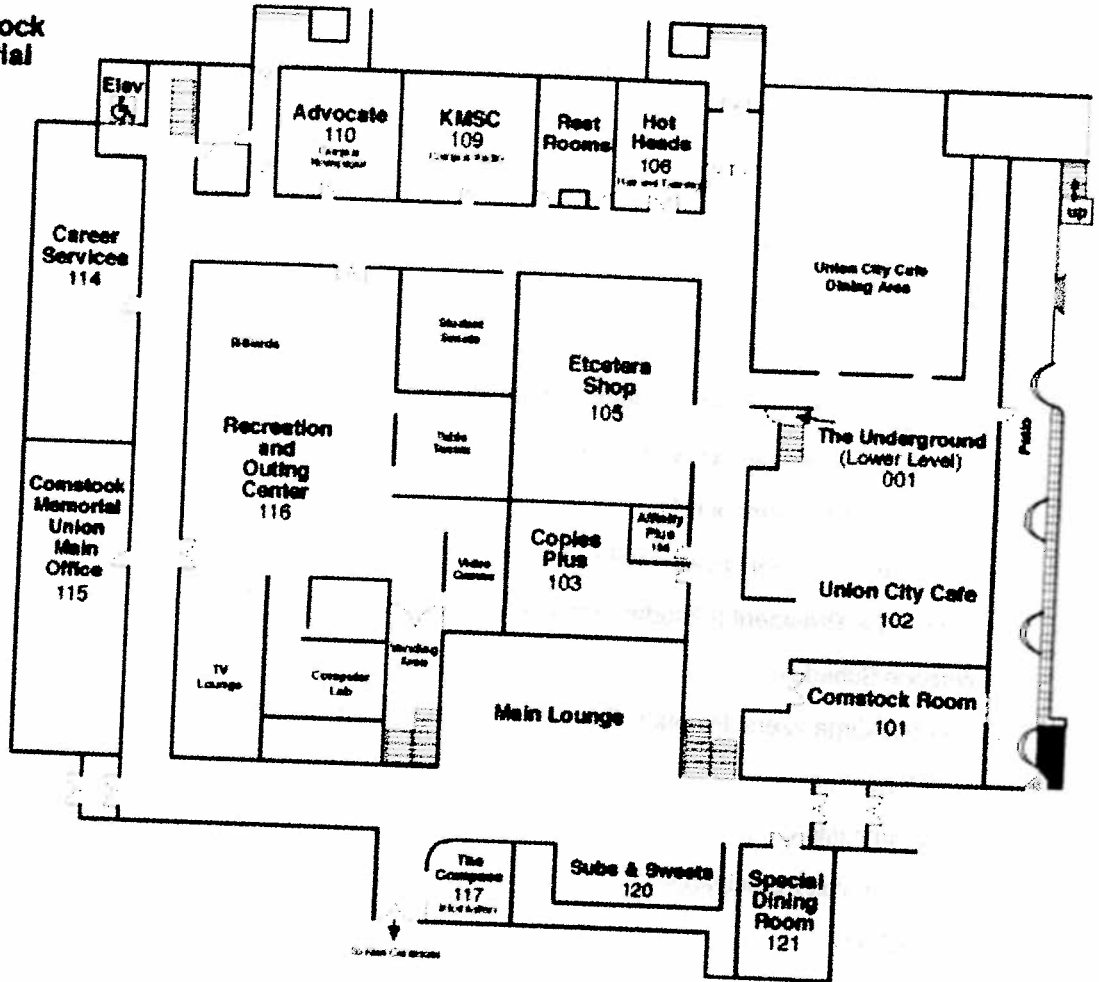
# Comstock Memorial Union Map



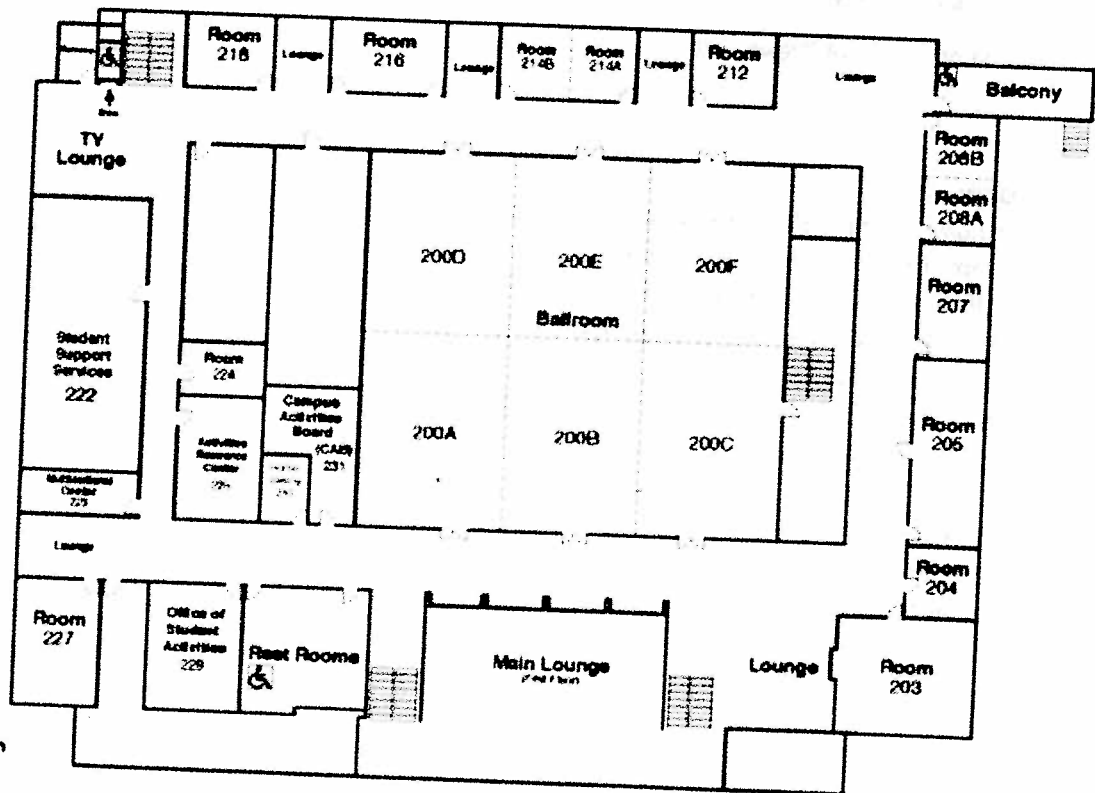
Comstock Memorial Union



First Floor



Second Floor



The Comstock Memorial Union is a smoke-free environment.

# How the Conference got Started

## Conference Highlights

2006	233 Presentations / 341 Presenters
2005	184 Presentations / 317 Presenters
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



## THE ORIGINS OF MSUM'S STUDENT ACADEMIC CONFERENCE

*By: Paul Kramer and Brian M. Card*

Minnesota State University Moorhead's Student Academic Conference provides student researchers from each of its four colleges with the opportunity to present their work to faculty, administration, peers, and the general public in a formal academic setting. The Conference has grown exponentially over the past eight years to become one of MSUM's most eagerly anticipated annual events.

The Conference was conceived in 1998 through the collaborative efforts of Political Science professor Andrew Conteh and his then student-assistant Ryan Sylvester, who envisioned a forum for students to present original research that would reflect the intellectual vibrancy of the MSUM community. As the format of the proposed Conference took shape, Dr. Conteh and Ryan jointly advocated its relevance to the University's top administrators who expressed both excitement and support for the concept. The enthusiastic participation of both faculty and administration has been a hallmark of the Conference since its inception and remains perhaps its most obvious source of continued success.

Traditionally, the Conference begins with a luncheon held in honor of its presenters, headlined by a keynote speaker address delivered by an MSUM alumnus. The speaker is chosen by the Conference's faculty advisory committee with the goal of identifying MSUM "success stories" representing the multiple disciplines and career orientations offered at the institution. As part of the presentation, current MSUM students are chosen as panelists who respond to the keynote speaker address and present their own personal anecdotes regarding their individual research experiences.

Following the luncheon, students showcase their work in panel discussions, workshops, multimedia presentations, displays, and demonstrations throughout the expanse of the Comstock Memorial Union. The Conference's ever-increasing popularity among students has necessitated moving some of the presentations to Livingston Library in order to accommodate all those who want to share their academic work with their community.

The conference organizers remain committed to encouraging a multi-disciplinary approach to research projects, allowing visitors and guests to explore a panoply of different efforts showing the breadth of opportunities presented in the campus environment. Most of the presentations are limited to twenty minute time periods in order to allow the conference attendees to gain a wide variety of perspectives over the course of the afternoon's events. The Conference ends with a brief reception that allows participants and attendees to relax, unwind, and reflect upon a day of academic exchanges.

Without the support of many different campus organizations and financial contributors including faculty, administrators, support staff, and students too numerous to mention individually, the Conference would cease to exist. The organizer's of this year's event also wish to note the expansion of support from the Fargo-Moorhead community at large as the program expands and reinvents itself over time. As soon as this year's Conference ends, planning for the next will begin, with new lessons learned and optimism that each succeeding year will bring a bigger and better experience for the MSUM community.

## Letter from the Chancellor

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*Dear Minnesota State University Moorhead Students, Colleagues, and Friends:*

*Once again, and on behalf of the Minnesota State Colleges and Universities system, I am pleased to extend congratulations on the occasion of the Minnesota State University Moorhead Student Academic Conference. This is an annual event that gives recognition to the talent, scholarship, and research achieved by our students.*

*The Moorhead conference participants bring the vision of the system to life. We strive to enable the people of Minnesota to succeed by providing the most accessible, highest value education system in the nation. Our students are proof that we are on the right track through their laudable endeavors. Indeed, because of our students, we know that the power of scholarship and creativity thrives in this fine university community.*

*Please accept my deepest appreciation for the commitment that the conference advisor, planners, volunteers and all students, alumni, mentors, faculty, and staff have made to make the conference a success. Best wishes on this Eighth Annual Student Academic Conference.*

Sincerely,

A handwritten signature in cursive script that reads "James H. McCormick".

James H. McCormick  
Chancellor

## Letter from the President

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Greetings:

I, and the faculty, are proud of our students who pursue scholarly and creative projects. Many students become proficient student-scholars and student-artists. The Student Academic Conference showcases their works each spring; indeed, this event has become a hallmark tradition at MSUM.

Essentially all research papers, creative works, group projects, and other student presentations are created under the personal supervision of an involved faculty mentor. Mentoring is central to the teaching-learning activities at MSU Moorhead. This conference presents the student work inspired by the involvement and encouragement of our faculty-mentors.

Presenting one's work beyond the classroom and in the conference setting promotes student growth and development. Students who participate in the Student Academic Conference experience both the challenge and the pleasure of presenting to a competent and interested audience. Critique of one's intellectual products by other students, faculty, and members of the community is an essential part of academic intellectual freedom. Defending ideas in a supportive but critical community of student and faculty scholars is a wonderful opportunity for personal professional growth.

As an audience member, you will encounter intellectual curiosity and creativity. You will be presented with a wide array of new ideas, fresh approaches, and unique methods for arriving at creative solutions. I know that you will be impressed with the curiosity and rigor of our students.

Congratulations to all student participants, faculty mentors, conference planners, and supporters. You make this event a memorable experience for all of us. Thank you for your role in building Minnesota State University Moorhead's mission to foster excellence in teaching and learning.

Sincerely,

A handwritten signature in cursive script that reads "Roland Barden".

Roland Barden  
President

## Letter from the Vice President of Academic Affairs

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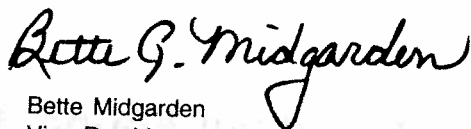
Conference Participants:

*The Student Academic Conference: Bridging the Discipline* became a classic event in its first year. Looking back on that initial day in April 1999, it is clear why the conference so easily became a part of MSU Moorhead's culture. Student learning is our core mission, and nothing could be more appropriate for us to do than to celebrate student achievements in scholarship, research, and creative activity.

So much attention in recent times has been focused on partnerships and collaborations. It is particularly important to keep in mind *always* that the most vital collaboration is the one between student and teacher. Today, you have the opportunity to learn from the results of so many truly special partnerships. The difficulty is the task that is ahead of you – how to choose among so many sessions.

As you move through the sessions, be certain to ask questions of the student presenters. Also, please take a moment or two to thank the faculty mentors, without whom the level of student accomplishment you will experience today could never have been achieved.

Yours truly,



Bette Midgarden  
Vice President

## Letter from the Vice President of Student Affairs

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Welcome!

The Student Academic Conference provides an excellent avenue for presentation, discussion and reflection of a wide array of significant student work. It is an experience that requires engagement of many avenues of learning both in and out of the traditional classroom. The laboratories of learning are great in student employment opportunities, student organization/activities participation, student governance, residence hall living and a variety of leadership programs. MSUM has many excellent faculty and staff to foster the teaching and learning experience. Thank you for your participation, engagement and dedication to getting the most out of your total MSUM experience of developing life-long learning.



Warren Wiese

## Letter from the President of IFO

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Greetings:

On behalf of the Faculty and Minnesota State University Moorhead, I want to welcome and congratulate all of the students who are part of this amazing academic conference.

Nothing is more rewarding for faculty than to see our students learn and grow. We know that this conference gives them the chance to display their substantive learning. More than that, the conference also helps our students develop written and oral communication skills that are the hallmark of a good education.

I also want to express my appreciate to all of our colleagues who have spent so many hours working with these students – helping them to get to this place as part of the conference. Special note is also made of the work of our colleague, Dr. Andrew Conteh, who had both the idea and the energy to bring the conference to a reality.

With best wishes from the Faculty,



Cindy Phillips  
President  
MSU Moorhead  
Faculty Association

## Letter from the Executive Vice President of Alumni Foundation

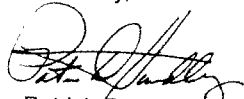
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When I was only a freshman in college, I was privileged to have a "favorite" professor who believed in undergraduate research. Not only did he introduce me to the joy of discovery, but I also received the discipline and appreciation for the methods of research. These lessons continue to be a part of my successes to this day.

The eighth annual Student Academic Conference is a wonderful opportunity for our students here at Minnesota State University Moorhead to showcase their expertise in research in their chosen fields and to demonstrate to all our very high levels of scholarship. The MSUM Alumni Foundation is honored again to be a part of this wonderful endeavor.

All of the students of MSUM benefit greatly from this program, and we look forward to these principles of research becoming a part of their continued success as alumni.

Sincerely,



Patrick D. Hundley  
Executive Vice President

## Letter from the President of the Student Senate

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Greetings,

As an institution, Minnesota State University Moorhead is committed to the academic and social development of its students. Over the course of their study, individuals learn to combine intellect, research, and ideas with the ability to communicate these discoveries effectively. In the tradition of this commitment to academic excellence, the annual Academic Conference provides an outlet for students to demonstrate their mastery of these skills.

The development and sharing of knowledge is at the very core of the Academic Conference. Through hard work and dedication to the subject matter, students are able to share their findings and showcase their skills.

There is no doubt that the Academic Conference is a challenge, social as well as academic, but the students at our institution are well prepared to meet that challenge. Our peers and our professors have given us the best tools possible to become an interactive and engaged member in an increasingly complex society.

In closing, I would like to congratulate all participating students, both for your commitment to academic excellence and to the integrity of our institution, as well as the dedication you have shown to your own development.

Sincerely,

James Cailao

# Conference Schedule

Wednesday, April 12, 2006

- 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**
- 11:50 A.M. **Keynote Speaker—CMU Ballroom**  
Tammy J. Miller, CPA  
CEO Border States Electric Supply
- 12:20 P.M. **Student Panelists—CMU Ballroom**  
Markus Krueger, College of Arts & Humanities  
Shauna Slabik, College of Business & Industry  
Scott Garman, College of Education & Human Services  
Kelsey Stoos, College of 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 Ceremony—CA**  
Refreshments sponsored by Counseling and Personal Growth Center.



# Conference Organizers And Steering Committee

## Conference Coordinator



**Dr. Andrew Conteh**  
*Professor of Political Science*

## Conference Organizers

**Brian M. Card**

*Political Science Department*



**Haleigh Overseth**

*Mass Communications Department*



## PROGRAM COMMITTEE

Brian Card	Annette Morrow
Andrew Conteh	Ruth Newton
Richard Lahti	Geok Lian Ng
Kristin Larson	Carl Olvedt
Karl Leonard	Judith Peterson
Ruth Lumb	Gaile Pohlhaus
Christine Malone	Hazel Retzlaff
Rupa Mitra	

## LOGISTICS COMMITTEE

Layne Anderson	Brittney Goodman
Laurie Blunsom	Christopher Huot
Yurii Boreisha	Kristine Montis
Thomas Brandau	Joseph Provost
Brian Card	Maureen Reed
Andrew Conteh	Greg Stutes
Timothy Decker	Harry Weisenberger

## How 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](mailto:acconf@mnstate.edu)

# Keynote Speaker

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 years Keynote Speaker is:



## **Tammy J. Miller, CPA** **CEO, Border States Electric Supply**

Tammy was named CEO of Border States on January 2, 2006. In preparation for her new responsibilities, she served as the company's President in 2005. Prior to 2005, Tammy was the Executive Vice President for the company. As EVP, Tammy wore two hats. She was the General Manager for the Company's Southwest Region with branches in Phoenix, Tucson, Albuquerque, Farmington, El Paso, and Juarez. She also served as Border States' CFO with responsibilities for accounting, finance, credit, and legal. Tammy joined Border

States in 1991 after working in public accounting for more than 8 years.

Tammy is a member of the Company's Board of Directors, Executive Committee, ESOP Committee, and 401(k) Investment Review Committee.

Border States is the 14<sup>th</sup> largest electric distributor in the United States with 24 branch locations in 11 states in the United States and in Mexico. Border States is 100% employee-owned through an Employee Stock Ownership Trust. The Company provides products and supply chain solutions to the utility, industrial, construction, and datacomm markets and is headquartered in Fargo, ND.

Tammy has just negotiated a major acquisition that will be consummated on April 1, 2006. After the acquisition, Border States will generate annual revenue of \$600 million and will have 43 branch locations and 1,000 employees.

Miller is the Vice President for NAED's (National Association of Electrical Distributors) Western Region. She is also a member of NAED's Board of Directors and chairs its SPA Process Improvement Task Force.

Tammy has a BS in accounting and an MBA from Minnesota State University Moorhead. She has received two distinguished alumni awards from her alma mater.

In her spare time, Tammy loves to workout, travel, and volunteer.

Tammy and her husband, Craig Palmer, make their home in Scottsdale, Arizona and Fargo, North Dakota.

### **PAST KEYNOTE SPEAKERS**

2005 – Todd Marvin Koel, Ph.D, Biology

2004 – Thomas C. Proehl, Theatre

2003 – Dr. Tom Sawyer, Chemistry

2002 – Kimberly Maluski Sarte, Economics

2001 – Dr. Paul Spies, Education

2000 – Dr. Janet Anderson, Education

1999 – Dr. Shawn Dunkirk, Chemistry

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## Juried Student Art Exhibition

The Juried Student Art Exhibition is an annual event open to all students taking classes in the Department of Art and Design at MSUM, during the current academic year. The 2006 exhibition is on display April 10 – 25 in the gallery, located in the Roland Dille Center for the Arts. The juror this year is Kathryn Lipke-Vigessa, a visual artist who has established an international reputation for her dynamic work in a wide variety of mediums such as: papermaking, sculpture, photography, video, and textiles.

Each student was able to enter two pieces of artwork. The work was juried on April 6, and awards will be presented at a reception in the gallery foyer on Wednesday April 12 at 4:00PM. The award designations are: Juror's Choices, Honorable Mentions, and Viewers' Choice. This event is free and open to the public. Refreshments will be served.

## Session Chairs

- CMU 101  
1:00 - Session 1 Konrad Czynski  
2:30 - Session 2 Kathryn Wise
- CMU 121  
1:00 - Session 1 Dean Michael Parsons  
2:30 - Session 2 Jody Mattern
- CMU 200A  
2:30 - Session 2 AVP Judy Strong
- CMU 200B  
2:30 - Session 1 Clifford G Schuette
- CMU 200C  
2:30 - Session 2 Benjamin Smith
- CMU 203  
1:00 - Session 1 Jean Hollaar  
2:30 - Session 2 Sheri Erickson
- CMU 205  
1:00 - Session 1 Deborah White  
2:30 - Session 2 Henry Chan
- CMU 207  
1:00 - Session 1 Kathleen Enz Finken  
2:30 - Session 2 Annette Morrow
- CMU 208  
1:00 - Session 1 Ellen Brisch  
2:30 - Session 2 Dawn Hammerschmidt
- CMU 214  
1:00 - Session 1 Ronald M. Jeppson  
2:30 - Session 2 Zachary B. Machunda
- CMU 216  
1:00 - Session 1 Michael McCord  
2:30 - Session 2 Mayor Mark Voxland
- CMU 218  
1:00 - Session 1 Warren Wiese  
2:30 - Session 2 Chris Birmingham
- CMU 227  
1:00 - Session 1 Lee Vigilant  
2:30 - Session 2 David Rodenbaugh
- Kise Line D  
1:30 - Session 1 Joan Justesen  
2:30 - Session 2 Mike Redlinger
- Underground  
1:00 - Session 1 Richard Henderson  
2:30 - Session 2 Dr. George MacLean
- Library Porch  
1:00 - Session 1 Geok Lian Ng  
2:30 - Session 2 Tammie Schmiess
- Library Instruction - Room 208  
1:00 - Session 1 Travis Dolence  
3:00 - Session 2 Deneen Axtman
- CMU 200D  
3:00 - Session 2 Brittney Goodman

# Schedule by Room

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- **CMU 101**

- Session 1**

- 1:00 512 The physics of using your head in a game of soccer
    - 1:20 554 Russian Enlightenment through the effort of Catherine the Great
    - 1:40 548 Rhetorical Criticism Analysis: The Sinking of the Kursk: A Criticism on Russian Power
    - 2:00 546 Developing Methods on the Beckman Coulter CEQ 8000 for Paternity Analysis to Understand Reproductive Behavior in Wild Population of Fathead Minnows (*Pimephales promelas*)

- Session 2**

- 2:30 495 Reproductive Rights: the protection and violations against the basic human right of reproduction.
    - 2:50 510 The Use of Child Soldiers: The Colombian Experience
    - 3:10 509 A Naturalistic Inquiry of an Online Community
    - 3:30 533 Boundary Issues in Faculty-Student Relationships

- **CMU 121**

- Session 1**

- 1:00 407 Temperature Modeling
    - 1:20 474 The Last Philosophe: Marquis de Condorcet and the Enlightenment
    - 1:40 472 Darfur: Is it Genocide?
    - 2:00 542 Female Athlete Triad

- Session 2**

- 2:30 553 Title IX in Division II
    - 2:50 540 Determination of genetic variation in Liverworts by analysis of Inter-Simple-Sequence-Repeats on a Beckman-Coulter CEQ 8000.
    - 3:10 537 Impact of Science and Technology on the Progressive Development of Intrnational Law
    - 3:30 529 Sex Education in the United States

- **CMU 200A**

- 2:30 446 The Ups and Downs of Science

- **CMU 200B**

- 2:30 504 Shocking Science

- **CMU 200C**

- 2:30 525 Pump Me Up: the Physics of Pressure

- **CMU 200D**

- 3:00 524 Now I See the Light!

• **CMU 203**

**Session 1**

- 1:00 408 Tommy John Injury/Surgery  
1:20 552 Color Bias in On-Line Surveys A Comparison of Chromatic vs. Achromatic Selection in an Electronic Survey Tool  
1:40 497 The Battle Over Our Sexual Intelligence: An Exploration of Various Methods of Sex Education with a Focus on Abstinence-Only Education Deficiencies  
2:00 465 Freud's Heyday: Sex & Aggression in Lawrence's "The Prussian Officer"

**Session 2**

- 2:30 493 Piracy and the Importance of Abandonware  
2:50 489 Student Led IEP Meetings  
3:30 416 Xenoestrogens: Environmental Politics Playing Out on the Human Body

• **CMU 205**

**Session 1**

- 1:00 468 Reproductive and Sexual Rights of Women  
1:20 405 Fairness of Major League Baseball Fields  
1:40 430 Corporal Punishment: Right or Wrong?  
2:00 403 Comparing the Relaxation Time of Different Concentrations of Salt Water using Nuclear Magnetic Resonance Spectroscopy

**Session 2**

- 2:30 401 Sino-U.S Detente 1972  
2:50 397 Female Labor Force Participation: A Cross-Sectional Study of Major US Cities  
3:10 382 Fraud in Our Community  
3:30 589 Teaching Philosophies of Tomorrow's Art Educators

• **CMU 207**

**Session 1**

- 1:00 376 The Impeachment and Trial of Warren Hastings  
1:20 578 NAFTA and its Effects on US Jobs  
1:40 406 Effective Deployment of Irrigation Systems  
2:00 447 Ho Chi Minh - His Quest for the Independence of Vietnam

**Session 2**

- 2:30 476 U.S. Automobile Industry  
2:50 463 Seventh Centruy Silk Road from the Jade Gate to Turfan: With Reference to Xuanzang's Travels  
3:10 462 Claude Debussy's Pelléas et Mélisande as a symbolist work  
3:30 586 Will Social Security be There for You?

• **CMU 208**

**Session 1**

- 1:00 461 Online Presentations with Tegrity  
1:20 460 Accounting Fraud and the Accounting Profession  
1:40 434 FGM at Home and Abroad  
2:00 450 Genderqueer

**Session 2**

- 2:30 451 Economic Analysis of the Recording Industry  
2:50 444 Ho Chi Minh: His Quest for the Independence of Vietnam  
3:10 441 Geophysics: New Prospects in Non-destructive Archaeology  
3:30 452 Depression

• **CMU 214**

**Session 1**

- 1:00 432 Yung Wing and the First One Hundred Chinese Students In America
- 1:20 467 Dramatism and George W. Bush's September Eleventh Address
- 1:40 453 Building a Student Community with an Online Calendar and Interactive Events.
- 2:00 581 Performance Techniques for the Trombone

**Session 2**

- 2:30 587 Regional Human Rights Regimes: An Examination of 3 Established, Western Governmental Organizations
- 2:50 567 Unemployment in America
- 3:30 426 Hydrogen from Hydrogen Peroxide: A Solar Assisted Pathway to Economical Hydrogen Production?

• **CMU 216**

**Session 1**

- 1:00 579 The Sugar Beet Industry in North Dakota and Minnesota
- 1:20 617 Create Mandarin Dress from Flat Pattern Method
- 1:40 582 Examining the Role of Exercise & Development on Mitochondrial Oxidative Stress
- 2:00 565 Big Pharma and Cheated Americans - Why Do Life Saving Drugs Cost So Much?

**Session 2**

- 2:30 603 One Night in Bangkok: Sex Trafficking
- 2:50 564 "Give us something to eat" Famine and Hunger in the world
- 3:10 584 Trade Imbalance Between USA and China, 1999 - 2005

• **CMU 218**

**Session 1**

- 1:00 618 Corset Making Through the Flat-Pattern Method
- 1:20 374 Essay on Faith and God's Essence
- 1:40 577 Economic and Social Consequences of the Mounting US Debt
- 2:00 591 Periodical Influence on Social Consciousness in Early 20th Century Literature

**Session 2**

- 2:30 576 How in Heaven's Name Do We Deal with Conservative Christians?
- 2:50 575 Fraud in the Workplace
- 3:10 574 Credit Card Debt Among College Students
- 3:30 588 Race and Crime: Prejudice or Coincidence?

• **CMU 227**

**Session 1**

- 1:00 593 The Development of a Novel Drug for Cancer Therapy
- 1:20 561 Replacing Paper based Scheduling and Checkouts with a new Online Application
- 1:40 559 How to Choose Appropriate Vocal Repertoire.

**Session 2**

- 2:30 597 Strategies for Various Learning Needs
- 2:50 592 Color Inversion and Detail Effects on Face Recognition
- 3:30 573 Voices of Women from the Fringes

• **Kise Line D**

**Session 1**

- 1:00 594 Reading the MSUM Landscape: The Truth Behind the Facades
- 1:00 459 Reading the MSUM Landscapes: Student Dormitories: Do they lend judgement and feeling to the college experience?
- 1:00 614 Reading the MSUM Landscape: The Monumental and the Vernacular
- 1:00 480 Reading the MSUM Landscape: The Ideology of Campus Tours
- 1:00 505 Reading the MSUM Landscape: Images of Power

**Session 2**

- 2:30 523 Can You Hear Me Now? The Science of Sound

• **Library Instruction Rm. 208**

**Session 1**

- 1:00 404 Irrigation System
- 1:20 475 Nigeria
- 1:40 372 An Analytical View of the Relationship between Religion and the Concept of Human Rights: A United States Perspective
- 2:00 520 Red Lake Nation Tribal Enrollment

**Session 2**

- 2:30 532 International Business Trip to China
- 2:50 412 Geometric Rulers
- 3:10 411 Public International Law and the War in Iraq
- 3:30 440 Suubi and a muzungu: learning from AIDS orphans in East Africa

• **Library Porch**

**Session 1**

- 1:00 370 Multiplication Made Easy
- 2:00 626 Where's Jazz?

**Session 2**

- 2:30 428 Making Proportions Simple.
- 3:10 583 Iris Murdoch's 'A Severed Head': Neoplatonic Severance of the Head from the Body

• **Main Lounge**

**Session 1**

- 1:00 420 Assessing genetic diversity of *Pimephales promelas* using PCR-based microsatellite analysis and capillary electrophoresis analysis
- 1:00 435 Relationship Between Size of Adult Female Painted Turtles (*Chrysemys picta bellii*) and Numbers of Younger Turtles in Two Sloughs in Clay County, MN
- 1:00 418 Creation of a CDC 28 "knockout" (by generating a temperature sensitive loss of function) mutant to observe mitochondrial inheritance in *Saccharomyces cerevisiae*
- 1:00 436 Synthesis of Porous Metal-Organic Frameworks containing Chiral Organic Ligands
- 1:00 469 The Effect of a 150 kT Nuclear Weapon on Sabin, MN
- 1:00 471 Matrix Metalloproteinase 9 activity by phenylephrine requires Sodium Hydrogen Exchanger 1
- 1:00 551 Photographic Alternative Processes
- 1:00 550 Photographic Alternative Processes: Polaroid lifts and transfers
- 1:00 433 Black Powder Rocket Motor Construction and Impulse Testing
- 1:00 549 Alternative Processes: Polaroid Film
- 1:00 439 Situated cognition and Peer Learning Environments between Students From Different Cultural Backgrounds
- 1:00 514 Soil Separates for Magnetic Analyses of Archaeological Soils
- 1:00 511 Sexual Size Dimorphism & Optimal Life History Strategies in Common Green Darners
- 1:00 455 What Can Nonwords Tell Us About the Role of Sound and Spelling in Spoken Word Recognition?
- 1:00 513 A Research Proposal: Space Utilization by Sympatric Tree Squirrel Species in a Western

		Minnesota Woodlot
1:00	545	Examine the role of aging and development on mitochondria oxidative stress
1:00	448	What nuclear destruction may do to your small town.
1:00	449	Image Quality of X-Rays
1:00	466	EFolio
1:00	541	Formation of Nanophase Metals in Quenched Silicate Glass
1:00	502	The Impact of Grassland Management on the Abundance and Territory Size of Bobolinks (Dolichonyx oryzivorus)
1:00	604	How Significant is the issue of Date Rape Drugs as a Precipitating Factor in Sexual Assault?
1:00	558	Origin of Vesiculation in Lunar Mare Basalts
1:00	566	The Cents fo Mental Health
1:00	519	Investigating Asexual Fitness in Utricularia vulgaris
1:00	569	Factors that Influence Risk-Taking Decisions
1:00	395	Battles, Ethical and Religious aspects relating to assisted suicide and euthanasia
1:00	580	The Importance of Handedness for Females Solving Visual-Spatial Problems
1:00	568	Stress Fiber Formation is Essential for Cellular Migration in Chinese Hamster Lung Fibroblasts
1:00	392	Methicillin-Resistant Stapholococcus Aureus
1:00	390	Manitoba International Marketing Competition
1:00	388	Nuclear Effect: Small Town vs. Big Town
1:00	557	An Efficient Method for Isolating DNA from Marchantia Polymorpha
1:00	386	Sourisford Salamanders: Investigations into the Ideological Components Surrounding the Salamander Iconography of the Devils Lake-Sourisford Ceramic Complex
1:00	563	A comparison of nitrogen-fixing species abundance on 3rd grade prairie restoration plots of different ages at the MSUM Regional Science Center
1:00	383	Disc Degeneration
1:00	607	Breast Cancer & Smoking: What's the Connection?
1:00	380	Meningitis
1:00	610	Minority Health: Reproductive Health Disparities for Hispanics. What are they & Can they be Reduced?
1:00	611	Cost & Benefits of Newborn Screenings: Are Changes Needed?
1:00	613	HPV: Dispelling the Myths
1:00	616	The Effect of Emotionality on Artistic Readings
1:00	619	Domestic Violence: Who is to Blame?
1:00	620	Analysis of the Orwell Site
1:00	622	Urban Developers
1:00	373	Personality Traits and Attention: How do you measure up?
1:00	387	The Effects of Sociocultural Influences on Male Body Image and Muscle-Building Techniques
1:00	531	Health Care and Advertising
1:00	501	Sixth Grade Geometry Lesson
1:00	498	Color Image Analysis Software
1:00	556	Euthanasia
1:00	521	Use of the Electron Microprobe to characterize lithic and ceramic fragments from regional archaeological sites
1:00	496	Common Sense worth Teaching Your Kids ... "Exercise Equals Good Health"
1:00	410	How can vegetarianism improve environmental health?
1:00	499	Is Mitochondrial Inheritance Tissue Specific? An Investigation into Modes of mtDNA Inheritance in Wild Type and Inbred Strains of Mice.
1:00	527	Newborn Screenings: Are changes needed to benefit society?
1:00	516	A Non-Radioactive Assay to Determine Isoform Activation of PLD by Phenylephrine in CCL39 Cells
1:00	490	Effects of a Nuclear Weapon
1:00	538	The effects of a nuclear explosion over the Fargo-Moorhead area
1:00	488	Research Proposal: Chemical Alarm Cues in Cannibalsim Avoidance in Northern Pike, Esox lucius
1:00	486	Research Proposal: Do the club cells in minnows have a secondary UV radiation protection function?
1:00	484	Having Students Do Hands-On Work as Opposed to Simply Following Instructions Improves



		Their Comprehension on the Subject
1:00	482	Spectral Analysis
1:00	413	Wild Turkey Distribution and Urban Human/Turkey Interactions Along the Red River Valley in Northwestern Minnesota
1:00	414	Migraine: Not Just a Headache
1:00	478	History of Usenet
<b>Session 2</b>		
2:30	379	Multiple Sclerosis
2:30	417	Apraxia of speech
2:30	384	Software Development Life Cycle (SDLC) and its Documentation
2:30	396	Willingness to forgive another person after an apology
2:30	389	The Cultural and Health Implications of Diet Pills
2:30	391	Effect of Nuclear Explosion over Two Cities
2:30	425	Academic Service-Learning
2:30	424	Impact of brook stickleback on aquatic macroinvertebrates in an artificial wetland
2:30	394	Experimental Use of Radiotelemetry to Track Movements of Painted Turtles ( <i>Chrysemys picta bellii</i> ) in Clay County, Minnesota
2:30	402	Maverick Construction, Inc.
2:30	419	Maturity Onset Diabetes of the Young (MODY)
2:30	400	Phenylephrine Stimulates Cell Migration through Phospholipase D Isoform 1 and not Isoform 2
2:30	415	The Effects of Testosterone on Autonomic Control of the Cardiovascular System and the Capacity to Produce Adenosine in the Copenhagen Strain of Rats
2:30	398	Our Time to Shine: Reaccreditation 2007
2:30	421	My Medical Missions Trip to Nicaragua
2:30	399	Does Having Students Design and Create a Physiology Laboratory Exercise Examining the Cardiac electrocardiogram Improve Student Learning outcomes in Physiology.
2:30	409	Devastating Effects of Nuclear Explosions on our home towns.
2:30	595	Capstone Building Group - Tri-College Gateway Building
2:30	437	Perceived Success-failure and its effect on future memory task performance
2:30	534	Benefits and Consequences to Hormone Replacement Therapy
2:30	477	The Cents of Mental Health
2:30	536	Research Proposal: Chemical alarm cues released by different species of fish in their excrement, relating to prey detection and response.
2:30	539	The Real Scorpion King
2:30	555	Sprunk: A Prehistoric Site on the Northeastern Plains
2:30	560	MSUM Recycling Assessment
2:30	562	Sexual Dimorphism in the Common Green Darner
2:30	625	An investigation into the onset of the abiotic induction of systemic acquired resistance (SAR) in plants.
2:30	528	A Comparison of Morphological and Genetic Variation Among Four Local Populations of Big Bluestem ( <i>Andropogon gerardii</i> )
2:30	571	Blood Pressure and Membrane Fluidity or Hypertensive and Normotensive Rats Treated with Antioxidants
2:30	530	?-1 Adrenergic Activation of ERK by Phospholipase D is Ras Dependant
2:30	596	Hangar Hockey Arena - Capstone Construction Management
2:30	602	Milikan's Oil Drop Experiment
2:30	605	How Much is Too Much: The Effects on the Body
2:30	606	The Role of Fiber in Preventing and Treating Diseases
2:30	608	Does School Diet Affect School Performance?
2:30	609	Exercise Considerations for Diabetes
2:30	612	The History, Prevalence, and Contributing Factors of the Female Athlete Triad
2:30	615	Correlations of Complexity, Liking, and Interestingness with Artistic Ratings
2:30	621	DW Construction - Checkers Home & Lumber
2:30	623	Creighton Construction/Jimmy Johns Gourmet Sandwich Shop
2:30	570	The Effect of Exercise on Mood
2:30	547	Anti-Predator Behavior in Response to Chemical Cues in <i>Umbra limi</i>
2:30	457	The social and health problem of domestic violence

- 2:30 458 The Role of Oxidative Stress in maternal mtDNA Inheritance.
- 2:30 470 White Cloud Response to Skin Extract Treated With Protease
- 2:30 473 Regulation of ERK, Stress Fiber Formation, and NHE in CCL39 Fibroblasts by Urokinase Plasminogen Activator.
- 2:30 445 The Effects of Nuclear Bombs on Two Locations
- 2:30 443 Sound the alarm: Releaser-induced predator-recognition learning using conspecific alarm cues to associate predation risk with an artificial auditory stimulus
- 2:30 535 Shoal response to alarm stimulus in dynamic fluid environment
- 2:30 438 Small Mammal Response to Red Fox (*Vulpes vulpes*) and Raccoon (*Procyon lotor*) Urine
- 2:30 526 Using Gel Electrophoresis to Tell if Corn Chips are Made From Genetically Modified Corn
- 2:30 456 Want a Healthier Life? Get Married
- 2:30 544 PLD Involvement in NHE Activator, Actin Contraction, Cellular Migration and Invasion.
- 2:30 503 Habitat Use by Tree Squirrels in a Western Minnesota Woodlot
- 2:30 479 Tessa Terrace Town Homes Development Project
- 2:30 624 Sugar Sweet Estates
- 2:30 481 Strain-Counterstrain Manual Therapy
- 2:30 485 Research Proposal: Effects of UV Radiation on the DNA of Local Liverwort, *Marchantia polymorpha*, Populations
- 2:30 491 Ethical Optimality
- 2:30 494 Blackbody Spectroscopy
- 2:30 515 Nuclear Weapon Detonation
- 2:30 517 Population Genetic Structure and the Importance of Sex in a Thallose Liverwort: DNA Fingerprinting with ISSRs.
- 2:30 522 Having students build a model of the cardiovascular system enhances comprehension of difficult concepts in physiology.
- 2:30 507 Research Proposal : Changes in vascular plant species composition over a 26-year period on a managed tall-grass prairie.

• **Underground**

**Session 1**

- 1:00 601 IH vs. John Deere: A Study of a Farmer's Decision
- 1:00 600 The Midwest Migrant Farmworker: A Creative Project
- 1:00 598 The Third Grade Project: The Importance of an Emotional Impact on Learning
- 1:00 599 Defining Success through means of Photography

**Session 2**

- 2:30 431 From Draft To Workshop: Choices Made During The Writing Process

# Alphabetical List Of Presenters

Last Name	First Name	Presentation Title	Room	Time
Pandey	Deepesh	415 The Effects of Testosterone on Autonomic Control of the Cardiovascular System and the Capacity to Produce Adenosine in the Copenhagen Strain of Rats	Main Lounge	2:30
Alishouse	James	593 The Development of a Novel Drug for Cancer Therapy	227	1:00
Allickson	Bryce	408 Tommy John Injury/Surgery	203	1:00
Altermatt	Sarah	383 Disc Degeneration	Main Lounge	1:00
Anderson	Rachel	624 Sugar Sweet Estates	Main Lounge	2:30
Anderson	Brittany	456 Want a Healthier Life? Get Married	Main Lounge	2:30
Arnold	Crystal	528 A Comparison of Morphological and Genetic Variation Among Four Local Populations of Big Bluestem ( <i>Andropogon gerardii</i> )	Main Lounge	2:30
Asplin	Breanna	607 Breast Cancer & Smoking: What's the Connection?	Main Lounge	1:00
Babasheva	Yuliya	409 Devastating Effects of Nuclear Explosions on our home towns.	Main Lounge	2:30
Baker	Amy	603 One Night In Bangkok: Sex Trafficking	216	2:30
Bakewicz	Rebekah	372 An Analytical View of the Relationship between Religion and the Concept of Human Rights: A United States Perspective	Library	1:40
Bakko	Matthew	497 The Battle Over Our Sexual Intelligence: An Exploration of Various Methods of Sex Education with a Focus on Abstinence-Only Education Deficiencies	203	1:40
Bard	David	474 The Last Philosopher: Marquis de Condorcet and the Enlightenment	121	1:20
Barret	Lucy	520 Red Lake Nation Tribal Enrollment	Library Instruction Rm. 208	2:00
Beard	Jessica	514 Soil Separates for Magnetic Analyses of Archaeological Soils	Main Lounge	1:00
Beard	Jessica	505 Reading the MSUM Landscape: Images of Power	Kise Line D	1:00
Beaudoin	Samuel	554 Russian Enlightenment through the effort of Catherine the Great	101	1:20
Bender	Anita	505 Reading the MSUM Landscape: Images of Power	Kise Line D	1:00
Benson	Megan	610 Minority Health: Reproductive Health Disparities for Hispanics. What are they & Can they be Reduced?	Main Lounge	1:00
Berg	Roxanne	572 Writers Against Their Times	227	2:00
Berg	Jonathon	624 Sugar Sweet Estates	Main Lounge	2:30

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Last Name	First Name	Presentation Title	Room	Time
Besemer	Calliegh	598 The Third Grade Project: The Importance of an Emotional Impact on Learning	Underground	1:00
Beukelman	Adam	595 Capstone Building Group - Tri-College Gateway Building	Main Lounge	2:30
Bhatta	Anil	528 A Comparison of Morphological and Genetic Variation Among Four Local Populations of Big Bluestem ( <i>Andropogon gerardii</i> )	Main Lounge	2:30
Bickle	Joseph	571 Blood Pressure and Membrane Fluidity or Hypertensive and Normotensive Rats Treated with Antioxidants	Main Lounge	2:30
Binstock	Char	526 Using Gel Electrophoresis to Tell if Corn Chips are Made From Genetically Modified Corn	Main Lounge	2:30
Blaine	Amy	489 Student Led IEP Meetings	203	2:50
Blanco	Sergio	446 The Ups and Downs of Science	200A	2:30
Blue	Charlys	520 Red Lake Nation Tribal Enrollment	Library Instruction Rm. 208	2:00
Boardman	Jerra	534 Benefits and Consequences to Hormone Replacement Therapy	Main Lounge	2:30
Boltjes	Jill	592 Color Inversion and Detail Effects on Face Recognition	227	2:50
Borden-King-Jones	Christine	439 Situated cognition and Peer Learning Environments between Students From Different Cultural Backgrounds	Main Lounge	1:00
Borden-King-Jones	Timothy	491 Ethical Optimality	Main Lounge	2:30
Borden-King-Jones	Timothy	493 Piracy and the Importance of Abandonware	203	2:30
Bothum	Jessica R.	438 Small Mammal Response to Red Fox ( <i>Vulpes vulpes</i> ) and Raccoon ( <i>Procyon lotor</i> ) Urine	Main Lounge	2:30
Bouman	Kristen	409 Devastating Effects of Nuclear Explosions on our home towns.	Main Lounge	2:30
Brandt	Alex	433 Black Powder Rocket Motor Construction and Impulse Testing	Main Lounge	1:00
Brandt	Alex	498 Color Image Analysis Software	Main Lounge	1:00
Brandvold	Kristopher	571 Blood Pressure and Membrane Fluidity or Hypertensive and Normotensive Rats Treated with Antioxidants	Main Lounge	2:30
Brewer	Chris	406 Effective Deployment of Irrigation Systems	207	1:40
Brouse	Matthew	609 Exercise Considerations for Diabetes	Main Lounge	2:30
Buer	Tim	424 Impact of brook stickleback on aquatic macroinvertebrates in an artificial wetland	Main Lounge	2:30

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Last Name	First Name	Presentation Title	Room	Time
Campbell	Jessica	438 Small Mammal Response to Red Fox (Vulpes vulpes) and Raccoon (Procyon lotor) Urine	Main Lounge	2:30
Canine	Jenny	568 Stress Fiber Formation is Essential for Cellular Migration in Chinese Hamster Lung Fibroblasts	Main Lounge	1:00
Card	Brian	391 Effect of Nuclear Explosion over Two Cities	Main Lounge	2:30
Carlson	Jasmine	435 Relationship Between Size of Adult Female Painted Turtles (Chrysemys picta bellii) and Numbers of Younger Turtles in Two Sloughs in Clay County, MN	Main Lounge	1:00
Carvell	Kelsey	512 The physics of using your head in a game of soccer	101	1:00
Casper	William	433 Black Powder Rocket Motor Construction and Impulse Testing	Main Lounge	1:00
Caspers	Mike	406 Effective Deployment of Irrigation Systems	207	1:40
Caspers	Mike	482 Spectral Analysis	Main Lounge	1:00
Chang	Eun Hyuk	517 Population Genetic Structure and the Importance of Sex in a Thallose Liverwort: DNA Fingerprinting with ISSRs.	Main Lounge	2:30
Chisholm	Travis	560 MSUM Recycling Assessment	Main Lounge	2:30
Clapp	Andrew	485 Research Proposal: Effects of UV Radiation on the DNA of Local Liverwort, Marchantia polymorpha, Populations	Main Lounge	2:30
Clements	Mariah	528 A Comparison of Morphological and Genetic Variation Among Four Local Populations of Big Bluestem (Andropogon gerardii)	Main Lounge	2:30
Clementson	Teri	395 Battles, Ethical and Religious aspects relating to assisted suicide and euthanasia	Main Lounge	1:00
Cloos	Jesse	605 How Much is Too Much: The Effects on the Body	Main Lounge	2:30
Cole	Kimberly	588 Race and Crime: Prejudice or Coincidence?	218	3:30
Conduah	Charles	407 Temperature Modeling	121	1:00
Coombs-Dewey	Darcie	404 Irrigation System	Library Instruction Rm. 208	1:00
Cota	Avery	521 Use of the Electron Microprobe to characterize lithic and ceramic fragments from regional archaeological sites	Main Lounge	1:00
Curley	Laura	542 Female Athlete Triad	121	2:00
Dahlager	Ben	621 DW Construction - Checkers Home & Lumber	Main Lounge	2:30
Damm	Kellan	560 MSUM Recycling Assessment	Main Lounge	2:30

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<b>Last Name</b>	<b>First Name</b>	<b>Presentation Title</b>	<b>Room</b>	<b>Time</b>
Danbom	Liz	390 Manitoba International Marketing Competition	Main Lounge	1:00
Daniels	James	579 The Sugar Beet Industry in North Dakota and Minnesota	216	1:00
DaPisa	Megan	398 Our Time to Shine: Reaccreditation 2007	Main Lounge	2:30
Davis	Stacy	396 Willingness to forgive another person after an apology	Main Lounge	2:30
Decker	Paul	511 Sexual Size Dimorphism & Optimal Life History Strategies in Common Green Darners	Main Lounge	1:00
Decker	Paul	507 Research Proposal : Changes in vascular plant species composition over a 26-year period on a managed tall-grass prairie.	Main Lounge	2:30
Dennison	Rory	463 Seventh Centruy Silk Road from the Jade Gate to Turfan: With Reference to Xuanzang's Travels	207	2:50
Devorak	Joseph	536 Research Proposal: Chemical alarm cues released by different species of fish in their excrement, relating to prey detection and response.	Main Lounge	2:30
DiCosimo	Alisha	459 Reading the MSUM Landscapes: Student Dormitories: Do they lend judgement and feeling to the college experience?	Kise Line D	1:00
Dix	Jeff	572 Writers Against Their Times	227	2:00
Duncan	Brooke	606 The Role of Fiber in Preventing and Treating Diseases	Main Lounge	2:30
Dunkirk	Stephanie	559 How to Choose Appropriate Vocal Repetoire.	227	1:40
Dustin	Paul	560 MSUM Recycling Assessment	Main Lounge	2:30
Duval	Matthew	469 The Effect of a 150 kT Nuclear Weapon on Sabin, MN	Main Lounge	1:00
Duval	Matthew	530 &#945;-1 Adrenergic Activation of ERK by Phospholipase D is Ras Dependant	Main Lounge	2:30
Ecklund	Micki	525 Pump Me Up: the Physics of Pressure	200C	2:30
Eklund	Chad	622 Urban Developers	Main Lounge	1:00
Engquist	Jen	440 Suubi and a muzungu: learning from AIDS orphans in East Africa	Library Instruction Rm. 208	3:30
Engst	Jenny	379 Multiple Sclerosis	Main Lounge	2:30
Enniful	Shirley-Nita	619 Domestic Violence: Who is to Blame?	Main Lounge	1:00
Entzminger	Mike	446 The Ups and Downs of Science	200A	2:30

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Last Name	First Name	Presentation Title	Room	Time
Erickson	Josh	411 Public International Law and the War in Iraq	Library Instruction Rm. 208	3:10
Failing	Christopher	399 Does Having Students Design and Create a Physiology Laboratory Exercise Examining the Cardiac electrocardiogram Improve Student Learning outcomes in Physiology.	Main Lounge	2:30
Feirer	Molly	445 The Effects of Nuclear Bombs on Two Locations	Main Lounge	2:30
Ferguson	Stacy	589 Teaching Philosophies of Tomorrow's Art Educators	205	3:30
Flick	Timothy	426 Hydrogen from Hydrogen Peroxide: A Solar Assisted Pathway to Economical Hydrogen Production?	208	2:00
Folingstad	Arick	405 Fairness of Major League Baseball Fields	205	1:20
Fonseth	Bill	576 How in Heaven's Name Do We Deal with Conservative Christians?	218	2:30
Forde	Jill	468 Reproductive and Sexual Rights of Women	205	1:00
Fox	Peter	615 Correlations of Complexity, Liking, and Interestingness with Artistic Ratings	Main Lounge	2:30
Fox	Peter	616 The Effect of Emotionality on Artistic Readings	Main Lounge	1:00
Fraser	Bernard	602 Milikan's Oil Drop Experiment	Main Lounge	2:30
Frazier	Jake	623 Creighton Construction/Jimmy Johns Gourmet Sandwich Shop	Main Lounge	2:30
Freudenrich	Scott	624 Sugar Sweet Estates	Main Lounge	2:30
Froslic	Alyson	397 Female Labor Force Participation: A Cross-Sectional Study of Major US Cities	205	2:50
Fuentes	Evelyn	484 Having Students Do Hands-On Work as Opposed to Simply Following Instructions Improves Their Comprehension on the Subject	Main Lounge	1:00
Gable	Diana	573 Voices of Women from the Fringes	227	3:30
Garaas	Shaina	504 Shocking Science	200B	2:30
Garcia	Sylvia	600 The Midwest Migrant Farmworker: A Creative Project	Underground	1:00
Garman	Scott	597 Strategies for Various Learning Needs	227	2:30
Gaukler	Shannon	435 Relationship Between Size of Adult Female Painted Turtles ( <i>Chrysemys picta bellii</i> ) and Numbers of Younger Turtles in Two Sloughs in Clay County, MN	Main Lounge	1:00
Gaukler	Shannon	438 Small Mammal Response to Red Fox ( <i>Vulpes vulpes</i> ) and Raccoon ( <i>Procyon lotor</i> ) Urine	Main Lounge	2:30

*Numbers correspond with abstract listings beginning on page 38*

Last Name	First Name	Presentation Title	Room	Time
Geray	Katie	413 Wild Turkey Distribution and Urban Human/Turkey Interactions Along the Red River Valley in Northwestern Minnesota	Main Lounge	1:00
Gibson	Danfee	443 Sound the alarm: Releaser-induced predator-recognition learning using conspecific alarm cues to associate predation risk with an artificial auditory stimulus	Main Lounge	2:30
Giwa	Temie	564 "Give us something to eat" Famine and Hunger in the world	216	2:50
Glander	Brittannie	617 Create Mandarin Dress from Flat Pattern Method	216	1:20
Gracyk	Tatiana	563 A comparison of nitrogen-fixing species abundance on 3rd grade prairie restoration plots of different ages at the MSUM Regional Science Center	Main Lounge	1:00
Grineski	Abby	421 My Medical Missions Trip to Nicaragua	Main Lounge	2:30
Gruber	Natasha	394 Experimental Use of Radiotelemetry to Track Movements of Painted Turtles ( <i>Chrysemys picta bellii</i> ) in Clay County, Minnesota	Main Lounge	2:30
Gruber	Natasha	413 Wild Turkey Distribution and Urban Human/Turkey Interactions Along the Red River Valley in Northwestern Minnesota	Main Lounge	1:00
Guajardo	Pablo	587 Regional Human Rights Regimes: An Examination of 3 Established, Western Governmental Organizations	214	2:30
Guenther	Brett	390 Manitoba International Marketing Competition	Main Lounge	1:00
Gullingsrud	Amber	459 Reading the MSUM Landscapes: Student Dormitories: Do they lend judgement and feeling to the college experience?	Kise Line D	1:00
Gurung	Ananda	476 U.S. Automobile Industry	207	2:30
Gurung	Deshna	415 The Effects of Testosterone on Autonomic Control of the Cardiovascular System and the Capacity to Produce Adenosine in the Copenhagen Strain of Rats	Main Lounge	2:30
Hagen	Joel	431 From Draft To Workshop: Choices Made During The Writing Process	Underground	2:30
Hairgrove	Kenna	517 Population Genetic Structure and the Importance of Sex in a Thallose Liverwort: DNA Fingerprinting with ISSRs.	Main Lounge	2:30
Hairgrove	Kenna	424 Impact of brook stickleback on aquatic macroinvertebrates in an artificial wetland	Main Lounge	2:30
Hairgrove	Kenna	519 Investigating Asexual Fitness in <i>Utricularia vulgaris</i>	Main Lounge	1:00
Hammond	Wendy	583 Iris Murdoch's 'A Severed Head': Neoplatonic Severance of the Head from the Body	214	3:10

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Last Name	First Name	Presentation Title	Room	Time
Hasbargen	Jennifer	431 From Draft To Workshop: Choices Made During The Writing Process	Underground	2:30
Haugen	Amber	563 A comparison of nitrogen-fixing species abundance on 3rd grade prairie restoration plots of different ages at the MSUM Regional Science Center	Main Lounge	1:00
Hausauer	Jessica	531 Health Care and Advertising	Main Lounge	1:00
Hawes	Mike	414 Migraine: Not Just a Headache	Main Lounge	1:00
Head	Mary	520 Red Lake Nation Tribal Enrollment	Library Instruction Rm. 208	2:00
Hegge	Elizabeth	449 Image Quality of X-Rays	Main Lounge	1:00
Hegge	Elizabeth	482 Spectral Analysis	Main Lounge	1:00
Heiberg	Jessica	478 History of Usenet	Main Lounge	1:00
Heiberg	Jessica	472 Darfur: Is it Genocide?	121	1:40
Heinz	Blake	400 Phenylephrine Stimulates Cell Migration through Phospholipase D Isoform 1 and not Isoform 2	Main Lounge	2:30
Hektner	Lateesha	435 Relationship Between Size of Adult Female Painted Turtles ( <i>Chrysemys picta bellii</i> ) and Numbers of Younger Turtles in Two Sloughs in Clay County, MN	Main Lounge	1:00
Hektner	Lateesha	394 Experimental Use of Radiotelemetry to Track Movements of Painted Turtles ( <i>Chrysemys picta bellii</i> ) in Clay County, Minnesota	Main Lounge	2:30
Helm	Alissa	467 Dramatism and George W. Bush's September Eleventh Address	214	1:20
Hempeck	Stashenko	431 From Draft To Workshop: Choices Made During The Writing Process	Underground	2:30
Hensch	Danielle	428 Making Proportions Simple.	Library Porch	2:30
Herges	Amanda	616 The Effect of Emotionality on Artistic Readings	Main Lounge	1:00
Herges	Amanda	373 Personality Traits and Attention: How do you measure up?	Main Lounge	1:00
Herges	Amanda	615 Correlations of Complexity, Liking, and Interestingness with Artistic Ratings	Main Lounge	2:30
Herseth	Michael	622 Urban Developers	Main Lounge	1:00
Hingley	Christine	431 From Draft To Workshop: Choices Made During The Writing Process	Underground	2:30
Hopkins	Ian	548 Rhetorical Criticism Analysis: The Sinking of the Kursk: A Criticism on Russian Power	101	1:40

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Last Name	First Name	Presentation Title	Room	Time
Hostetter	Jennifer	563 A comparison of nitrogen-fixing species abundance on 3rd grade prairie restoration plots of different ages at the MSUM Regional Science Center	Main Lounge	1:00
Howell	Nick	433 Black Powder Rocket Motor Construction and Impulse Testing	Main Lounge	1:00
Isaacson	Lee	577 Economic and Social Consequences of the Mounting US Debt	218	1:40
Ishizuka	Hajime	401 Sino-U.S Detente 1972	205	2:30
Jackson	Robert	504 Shocking Science	200B	2:30
Jagol	Liz	563 A comparison of nitrogen-fixing species abundance on 3rd grade prairie restoration plots of different ages at the MSUM Regional Science Center	Main Lounge	1:00
Janssen	Nick	402 Maverick Construction, Inc.	Main Lounge	2:30
Jarolimek	Allison	583 Iris Murdoch's 'A Severed Head': Neoplatonic Severance of the Head from the Body	214	3:10
Job	Jayne	386 Sourisford Salamanders: Investigations into the Ideological Components Surrounding the Salamander Iconography of the Devils Lake-Sourisford Ceramic Complex	Main Lounge	1:00
Johnson	Becky	510 The Use of Child Soldiers: The Colombian Experience	101	2:50
Johnson	Suzanne	586 Will Social Security be There for You?	207	3:30
Johnson	Chris	541 Formation of Nanophase Metals in Quenched Silicate Glass	Main Lounge	1:00
Johnson	Lindsay	570 The Effect of Exercise on Mood	Main Lounge	2:30
Johnson	Lindsay	455 What Can Nonwords Tell Us About the Role of Sound and Spelling in Spoken Word Recognition?	Main Lounge	1:00
Johnson	Chuck	486 Research Proposal: Do the club cells in minnows have a secondary UV radiation protection function?	Main Lounge	1:00
Johnson	Ben	593 The Development of a Novel Drug for Cancer Therapy	227	1:00
Johnson	Sarah	566 The Cents fo Mental Health	Main Lounge	1:00
Johnson, Jr	Frank	458 The Role of Oxidative Stress in maternal mtDNA Inheritance.	Main Lounge	2:30
Johnsrud	Sara	390 Manitoba International Marketing Competition	Main Lounge	1:00
Joos	Andrew	622 Urban Developers	Main Lounge	1:00
Jorgenson	Jessica	573 Voices of Women from the Fringes	227	3:30

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Last Name	First Name	Presentation Title	Room	Time
Karst	Justin	547 Anti-Predator Behavior in Response to Chemical Cues in Umbra limi	Main Lounge	2:30
Karst	Justin	470 White Cloud Response to Skin Extract Treated With Protease	Main Lounge	2:30
Katti	Nandini	523 Can You Hear Me Now? The Science of Sound	Kise Line D	2:30
Kelly	Erin	589 Teaching Philosophies of Tomorrow's Art Educators	205	3:30
Kjos	Ashley	615 Correlations of Complexity, Liking, and Interestingness with Artistic Ratings	Main Lounge	2:30
Kjos	Ashley	616 The Effect of Emotionality on Artistic Readings	Main Lounge	1:00
Knutson	Scott	479 Tessa Terrace Town Homes Development Project	Main Lounge	2:30
Koepplin	Mindi	402 Maverick Construction, Inc.	Main Lounge	2:30
Kramer	Margo	513 A Research Proposal: Space Utilization by Sympatric Tree Squirrel Species in a Western Minnesota Woodlot	Main Lounge	1:00
Kramer	Cassandra	528 A Comparison of Morphological and Genetic Variation Among Four Local Populations of Big Bluestem (Andropogon gerardii)	Main Lounge	2:30
Kramer	Margo	435 Relationship Between Size of Adult Female Painted Turtles (Chrysemys picta bellii) and Numbers of Younger Turtles in Two Sloughs in Clay County, MN		
Krutsinger	Jen	441 Geophysics: New Prospects in Non-destructive Archaeology	208	3:10
Kverno	Micara	387 The Effects of Sociocultural Influences on Male Body Image and Muscle-Building Techniques	Main Lounge	1:00
Ladd	Hallie	413 Wild Turkey Distribution and Urban Human/Turkey Interactions Along the Red River Valley in Northwestern Minnesota	Main Lounge	1:00
Ladd	Hallie	435 Relationship Between Size of Adult Female Painted Turtles (Chrysemys picta bellii) and Numbers of Younger Turtles in Two Sloughs in Clay County, MN	Main Lounge	1:00
Ladd	Hallie	424 Impact of brook stickleback on aquatic macroinvertebrates in an artificial wetland	Main Lounge	2:30
Landie	Rebecca	420 Assessing genetic diversity of Pimephales promelas using PCR-based microsatellite analysis and capillary electrophoresis analysis	Main Lounge	1:00
Landscoot	Amber	604 How Significant is the issue of Date Rape Drugs as a Precipitating Factor in Sexual Assault?	Main Lounge	1:00
Lang	Jen	392 Methicillin-Resistant Staphylococcus Aureus	Main Lounge	1:00
Langer	Jason	370 Multiplication Made Easy	Library Porch	1:00

Numbers correspond with abstract listings beginning on page 38

Last Name	First Name	Presentation Title	Room	Time
Larson	Matt	407 Temperature Modeling	121	1:00
Larson	Jara	489 Student Led IEP Meetings	203	2:50
Larson	Ross	394 Experimental Use of Radiotelemetry to Track Movements of Painted Turtles ( <i>Chrysemys picta bellii</i> ) in Clay County, Minnesota	Main Lounge	2:30
Larson	Julie	416 Xenoestrogens: Environmental Politics Playing Out on the Human Body	203	3:30
Larson	Anthony	521 Use of the Electron Microprobe to characterize lithic and ceramic fragments from regional archaeological sites	Main Lounge	1:00
Larson	Ross	435 Relationship Between Size of Adult Female Painted Turtles ( <i>Chrysemys picta bellii</i> ) and Numbers of Younger Turtles in Two Sloughs in Clay County, MN	Main Lounge	1:00
Lawson	Daniel	405 Fairness of Major League Baseball Fields	205	1:20
Lee	Jack	626 Where's Jazz?	Library Porch	2:00
Lehner	Natalie	524 Now I See the Light!	200D	3:00
Leitch	Maraigh	441 Geophysics: New Prospects in Non-destructive Archaeology	208	3:10
Leiteh	Maraigh	614 Reading the MSUM Landscape: The Monumental and the Vernacular	Kise Line D	1:00
Lien	Eric	402 Maverick Construction, Inc.	Main Lounge	2:30
Louden	Nick	437 Perceived Success-failure and its effect on future memory task performance	Main Lounge	2:30
Lubenow	Kaven	394 Experimental Use of Radiotelemetry to Track Movements of Painted Turtles ( <i>Chrysemys picta bellii</i> ) in Clay County, Minnesota	Main Lounge	2:30
Lubitz	Brittany	501 Sixth Grade Geometry Lesson	Main Lounge	1:00
Lunski	Josh	511 Sexual Size Dimorphism & Optimal Life History Strategies in Common Green Darners	Main Lounge	1:00
Maanum	Kari	380 Meningitis	Main Lounge	1:00
Magstadt	Lisa	473 Regulation of ERK, Stress Fiber Formation, and NHE in CCL39 Fibroblasts by Urokinase Plasminogen Activator.	Main Lounge	2:30
Magstadt	Lisa	499 Is Mitochondrial Inheritance Tissue Specific? An Investigation into Modes of mtDNA Inheritance in Wild Type and Inbred Strains of Mice.	Main Lounge	1:00

*Numbers correspond with abstract listings beginning on page 38*

Last Name	First Name	Presentation Title	Room	Time
Mahanna	Marissa	495 Reproductive Rights: the protection and violations against the basic human right of reproduction.	101	2:30
Malik	Asphand	565 Big Pharma and Cheated Americans - Why Do Life Saving Drugs Cost So Much?	216	2:00
Markert	Cory	451 Economic Analysis of the Recording Industry	208	2:30
Martin	Pam	520 Red Lake Nation Tribal Enrollment	Library Instruction Rm. 208	2:00
Martin	Nancy	405 Fairness of Major League Baseball Fields	205	1:20
Masters	Christina	616 The Effect of Emotionality on Artistic Readings	Main Lounge	1:00
Masters	Christina	615 Correlations of Complexity, Liking, and Interestingness with Artistic Ratings	Main Lounge	2:30
Matson	Brian	376 The Impeachment and Trial of Warren Hastings	207	1:00
Matzke	Laura	420 Assessing genetic diversity of <i>Pimephales promelas</i> using PCR- based microsatellite analysis and capillary electrophoresis analysis	Main Lounge	1:00
Mavis	Jessica	412 Geometric Rulers	Library Instruction Rm. 208	2:50
Maxwell	Collette	520 Red Lake Nation Tribal Enrollment	Library Instruction Rm. 208	2:00
McFadden	Justin	523 Can You Hear Me Now? The Science of Sound	Kise Line D	2:30
McLain	Elizabeth	563 A comparison of nitrogen-fixing species abundance on 3rd grade prairie restoration plots of different ages at the MSUM Regional Science Center	Main Lounge	1:00
Mejova	Yelena	384 Software Development Life Cycle (SDLC) and its Documentation	Main Lounge	2:30
Meland	Ben	623 Creighton Construction/Jimmy Johns Gourmet Sandwich Shop	Main Lounge	2:30
Melting	Kristi	390 Manitoba International Marketing Competition	Main Lounge	1:00
Metelmann	Ashley	428 Making Proportions Simple.	Library Porch	2:30
Michel	Barbara	526 Using Gel Electrophoresis to Tell if Corn Chips are Made From Genetically Modified Corn	Main Lounge	2:30
Michel	Barbara	563 A comparison of nitrogen-fixing species abundance on 3rd grade prairie restoration plots of different ages at the MSUM Regional Science Center	Main Lounge	1:00
Mick	Chelsea	611 Cost & Benefits of Newborn Screenings: Are Changes Needed?	Main Lounge	1:00

*Numbers correspond with abstract listings beginning on page 38*

Last Name	First Name	Presentation Title	Room	Time
Mick	Chelsea Mick	527 Newborn Screenings: Are changes needed to benefit society?	Main Lounge	1:00
Mihal	Emilie	479 Tessa Terrace Town Homes Development Project	Main Lounge	2:30
Miller	Stacey	562 Sexual Dimorphism in the Common Green Darner	Main Lounge	2:30
Miller	Stacey	547 Anti-Predator Behavior in Response to Chemical Cues in <i>Umbra limi</i>	Main Lounge	2:30
Miller	Jeff	470 White Cloud Response to Skin Extract Treated With Protease	Main Lounge	2:30
Miller	Jeffrey	562 Sexual Dimorphism in the Common Green Darner	Main Lounge	2:30
Miller	Stacey	470 White Cloud Response to Skin Extract Treated With Protease	Main Lounge	2:30
Miller	Jeff	547 Anti-Predator Behavior in Response to Chemical Cues in <i>Umbra limi</i>	Main Lounge	2:30
Moes	Jill	420 Assessing genetic diversity of <i>Pimephales promelas</i> using PCR- based microsatellite analysis and capillary electrophoresis analysis	Main Lounge	1:00
Mooney	Tom	602 Milikan's Oil Drop Experiment	Main Lounge	2:30
Mooney	Tom	407 Temperature Modeling	121	1:00
Morris	Lee	591 Periodical Influence on Social Consciousness in Early 20th Century Literature	218	2:00
Morris	Lee	572 Writers Against Their Times	227	2:00
Mounsdon	Jennie	525 Pump Me Up: the Physics of Pressure	200C	2:30
Murnion	Jacqueline	603 One Night in Bangkok: Sex Trafficking	216	2:30
Myers	John	370 Multiplication Made Easy	Library Porch	1:00
Nagle	Barbara	589 Teaching Philosophies of Tomorrow's Art Educators	205	3:30
Nelson	Alexis	569 Factors that Influence Risk-Taking Decisions	Main Lounge	1:00
Nesheim	Timothy	558 Origin of Vesiculation in Lunar Mare Basalts	Main Lounge	1:00
Neuberger	Jenny	563 A comparison of nitrogen-fixing species abundance on 3rd grade prairie restoration plots of different ages at the MSUM Regional Science Center	Main Lounge	1:00
Nick	Nick	494 Blackbody Spectroscopy	Main Lounge	2:30
Nilson	Jon	515 Nuclear Weapon Detonation	Main Lounge	2:30
Nisbet	Karl	560 MSUM Recycling Assessment	Main Lounge	2:30

*Numbers correspond with abstract listings beginning on page 38*

Last Name	First Name	Presentation Title	Room	Time
Nolte	Todd	499 Is Mitochondrial Inheritance Tissue Specific? An Investigation into Modes of mtDNA Inheritance in Wild Type and Inbred Strains of Mice.	Main Lounge	1:00
Nordhougen	Melanie	623 Creighton Construction/Jimmy Johns Gourmet Sandwich Shop	Main Lounge	2:30
Nyhus	Cassie	575 Fraud in the Workplace	218	2:50
Obeng	Theresa	574 Credit Card Debt Among College Students	218	3:10
Oberoi	Amrinder (Monty)	565 Big Pharma and Cheated Americans - Why Do Life Saving Drugs Cost So Much?	216	2:00
Odden	Chelsea	589 Teaching Philosophies of Tomorrow's Art Educators	205	3:30
Olson	Robert	615 Correlations of Complexity, Liking, and Interestingness with Artistic Ratings	Main Lounge	2:30
Olson	Robert	616 The Effect of Emotionality on Artistic Readings	Main Lounge	1:00
Ottesen	Angela	608 Does School Diet Affect School Performance?	Main Lounge	2:30
Pabody	Jon	447 Ho Chi Minh - His Quest for the Independence of Vietnam	207	2:00
Patel	Neil	625 An investigation into the onset of the abiotic induction of systemic acquired resistance (SAR) in planta.	Main Lounge	2:30
Paulson	Erik	596 Hangar Hockey Arena - Capstone Construction Management	Main Lounge	2:30
Peterson	Joanne	432 Yung Wing and the First One Hundred Chinese Students In America	214	1:00
Pezeshk	Abbas	571 Blood Pressure and Membrane Fluidity or Hypertensive and Normotensive Rats Treated with Antioxidants	Main Lounge	2:30
Pfarr	Elisa	580 The Importance of Handedness for Females Solving Visual-Spatial Problems	Main Lounge	1:00
Pogatschnick	Julie	443 Sound the alarm: Releaser-induced predator-recognition learning using conspecific alarm cues to associate predation risk with an artificial auditory stimulus	Main Lounge	2:30
Poudyal	Nirmal Raj	584 Trade Imbalance Between USA and China, 1999 - 2005	216	3:10
Powers	Craig	466 EFolio	Main Lounge	1:00
Prahl	Christopher	578 NAFTA and its Effects on US Jobs	207	1:20
Prestegord	Heather	404 Irrigation System	Library Instruction Rm. 208	1:00
Puetz	Jeremy	479 Tessa Terrace Town Homes Development Project	Main Lounge	2:30
Radniecki	Melissa	524 Now I See the Light!	200D	3:00

Numbers correspond with abstract listings beginning on page 38

<b>Last Name</b>	<b>First Name</b>	<b>Presentation Title</b>	<b>Room</b>	<b>Time</b>
Rahman	Kathy	419 Maturity Onset Diabetes of the Young (MODY)	Main Lounge	2:30
Rasmussen	Adam	488 Research Proposal: Chemical Alarm Cues in Cannibalism Avoidance in Northern Pike, <i>Esox lucius</i>	Main Lounge	1:00
Reisdorf	Nicole	539 The Real Scorpion King	Main Lounge	2:30
Retterath	Andrea	462 Claude Debussy's Pelléas et Mélisande as a symbolist work	207	3:10
Riley	Lisa	589 Teaching Philosophies of Tomorrow's Art Educators	205	3:30
Rochel	Shawna	457 The social and health problem of domestic violence	Main Lounge	2:30
Rock	Jessie	541 Formation of Nanophase Metals in Quenched Silicate Glass	Main Lounge	1:00
Roers	Michelle	573 Voices of Women from the Fringes	227	3:30
Roseen	Eric	453 Building a Student Community with an Online Calendar and Interactive Events.	214	1:40
Rust	Courtney	592 Color Inversion and Detail Effects on Face Recognition	227	2:50
Ruter	Chris	601 IH vs. John Deere: A Study of a Farmer's Decision	Underground	1:00
Sang	Rachel	544 PLD Involvement in NHE Activation, Actin Contraction, Cellular Migration and Invasion.	Main Lounge	2:30
Savaloja	Rachel	470 White Cloud Response to Skin Extract Treated With Protease	Main Lounge	2:30
Schell	David	573 Voices of Women from the Fringes	227	3:30
Schlichting	Dustin	481 Strain-Counterstrain Manual Therapy	Main Lounge	2:30
Schneider	Joe	595 Capstone Building Group - Tri-College Gateway Building	Main Lounge	2:30
Schutt	Brad	413 Wild Turkey Distribution and Urban Human/Turkey Interactions Along the Red River Valley in Northwestern Minnesota	Main Lounge	1:00
Schwarz	Christina M.	480 Reading the MSUM Landscape: The Ideology of Campus Tours	Kise Line D	1:00
Segovia	Paul	561 Replacing Paper based Scheduling and Checkouts with a new Online Application	227	1:20
Segovia	Paul	453 Building a Student Community with an Online Calendar and Interactive Events.	214	1:40
Self	Patrick	535 Shoal response to alarm stimulus in dynamic fluid environment	Main Lounge	2:30

*Numbers correspond with abstract listings beginning on page 38*



Last Name	First Name	Presentation Title	Room	Time
Shakya	Merina	544 PLD Involvement in NHE Activaton, Actin Contraction, Cellular Migration and Invasion.	Main Lounge	2:30
Sharma	Karuna	582 Examining the Role of Exercise & Development on Mitochondrial Oxidative Stress	216	1:40
Shenk	Conor	431 From Draft To Workshop: Choices Made During The Writing Process	Underground	2:30
Shmyrev	Alexander	492 Improving Web Application Security	216	3:30
Skolness	Sarah	546 Developing Methods on the Beckman Coulter CEQ 8000 for Paternity Analysis to Understand Reproductive Behavior in Wild Population of Fathead Minnows ( <i>Pimephales promelas</i> )	101	2:00
Skolness	Sarah	538 The effects of a nuclear explosion over the Fargo-Moorhead area	Main Lounge	1:00
Sliwoski	David	415 The Effects of Testosterone on Autonomic Control of the Cardiovascular System and the Capacity to Produce Adenosine in the Copenhagen Strain of Rats	Main Lounge	2:30
Smith	jennifer	436 Synthesis of Porous Metal-Organic Frameworks containing Chiral Organic Ligands	Main Lounge	1:00
Smith	Brittany	438 Small Mammal Response to Red Fox ( <i>Vulpes vulpes</i> ) and Raccoon ( <i>Procyon lotor</i> ) Urine	Main Lounge	2:30
Steinhauer	Morea	599 Defining Success through means of Photography	Underground	1:00
Stockstad	Mandy	390 Manitoba International Marketing Competition	Main Lounge	1:00
Stoos	Kelsey M.	455 What Can Nonwords Tell Us About the Role of Sound and Spelling in Spoken Word Recognition?	Main Lounge	1:00
Stoos	Kelsey M.	430 Corporal Punishment: Right or Wrong?	205	1:40
Stowman	Gerri	533 Boundary Issues in Faculty-Student Relationships	101	3:30
Streitz	Lisa	400 Phenylephrine Stimulates Cell Migration through Phospholipase D Isoform 1 and not Isoform 2	Main Lounge	2:30
Stromberg	Kayla	589 Teaching Philosophies of Tomorrow's Art Educators	205	3:30
Stumbo	Tony	535 Shoal response to alarm stimulus in dynamic fluid environment	Main Lounge	2:30
Swier	Jason	390 Manitoba International Marketing Competition	Main Lounge	1:00
Swinson	April	448 What nuclear destruction may do to your small town.	Main Lounge	1:00
Taves	Jennifer	469 The Effect of a 150 kT Nuclear Weapon on Sabin, MN	Main Lounge	1:00

Numbers correspond with abstract listings beginning on page 38

# Abstracts

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**370**

**Title:** Multiplication Made Easy

**Presenter(s):** Jason Langer, John Myers

**Department:** Mathematics

**Advisor:** Geok Ng

**Abstract:** A fun and easy way to solve certain multiplication problems using mental math and a unique strategy.

**372**

**Title:** An Analytical View of the Relationship between Religion and the Concept of Human Rights: A United States Perspective

**Presenter(s):** Rebekah Bakewicz

**Department:** Political Science

**Advisor:** Andrew Conteh

**Abstract:** Human right discussions occupy the minds of many persons ranging from sociologists to anthropologists on one hand and on the other hand political scientists and lawyers. It is today recognized that human rights have their origins and sources in many areas of learning. This paper however, will use the theological approach to examine the relationship between religion and human rights. It will examine the significance of religion and human rights, discuss the arguments for and against the religious foundation of the idea of human rights, and will explore how the Christian religion, in particular, has both supported and opposed human rights ideas in the past. Finally this paper will conclude by highlighting the interdependency between religion and human rights.

**373**

**Title:** Personality Traits and Attention: How do you measure up?

**Presenter(s):** Amanda Herges

**Department:** Psychology

**Advisor:** Elizabeth Nawrot

**Abstract:** My poster will review prior research with respect to anxiety and its effects on attention. My poster will explain my hypothesis and procedures. My data and results will be represented in a figure or table. I will also display my analysis of the data and how it relates to previous research as well as ideas for future research.

**374**

**Title:** Essay on Faith and God's Essence

**Presenter(s):** Nathan Wood

**Department:** Philosophy

**Advisor:** Phil Mouch

**Abstract:** Throughout the centuries of philosophical inquiry there have been many definitions and justifications of faith. What role should it play in our everyday lives? How much should we let faith control our knowledge? In addition to these questions of faith we will also explore the seemingly ineffable subject of God's essence. Although this may seem a trivial or awfully presumptuous pursuit to some, hopefully, what I have to say will help provide a solution to the question what makes him God?

**376**

**Title:** The Impeachment and Trial of Warren Hastings

**Presenter(s):** Brian Matson

**Department:** History

**Advisor:** Henry Chan

**Abstract:** The impeachment and trial of Warren Hastings in 1787 was an event that divided British Government and exposed the corruptions present within the East India Company. Warren Hastings was accused of committing various "high crimes and misdemeanors" but in reality the trial focused more deeply on the battles brewing between the old and new ideologies of the era. The trial of Warren Hastings was not simply about a single man. It was a trial between the two very different ideological and political forces of the day.

**379**

**Title:** Multiple Sclerosis

**Presenter(s):** Jenny Engst

**Department:** Health and Physical Education

**Advisor:** Chris Huot

**Abstract:** Explain what is Multiple Sclerosis and the environmental causes that can trigger the disease. I will also explain the treatment and the best ways to prevent the disease.

**380**

**Title:** Meningitis

**Presenter(s):** Kari Maanum

**Department:** Health & Physical Education

**Advisor:** Chris Huot

**Abstract:** Poster will display various types, causes, symptoms, treatment, prevention, and many more facts about meningitis.

**382**

**Title:** Fraud in Our Community

**Presenter(s):** Heidi Tumberg

**Department:** Accounting

**Advisor:** James Hansen

**Abstract:** I will be discussing accounting fraud that has happened not far from our community, in my hometown of New York Mills, MN. You may remember the embezzlement scandal a few years back with Lund Boats and that is what I am going to talk about. I am going to explain what happened, how the \$14 million was taken, and how it could have been better prevented. I also plan to discuss the consequences that the perpetrator has faced since then.

**383**

**Title:** Disc Degeneration

**Presenter(s):** Sarah Altermatt

**Department:** Health and Physical Education

**Advisor:** Christopher Huot

**Abstract:** My poster will be about disc degeneration. It will entail who can be more susceptible for this condition and also some of the various ways that it can be maintained and cared for.

### 384

**Title:** Software Development Life Cycle (SDLC) and its Documentation

**Presenter(s):** Yelena Mejova

**Department:** Computer Science

**Advisor:** Michael Haugrud

**Abstract:** This presentation explores the popular Software Development Life Cycle (SDLC) models, including build and fix, synchronize-and-stabilize, waterfall, rapid prototype, spiral, and other models. Examples of documents produced in each stage of a conventional SDLC will be presented and explained.

### 386

**Title:** Sourisford Salamanders: Investigations into the Ideological Components Surrounding the Salamander Iconography of the Devils Lake-Sourisford Ceramic Complex

**Presenter(s):** Jayme Job

**Department:** Anthropology

**Advisor:** George Holley

**Abstract:** This research explores the 'salamander' iconography depicted on the ceramics of the late prehistoric Devils Lake-Sourisford burial complex of North Dakota and South-Central Canada in order to investigate the possibility of an ideological relationship between the behavior of the biological salamander common to the Northeastern Plains and the Native American belief systems. Previous work on the ceramics of the complex has been extremely limited to form and function, largely ignoring the probability of a symbolic value placed upon the 'salamander' motif. Research into the life-cycle and behavior of the tiger salamander (*Ambystoma tigrinum*) suggests a connection between the physical depiction of the salamander and the spiritual belief system of its creators.

### 387

**Title:** The Effects of Sociocultural Influences on Male Body Image and Muscle-Building Techniques

**Presenter(s):** Micara Kverno

**Department:** Psychology

**Advisor:** Ernest W. Hallford

**Abstract:** Sociocultural influences on male body image, self-esteem, and muscle-building techniques have become a new area of research and interest. Prior research has found that men with lower self-esteem are more susceptible to sociocultural influences and are more likely to engage in harmful muscle-building techniques. The purpose of my study was to evaluate males on their level of body dissatisfaction, amount of exposure to the media, and the types of muscle-building techniques used, if any at all.

### 388

**Title:** Nuclear Effect: Small Town vs. Big Town

**Presenter(s):**

**Department:** Physics

**Advisor:** Ananda Shastri

**Abstract:** What would happen to your hometown if a nuclear weapon exploded over it? The bombs that will be dropped over the two towns in question have energy of 150 kT. This is equivalent to the bomb dropped over Hiroshima. The first town is Hope located in North Dakota and has a population of 350 people. The main source of revenue is farming. The other town is Owatonna located in southern Minnesota with a population of 23,000 people. The main sources of revenue for this town are farming and tourism. The effects of blast, thermal, and radiation will be predicted for each community. This will be done by taking a scientific as well as a personal approach.

### 389

**Title:** The Cultural and Health Implications of Diet Pills

**Presenter(s):**

**Department:** Sociology

**Advisor:** Sue Humphers-Ginther

**Abstract:** The purpose of my presentation will be to tackle the cultural phenomenon of diet pills. It will address our cultural obsession with weight loss and preoccupation with body image. It will also discuss any health concerns that may result from the use of diet pills. The poster display will depict a collage containing pictures of diet pills and other images and phrases associated with weight loss.

### 390

**Title:** Manitoba International Marketing Competition

**Presenter(s):** Kristi Melting, Jason Swier, Brett Guenther, Mandy Stockstad, Sara Johnsrud, Liz Danbom

**Department:** Business

**Advisor:**

**Abstract:** The Manitoba International Marketing Competition (MIMC) is organized by I. H. Asper School of Business students at the University of Manitoba in Winnipeg, Manitoba, Canada. MIMC has three key elements: a computer simulation conducted over the Internet, a strategy statement, and presentations. The Competition culminates when participating teams gather in Winnipeg to make presentations and have their marketing strategies judged by panels of academic and corporate judges. During this weekend, the winning school is decided and announced. The Competition brings together some of the finest business schools in Canada and the United States as well as overseas from both Europe and Asia.

### 391

**Title:** Effect of Nuclear Explosion over Two Cities

**Presenter(s):** Brian Card

**Department:** Honors/Physics

**Advisor:** Ananda Shastri

**Abstract:** This presentation will show the effect of a nuclear explosion over two different cities; thermal effects, blast effects, and radiation will all be taken into account. A mathematical computation will be included in order to further explain the various effects.

### 392

**Title:** Methicillin-Resistant Staphylococcus Aureus  
**Presenter(s):** Jen Lang  
**Department:** Athletic Training  
**Advisor:** Dawn Hammerschmidt  
**Abstract:**

### 394

**Title:** Experimental Use of Radiotelemetry to Track Movements of Painted Turtles (*Chrysemys picta bellii*) in Clay County, Minnesota  
**Presenter(s):** Lateesha Hektner, Ross Larson, Natasha Gruber, Kaven Lubenow  
**Department:** Biosciences  
**Advisor:** Donna M. Bruns Stockrahm  
**Abstract:** In a long-term study, painted turtles (*Chrysemys picta bellii*) were live-trapped during the summer and early fall of 2001-2005 in Clay County, MN, to study growth rates, survival, population characteristics, and movements. On an experimental basis, 3 turtles were fitted with radiotelemetry units (SOPB-2380; frequencies ranged between 150.8 and 151.8 MHz; Wildlife Materials, Inc.) in September 2004 to monitor movements and hibernation sites as well as to evaluate battery life and signal strength under Minnesota winter conditions. To attach the units, a small area in the center of the carapace was roughened with sand paper and cleaned thoroughly with 70% isopropyl alcohol. A mixture of J-B Weld was placed on the area, and the radiotelemetry unit was then placed on top of the glue with the antenna pointing towards the turtle's tail. Units were held in place for an hour, and turtles were kept confined overnight so the glue could harden. Turtles were released into the slough from which they were captured and radio-tracked periodically from September 2004 to February 2005, with the last clear signals in December. Battery life was approximately 3 months. Two turtles moved from their original sloughs to hibernate in different sloughs while the third hibernated in the slough of original capture.

### 395

**Title:** Battles, Ethical and Religious aspects relating to assisted suicide and euthanasia  
**Presenter(s):** Teri Clementson  
**Department:** Sociology  
**Advisor:** Sue Humphers-Ginther  
**Abstract:** Define and examine the cause and effects assisted suicide and euthanasia have presented in our society today with the advancement of medicine and technology. Also look at ethical and religious perspectives relating to the issue

### 396

**Title:** Willingness to forgive another person after an apology  
**Presenter(s):** Stacy Davis  
**Department:** Psychology  
**Advisor:** Ernest Hallford  
**Abstract:** Show that the type and depth of transgression should have a considerable effect on the outcome of forgiveness after an apology.

### 397

**Title:** Female Labor Force Participation: A Cross-Sectional Study of Major US Cities  
**Presenter(s):** Alyson Froslic  
**Department:** Economics  
**Advisor:** Oscar Flores  
**Abstract:** Women have become an increasingly important part of our country's labor force in the past several decades. The purpose of my study is to determine why some cities have higher rates of women in their workforce than others. The following is a cross-sectional analysis of the female labor force participation rates in the 50 most populated cities in the United States. The variables used to predict the dependent variable, female labor force participation rate in each city, include: average age, college and high school graduation rates, median household income, percent of the population married, income tax rate, unemployment rate, density of each city (people per square mile), and the cost of childcare. Religion and major industry of each area are factored in using dummy variables. The average female labor force participation rate, in the 50 cities, is 58.5%. The highest rate was found in Minneapolis, Minnesota 67.8%, while the lowest was Miami, Florida at 44.2%.

### 398

**Title:** Our Time to Shine: Reaccreditation 2007  
**Presenter(s):** Megan DaPisa  
**Department:** Psychology  
**Advisor:** Elizabeth Nawrot  
**Abstract:** MSUM has been going through a reaccreditation process that will be finalized in the 2007 school year. This poster will inform students, faculty, staff, and others about what accreditation is and the importance of maintaining our accreditation status from the Higher Learning Commission. It will also explain about MSUM's self-study report and how students can get involved.

### 399

**Title:** Does Having Students Design and Create a Physiology Laboratory Exercise Examining the Cardiac electrocardiogram Improve Student Learning outcomes in Physiology.

**Presenter(s):** Christopher Failing, Bethany Yard

**Department:** Biosciences

**Advisor:** David Rodenbaugh

**Abstract:** Does Having Students Design and Create a Physiology Laboratory Exercise examining the Cardiac electrocardiogram Improve Student Learning outcomes in Physiology Christopher J. Failing\*, Bethany R. Yard\*, and David W. Rodenbaugh \* These authors contribute equally to this work Department of Biosciences, Minnesota State University Moorhead, Moorhead, MN 56563 Laboratory activities are often provided in addition to traditional lectures. These activities are thought to enhance the students' understanding of the material being taught based on the fact that students are placed in a situation in which they must interact with the material. Traditionally, laboratory activities are created and/or prepared by the instructor in advance. This format of laboratory activities has proven helpful for many students; however, the pre-made laboratory activities may not be the most effective method of learning. Instead, it is hypothesized that having students research, design, and perform one's own laboratory activity would enhance learning and retention of complex concepts. In order to test this hypothesis two undergraduate students researched, designed, and created a laboratory focusing on the electrocardiogram (ECG). A pre- and post-quiz will be given to students who designed the lab versus students performing the lab to assess differences comprehension.

### 400

**Title:** Phenylephrine Stimulates Cell Migration through Phospholipase D Isoform 1 and not Isoform 2

**Presenter(s):** Lisa Streitz, Blake Heinz

**Department:** Biosciences

**Advisor:** Dr. Mark Wallert Dr. Joe Provost

**Abstract:** Phospholipase D (PLD) plays a role in tumorigenesis in several cell lines through the formation of phosphatidic acid (PA) and its downstream metabolites. PLD is involved in proliferation and cytoskeleton rearrangements. Primary alcohol treatment blocks PA formation and is used to define PLD involvement in these events. Two mammalian PLD isoforms are known, PLD1 and PLD2. Both isoforms are regulated by small G proteins, protein interactions and protein kinases. At this time, PLD2 is thought to be the predominant isoform involved in signaling. Our focus was to determine the PLD isoform responsible for mitogenic events. Phenylephrine (PE), an  $\alpha_1$ -adrenergic receptor agonist, leads to the activation of the ERK pathway, stress fiber formation and cell migration in Chinese Hamster lung fibroblasts (CCL39). Using dominant-negative (DN) PLD1 and PLD2, we determined that PLD1 is responsible for these actions. In earlier studies 50  $\mu$ M PE stimulated ERK activity 3-5 fold in a PLD dependent fashion. Expression of DN PLD 1 but not DN PLD2 decreased PE induced ERK activation. Additionally, PLD1 activity was essential to PE induced stress fiber formation. In these studies, transfection with DN PLD2 had little effect on stress fiber formation, while DN PLD1 abrogated PE induced stress fibers. Subsequent use of a wounding assay to study cell migration identified that PE enhanced cell migration and that this enhancement was specifically blocked by DN PLD1. Current work is being done to show the presence of PLD in migrated cells within a wound. Preliminary data has suggested

a greater concentration of transfected DN PLD2 cells growing into the wound whereas no growth of DN PLD1 transfected cells was seen. Studies are also being done to quantify both cell movement into wound region, and activation of ERK in cells transfected with either DN PLD1 or DN PLD2 and subsequent stimulation with PE. Our data shows that PLD1 and not PLD2 mediates  $\alpha_1$ -adrenergic regulation of cell migratory events and defines a unique role for PLD1 in signal transduction. Work supported by NIH Award number 1 R15 HL074924-01A1.

### 401

**Title:** Sino-U.S Detente 1972

**Presenter(s):** Hajime Ishizuka

**Department:** History

**Advisor:** Henry Chan

**Abstract:** In 1972, the Sino-U.S detente occurred with President Nixon's visit to Beijing, China. This incident greatly impacted the world because few nation-states expected that the People's Republic of China (PRC), a communist state, and the United States would realize rapprochement. In this regard, the Sino-U.S detente changed the whole view of the world order. After the Sino-U.S detente, the Soviet Union also realized detente with the United States. How was the detente accomplished? What were the consequences of the detente in the international arena? The United States and the PRC had their assumptions on the detente. In the presentation, both the U.S and the PRCs assumptions on the detente, diplomatic process and the consequences of the detente will be discussed.

### 402

**Title:** Maverick Construction, Inc.

**Presenter(s):** Mindi Koeplin, Nick Janssen, Eric Lien

**Department:** Technology

**Advisor:** Norma Andersen

**Abstract:** Construction Management Capstone Project. Maverick Construction, Inc. was a company created to mock a real construction company. We have created a project that demonstrates our knowledge in estimating, planning and scheduling, design, feasibility, and management. Come see our River Oaks Bridge Project and our proposal to help relieve traffic congestion in the Fargo/Moorhead area.

### 403

**Title:** Comparing the Relaxation Time of Different Concentrations of Salt Water using Nuclear Magnetic Resonance Spectroscopy

**Presenter(s):**

**Department:** Physics

**Advisor:** Ananda Shastri

**Abstract:** In NMR, the nucleus (proton) of the sample is bombarded with a radio wave of the right frequency which knocks the nuclei out of equilibrium. The time it takes the nucleus to return to equilibrium is known as the relaxation time. The relaxation time of the nuclei changes with different concentrations. Sometimes, before an NMR scan is taken at a hospital, the patient is injected with a selective absorbent substance to increase the concentration in specific body parts resulting in a better contrasting NMR image. This presentation will on an experiment to analyse the effect of the concentration on the relaxation time of  $MnSO_4 \cdot H_2O$

#### 404

**Title:** Irrigation System

**Presenter(s):** Heather Prestegord, Jessica Trautwein, Darcie Coombs-Dewey

**Department:** Mathematics

**Advisor:** Ellen Hill

**Abstract:** We are going to devise a model that maximizes the efficiency of an irrigation system.

#### 405

**Title:** Fairness of Major League Baseball Fields

**Presenter(s):** Nancy Martin, Arick Folingstad, Daniel Lawson

**Department:** Mathematics

**Advisor:** Ellen Hill

**Abstract:** The idea of the project is to look at 8 Major League baseball parks and determine which park is the most fair to hit a homerun. The project will also look at different possibilities of an ideal ball park that would be the most fair. We will look at the Yankee Stadium (New York Yankees), Fenway Park (Boston Red Sox), Shea Stadium (New York Mets), Metrodome (Minnesota Twins), Coors Field (Colorado Rockies), Petco Park (San Diego Padres), McAfee Coliseum (Oakland A's), Minute Maid Park (Houston Astros).

#### 406

**Title:** Effective Deployment of Irrigation Systems

**Presenter(s):** Mike Caspers, Chris Brewer

**Department:** Mathematics

**Advisor:** Ellen Hill

**Abstract:** As with all other sectors in today's business world, farmers and ranchers are finding it necessary to do more with less. A growing population and fast moving society demands that they produce higher yields yet use less space; grow larger, lusher produce but do so in a shorter period of time; provide a continuous supply of goods despite decreased resources. Historically, water has been the delimitating factor of what could be grown, but the most limited and limiting resource confronting agriculturalists today is time. In order to ensure a crop has adequate moisture, farmers may employ any of a variety of irrigating techniques. A popular choice for small ranges is an effective though time intensive system of hand moved pipes with sprinkler heads. Through trial and error, a schedule for moving and positioning the sprinkler system was devised which is intended to minimize the amount of time required to properly water a level, rectangular field measuring 80 meters by 30 meters. The field must receive at least 2cm of water every four days, but never more than .75cm of water per hour. The style of irrigation will be a hand moved 20m aluminum pipe that can be easily disassembled and moved from one location to another. The irrigation pipe will be connected to a water source that has a flow rate of 150L/min and a pressure of 420kPa.

#### 407

**Title:** Temperature Modeling

**Presenter(s):** Charles Conduah, Tom Mooney, Matt Larson

**Department:** Math

**Advisor:** Ellen Hill

**Abstract:** When a hot object, like a cup of coffee, is placed in a cooler environment its temperature drops. The same thing happens to a person outside on a cold day. We know from personal experience that windy days feel colder than calm days. In fact, during winter weather reports often include the "wind chill factor" in addition to the temperature. Design a module that studies the cooling and the effect that wind has on cooling.

#### 408

**Title:** Tommy John Injury/Surgery

**Presenter(s):** Bryce Allickson

**Department:** Health Department

**Advisor:** Chris Huot

**Abstract:** I will be presenting on Tommy John Injury/Surgery. I will give a brief introduction to who Tommy John is, how to diagnose the injury, how the surgery is done, how to prevent the injury and the rehab required after surgery.

#### 409

**Title:** Devastating Effects of Nuclear Explosions on our home towns.

**Presenter(s):** Yuliya Babasheva, Kristen Bouman

**Department:** Physics

**Advisor:** Ananda Shastri

**Abstract:** The presentation will include a poster that is going to cover the effects of a nuclear explosion over the towns of Alexandria, MN and Moscow, Russia. Including blast, thermal and radiation effects on specific landmarks. It will include maps of the towns with a hypocenter and three concentric circles of different radii which detail various effects. The goal of the project is to understand how different effects of nuclear explosion change with distance. The project is also going to include the effects of nuclear explosion on people as well as the ways the towns could cope with such disaster.

#### 410

**Title:** How can vegetarianism improve environmental health?

**Presenter(s):** Carissa Walter

**Department:** Health & Physical Education

**Advisor:** Dawn Hoffner

**Abstract:** This poster presentation will explore environmental health issues related to the production of meat, particularly cattle. I will discuss distribution problems associated with the world's grain due to cattle raising. I will go over deforestation issues for the purpose of raising cattle. I will also discuss how waste from livestock is contaminating groundwater and causing food borne illness.

#### 411

**Title:** Public International Law and the War in Iraq

**Presenter(s):** Josh Erickson

**Department:** Political Science

**Advisor:** Andrew Conteh

**Abstract:** Is the Iraq war legal in the context of International law? And, does International law possess the intrinsic and extrinsic sanctions necessary to maintain an effective rule of law at the international level? Research Questions – 1) What international conventions apply to the conduct of warring nations? 2) What international organizations exist that attempt to govern relations between nations? 3) What does international law have to say about the waging of war? 4) What international agreements or resolutions pertain specifically to the first and second wars fought against Iraq? 5) What agreements or resolutions exist that relate to the conduct of an occupying power? Hypothesis – The waging of war on Iraq by the U.S. and its allies was illegal in the context of international law, and international law does not possess the necessary sanctions to guarantee compliance with international law by the nations of the world.

#### 412

**Title:** Geometric Rulers

**Presenter(s):** Jessica Mavis

**Department:** Mathematics

**Advisor:** Tim Peil

**Abstract:** There will be an explanation of the Euclidean, Taxicab, and Max-Distance distance functions followed by a presentation of rulers created to measure distance in these different planes.

#### 413

**Title:** Wild Turkey Distribution and Urban Human/Turkey Interactions Along the Red River Valley in Northwestern Minnesota

**Presenter(s):** Todd Zielinski, Hallie Ladd, Brad Schutt, Stacy Wanzek, Natasha Gruber, Katie Geray

**Department:** Biosciences

**Advisor:** Donna M. Bruns Stockrahm

**Abstract:** This study was initiated in 2003 with an initial objective of using mail surveys to estimate the minimum wild turkey (*Meleagris gallopavo*) population in the Red River Valley (RRV) in the Fargo, North Dakota/Moorhead, Minnesota (F/M) area. The RRV offers suitable turkey habitat in a relatively narrow corridor surrounded in the F/M area by a dense human population. In 2004, we also monitored urban human/turkey interactions. In 2005, we added a survey to assess public opinion on wild turkey management options in the event abatement measures were necessary due to problematic urban turkeys. A total of 537, 368, and 661 turkeys were reported in 2003, 2004, and 2005, respectively. Estimates were made as accurate as possible by eliminating reports believed to be duplicates. In 2004, 12.5% of survey respondents (respondents = 40, out of 150 mailed surveys) reported negative human/turkey interactions. In 2005, negative reports rose to 24% (respondents = 75, out of 500 mailed surveys). Negative interactions included such things as turkeys blocking traffic routes, entering yards, eating from bird feeders/gardens, and aggressive behavior. Public opinion surveys of management options for abatement indicated that 46 out of the 75 respondents (61.3%) agreed or strongly agreed with a turkey hunting season option to reduce potential problems.

#### 414

**Title:** Migraine: Not Just a Headache

**Presenter(s):** Mike Hawes

**Department:** Health and Physical Education

**Advisor:** Chris Huot

**Abstract:**

#### 415

**Title:** The Effects of Testosterone on Autonomic Control of the Cardiovascular System and the Capacity to Produce Adenosine in the Copenhagen Strain of Rats

**Presenter(s):** David Sliwoski, Deepesh Pandey, Deshna Gurung

**Department:** Biology

**Advisor:** David Rodenbaugh

**Abstract:** Gender differences in the cardiovascular system have been described. Yet, the extent to which gender influences cardiac performance due to the presence of sex hormones are unclear. Gender differences have also been observed in spontaneous running capacity. Previous studies have also documented differences in exercise capacity in two inbred strains of rats. These differences in exercise capacity are associated with differences in autonomic control of the heart. It is unclear if these phenotypic differences in exercise performance in the two strains of rats are influenced by sex hormones. This study is designed to determine if the presence of androgens will alter the phenotype of the Copenhagen rat in a manner that would enhance exercise performance. We will use a longitudinal study where adult male Copenhagen rats with or without testicles will be instrumented with arterial lines to determine resting autonomic control of the heart after gonadectomy. Following these procedures, animals will be sacrificed, the heart will be removed and adenosine production capacity will be measured. We hypothesize that androgen withdrawal will enhance adenosine production capacity, and increase heart rate via increase in sympathetic support in a manner that would lead to enhanced running capacity via the effect of androgens on cognate receptors regulatory genes that contribute to phenotypic differences in exercise capacity.

#### 416

**Title:** Xenoestrogens: Environmental Politics Playing Out on the Human Body

**Presenter(s):** Julie Larson

**Department:** Biology

**Advisor:** Ellen Brisch

**Abstract:** Xenoestrogens are otherwise known as foreign estrogens, that is, they do not naturally occur within the human body. They have become ubiquitous within the environment around us and within our very bodies. Some examples are: pesticides, such as atrazine, plasticizers used to make plastics more flexible, and the unintended chemical byproduct of burning plastics in landfill, dioxin. This presentation not only asks what happens to our bodies and environment as they become infiltrated with these hormone mimickers, but takes a closer look at what some experts think, and the conclusions some current research points to.

**417**

**Title:** Apraxia of speech

**Presenter(s):** Kim Yager

**Department:** Health and Physical education

**Advisor:** Dawn Hammerschmidt

**Abstract:** Apraxia of speech is defined as a deficit in the ability to plan the motor movements for speech. This can make the person sound like they are struggling to articulate their words. There are two specific classifications of apraxia of speech, "acquired" apraxia of speech and "Developmental" apraxia of speech. A qualified professional, called a speech-language pathologist will provide an assessment and future plan. There is much that can be done for people who suffer from apraxia of speech.

**418**

**Title:** Creation of a CDC 28 "knockout" (by generating a temperature sensitive loss of function) mutant to observe mitochondrial inheritance in *Saccharomyces cerevisiae*

**Presenter(s):**

**Department:** Biosciences

**Advisor:** Ellen Brisch

**Abstract:** In *Saccharomyces cerevisiae*, the inheritance of mitochondria from mother cell to daughter bud during cell division is an essential feature of yeast growth. The analysis of mutants defective in mitochondrial morphology and inheritance has led to the identification of a number of proteins that control mitochondrial inheritance. This experiment focuses on a certain gene, CDC 28, that encodes a protein that drives the cell through mitosis. Using PCR, a knockout construct was generated. This construct was then isolated via gel electrophoresis and successfully purified. This construct will be transformed into yeast cells and through the use of a copper induced promoter be selectively activated. Through mitochondrial staining, the role of CDC 28 in mitochondrial inheritance will be observed.

**419**

**Title:** Maturity Onset Diabetes of the Young (MODY)

**Presenter(s):** Kathy Rahman

**Department:** Health and Physical Education

**Advisor:** Dawn Hammerschmidt

**Abstract:** Maturity Onset Diabetes of the Young also known as MODY is an unknown form of diabetes. MODY is a genetic mutation that causes diabetes in people 25 and younger. MODY has currently has six different forms and can be found in all racial and ethnic backgrounds.

**420**

**Title:** Assessing genetic diversity of *Pimephales promelas* using PCR-based microsatellite analysis and capillary electrophoresis analysis

**Presenter(s):** Jill Moes, Laura Matzke, Rebecca Landie

**Department:** Biology

**Advisor:** Dr. Michelle Malott

**Abstract:** Fathead minnows (*Pimephales promelas*) are a freshwater fish with a wide geographic distribution. We are specifically interested in the fish population found in Budd Lake in Itasca, MN. By using a molecular approach to study genetic variation in the population, we are able to further investigate the reproductive behavior seen in fathead minnows. We are using Polymerase Chain Reaction (PCR) to examine specific regions of the DNA called microsatellites. This is allowing us to develop genetic "fingerprints" for these minnows. We are currently researching the levels of genetic diversity with various primers, attempting to further our knowledge of the levels of the genetic variation in this population of fathead minnows. We will also show a comparison of data from gel electrophoresis to the capillary electrophoresis analysis.

**421**

**Title:** My Medical Missions Trip to Nicaragua

**Presenter(s):** Abby Grineski

**Department:** Nursing

**Advisor:** Jane Bergland

**Abstract:** I am going to have a poster with pictures and a map of where I was in Jalapa, Nicaragua. Pictures will show what different things that I did in nursing while on this missions trip.

**424**

**Title:** Impact of brook stickleback on aquatic macroinvertebrates in an artificial wetland

**Presenter(s):** Hallie Ladd, Stacy Wanzek, Kenna Hairgrove, Tim Buer

**Department:** Biosciences

**Advisor:** Linda Fuselier

**Abstract:** The top-down effects of the brook stickleback on invertebrate communities was studied in an artificial wetland in Clay County, MN. Brook stickleback are predacious fish abundant in wetlands of Minnesota. The purpose of this study was to see if different densities of brook stickleback influenced community structure of invertebrates. Composition and abundance of invertebrate assemblages were examined under three treatment conditions: no sticklebacks, low density and high density of fish.

**425**

**Title:** Academic Service-Learning

**Presenter(s):**

**Department:** Student Support Services

**Advisor:** Michelle Malott

**Abstract:** We will be doing a simple poster presentation that outlines what Academic Service-Learning is, what it has done in the past, and what it is doing for the campus and community in the future. Along, with our poster, we will be showing our brand new informational video.



## 426

**Title:** Hydrogen from Hydrogen Peroxide: A Solar Assisted Pathway to Economical Hydrogen Production?

**Presenter(s):** Timothy Flick

**Department:** Chemistry

**Advisor:** Asoka Marasinghe

**Abstract:** Major roadblocks in progress toward a Hydrogen Economy are storage and transport of hydrogen. One solution is on-site production either by power supplied by the grid or by solar photovoltaics. Solar photovoltaics is a favored method due to the lack of "greenhouse" gas emissions in the power production process and may be supplemented by the solar photocatalytic production of hydrogen peroxide as a precursor to hydrogen production by electrolysis. Basic technology for such an effort will be demonstrated and evaluated.

## 428

**Title:** Making Proportions Simple.

**Presenter(s):** Ashley Metelmann, Danielle Hensch

**Department:** Mathematics

**Advisor:** Geok Ng

**Abstract:** Come and learn a simple alternative approach for solving proportions using mental math!

## 430

**Title:** Corporal Punishment: Right or Wrong?

**Presenter(s):** Kelsey M. Stoops

**Department:** Psychology

**Advisor:** Ernest W. Hallford

**Abstract:** Corporal punishment (CP) is a very controversial issue as there are many stated ramifications of the use of it; hence, there are many people who agree with corporal punishment and many who do not. There are some positive outcomes stated in this paper from using corporal punishment where as other sources sited negative outcomes. Therefore, there is not a consensus as to whether corporal punishment should be used on children or not. Not only is there not a consensus as to whether corporal punishment is right or not, but there is much evidence lacking in other areas as well. For example, is the use of corporal punishment facing a decline and if so with which populations. I am interested in investigating a Midwestern liberal arts college students' attitudes with the use of corporal punishment and those who are parents to what extent are they currently enforcing corporal punishment. I hypothesize that the MSUM students will differ than the previous statistics for attitudes against CP and for their prediction of their use of CP.

## 431

**Title:** From Draft To Workshop: Choices Made During The Writing Process

**Presenter(s):** Stashenko Hempeck, Conor Shenk, Joel Hagen, Christine Hingley, Jennifer Hasbargen

**Department:** Master of Fine Arts

**Advisor:** Thom Tamaro

**Abstract:** This will be a five-member panel discussion of various aspects of the writing process: multiple narrative point of view; bending genres; the fallacy of the muse in poetry; developing the novel as you go.

## 432

**Title:** Yung Wing and the First One Hundred Chinese Students In America

**Presenter(s):** Joanne Peterson

**Department:** History

**Advisor:** Henry Chan

**Abstract:** This presentation examines the role of Yung Wing in bringing the first one hundred Chinese students to America. Yung Wing was the first Chinese student to obtain a degree from an American University. Upon his graduation from Yale, Yung Wing felt a sense of obligation to his countrymen and his greatest desire was to introduce Chinese students to the Western system. In 1872 after eighteen years of dedication, his dream came to fruition. The Qing government recognized the benefits of the plan and approved of sending Chinese youths to America. The plan had eighteen years of success. In 1881, China's Imperial policies changed and the Chinese Educational Mission was abandoned.

## 433

**Title:** Black Powder Rocket Motor Construction and Impulse Testing

**Presenter(s):** William Casper, Alex Brandt, Nick Howell

**Department:** Department of Physics and Astronomy

**Advisor:** Steve Lindaas

**Abstract:** We are attempting to develop an engine with a black powder composition and nozzle dimension that generates maximum possible impulse for a specific engine size. Impulse is dependent on the amount of propellant contained in the engine, the burn rate of the propellant, and the nozzle size of the motor. By changing the ratio of potassium nitrate, carbon, and sulfur contained in the black powder, we will change the burn rate. Combined with different nozzle sizes, varying impulses will be generated. We hope to develop a formula quantifying the relationship between impulse, burn rate, and nozzle size.

## 434

**Title:** FGM at Home and Abroad

**Presenter(s):**

**Department:** Political Science

**Advisor:** Andrew Conteh

**Abstract:** Female genital mutilation (FGM) is a gruesome procedure that is practiced across the world. There are three different forms of it, all of which cause harmful effects, as well as death. There is a debate over the fact whether it is a cultural or religious issue, and this affects the way in which it can be abolished. With the influx of migrants in the Fargo-Moorhead area, have we seen a rise in the number of cases of FGM?

### 435

**Title:** Relationship Between Size of Adult Female Painted Turtles (*Chrysemys picta bellii*) and Numbers of Younger Turtles in Two Sloughs in Clay County, MN

**Presenter(s):** Lateesha Hektner, Ross Larson, Shannon Gaukler, Hallie Ladd, Margo Kramer, Jasmine Carlson

**Department:** Biosciences

**Advisor:** Donna M. Bruns Stockrahm

**Abstract:** In a long-term study, over 500 painted turtles (*Chrysemys picta bellii*) have been live-trapped during the summer/early fall of 2001-2005 in Clay County, MN, to study growth rates, survival, population characteristics, and movements. Two sloughs were trapped, 2.7 ha and 6.2 ha. For each captured turtle, outer scutes were notched for individual identification. Turtles were weighed, sexed and measured for length of plastron, width of carapace, and length of curvature of the carapace, then released. The literature has suggested that females with larger shells have the ability to carry more eggs, and, hence, have a greater reproductive potential than do smaller females. One objective for our 2005 data was to look at relative adult female size in the two respective sloughs and look at the numbers of smaller (assumed younger- i.e., juvenile and subadult) turtles captured in these sloughs to determine if there is a relationship. Preliminary analysis does not indicate a strong relationship between larger female size and higher number of associated younger animals, but sample sizes were small from the 2.7-ha slough. Further analyses will examine multiple years of data as well as alternative explanations for our findings.

### 436

**Title:** Synthesis of Porous Metal-Organic Frameworks containing Chiral Organic Ligands

**Presenter(s):** Jennifer Smith

**Department:** Chemistry

**Advisor:** Jeff Bodwin

**Abstract:** Poster demonstrating the synthesis of organo-metallic ligands necessary to form a porous framework to be used in organic synthesis reactions

### 437

**Title:** Perceived Success-failure and its effect on future memory task performance

**Presenter(s):** Nick Loudon

**Department:** Psychology

**Advisor:** Ernest Hallford

**Abstract:** Many studies have been conducted concerning the perception of success or failure and its implications for future performance. It is generally accepted that when an individual is confident in their abilities and has experienced prior success, they will achieve a higher performance score than if they believe their abilities are lacking. This study examines this idea and, more specifically, focuses on memory. The research presented will focus on how individuals perform on a memory task. Participants will complete a memory task and then will be randomly told whether they have done well or poorly and then will be given a similar test of memory. A control group will also be tested (no feedback). The effects of feedback shall be measured against their performance on the first test.

### 438

**Title:** Small Mammal Response to Red Fox (*Vulpes vulpes*) and Raccoon (*Procyon lotor*) Urine

**Presenter(s):** Jessica R. Bothum, Jessica Campbell, Shannon Gaukler, Brittany Smith

**Department:** Biosciences

**Advisor:** Donna M. Bruns Stockrahm

**Abstract:** Predator-prey relationship studies suggest that prey will alter their behavior in response to predation risk. Red fox (*Vulpes vulpes*) and raccoon (*Procyon lotor*) urine was used as predator scents to test this concept. A transect containing 64 trap stations was located at the Minnesota State University Moorhead Regional Science Center in October 2005. Each station included two traps. One trap was scented with red fox or raccoon urine, while the other was left unscented. The hypothesis was that small mammals would demonstrate preference for unscented rather than scented traps. Captured members of Rodentia and Insectivora were identified to species, and gender, habitat association, and trap success in scented versus unscented traps were recorded. Chi-square analysis showed some significant results. Females entered traps more readily than males regardless of scent application. All species of small mammals preferred lowland vegetation despite gender or scent. No avoidance of predator scents was indicated. These results differ from predicted results.

### 439

**Title:** Situated cognition and Peer Learning Environments between Students From Different Cultural Backgrounds

**Presenter(s):** Christine Borden-King-Jones

**Department:** Anthropology

**Advisor:** Bruce Roberts

**Abstract:** This presentation will give an overview of my ethnographic research of peer-learning environments in three fifth grade classrooms. Differences in situated cognition events between English as a Learned Language (ELL) students and non-ELL students will be discussed as well as the comparison to homogeneous groups of students.

### 440

**Title:** Suubi and a muzungu: learning from AIDS orphans in East Africa

**Presenter(s):** Jen Engquist

**Department:** International Studies

**Advisor:** Bruce Roberts

**Abstract:** This presentation will be based on time that I spent in Uganda, East Africa in 2005. The discussion will focus on the primary education of AIDS orphans including my experience teaching through the African Child Foundation. Other topics include working with refugees and the African Child Foundation's Girls Empowerment program, which I had the opportunity to lead.

#### 441

**Title:** Geophysics: New Prospects in Non-destructive Archaeology

**Presenter(s):** Jen Krutsinger, Maraigh Leitch

**Department:** Anthropology

**Advisor:** Rinita Dalan

**Abstract:** Geophysics: New Prospects in Non-destructive Archaeology A number of methods to complete non-destructive surveys of archaeological sites have been developed in the last 70 years. One particular method is magnetic susceptibility. Magnetic susceptibility is a measure of the ease with which material can be magnetized and it is a sensitive method that can indicate soil formation and human habitation. This presentation will discuss the basic principles of magnetic susceptibility and use a case study to illustrate one of the latest magnetic susceptibility instruments.

#### 443

**Title:** Sound the alarm: Releaser-induced predator-recognition learning using conspecific alarm cues to associate predation risk with an artificial auditory stimulus

**Presenter(s):** Julie Pogatshnick, Danfee Gibson

**Department:** Biosciences

**Advisor:** Brian Wisenden

**Abstract:** Fish sense danger in their environment by detecting chemical alarm cues released when a conspecific (member of their own species) is injured by a predator attack. It is known from previous studies that fish learn to associate danger with visual and chemical stimuli that appear simultaneously with the release of chemical alarm cues. Here, we test if fish can associate predation risk with an auditory cue. Fishes in the series otophysii are capable of hearing a wide range of sound frequencies and detect them at energy low thresholds. The selective advantage of this incredible hearing ability has never been explained. One possibility is that they use it to hear the sound approaching predators.

#### 444

**Title:** Ho Chi Minh: His Quest for the Independence of Vietnam

**Presenter(s):**

**Department:** History

**Advisor:** Henry Chan

**Abstract:** In 1945, after the surrender of the Japanese to the United States, an obscure man to those in the West presented a document to the world declaring the independence and sovereignty of the Democratic Republic of Vietnam. Copied mainly from our own Declaration of Independence and the Declaration of the French Revolution this document, not only declared their independence, but also listed the abuses that the people of Vietnam had suffered at the hand of the French. Seeking our own interests, we ignored this declaration, once again turning our backs on our own values of life, liberty, and the pursuit of happiness by supporting the French in their re-establishing of French imperialism in Vietnam. This decision would again bare bitter consequences – the Vietnam War.

#### 445

**Title:** The Effects of Nuclear Bombs on Two Locations

**Presenter(s):** Molly Feirer

**Department:** Honors

**Advisor:** Ananda Shastri

**Abstract:** The presentation will discuss the effects of two nuclear bombs, of varying sizes, hitting two separate locations. The first target will be the Target Center in Minneapolis, MN, and the second target will be Garrison, ND. Maps will be provided to point out the hypocenter, and three circles of differing radii will be drawn from this point to help demonstrate the effects of the blast.

#### 446

**Title:** The Ups and Downs of Science

**Presenter(s):** Mike Entzminger, Sergio Blanco

**Department:** Biosciences/Physics

**Advisor:** Alison Wallace

**Abstract:** Explore the physics of movement! This workshop consists of a series of demonstrations and hands-on activities that illustrate the 5 E model of teaching and learning science. The science of motion will be uncovered for you!

#### 447

**Title:** Ho Chi Minh - His Quest for the Independence of Vietnam

**Presenter(s):** Jon Pabody

**Department:** History

**Advisor:** Henry Chan

**Abstract:** In 1945, after the surrender of the Japanese to the United States, an obscure man to those in the West presented a document to the world declaring the independence and sovereignty of the Democratic Republic of Vietnam. Copied mainly from our own Declaration of Independence and the Declaration of the French Revolution this document, not only declared their independence, but also listed the abuses that the people of Vietnam had suffered at the hand of the French. Seeking our own interests, we ignored this declaration, once again turning our back on our own values of life, liberty, and the pursuit of happiness by supporting the French in their re-establishing of French imperialism in Vietnam. This decision would once again bare bitter consequences – the Vietnam War.

#### 448

**Title:** What nuclear destruction may do to your small town.

**Presenter(s):** April Swinson

**Department:** Physics

**Advisor:** Ananda Shastri

**Abstract:** To describe the effects a nuclear weapon would have on the town, Pine City, Minnesota. Research and exhibit the effects a nuclear weapon would have on the people, the environment of the area and the architecture. The project will make the example specific, using actual locations such as schools, churches, and parks.

449

**Title:** Image Quality of X-Rays  
**Presenter(s):** Elizabeth Hegge  
**Department:** Physics  
**Advisor:** Ananda Shastri

**Abstract:** During my internship at Merit Care I experimented with an x-ray machine that used a selenium detector. The measurements were taken by sending x-rays through a gas-filled detector called an ionization chamber. The x-ray output is controlled by the selection of voltage, current, and exposure time. I experimented with the image quality of these x-rays at various kVp levels concentrating on the difference in the image gray scale or the contrast. The kVp is the potential difference across the x-ray tube. It defines the maximum energy of the x-rays that are produced and strongly influences the spectrum of x-rays and the radiographic contrast of the image. The kVp level also strongly influences the dose. I viewed the amount of contrast and noise at each level and was able to compare these using a ratio to determine which kVp level was ideal for a desired amount of noise and contrast for an x-ray.

450

**Title:** Genderqueer  
**Presenter(s):** Eli Westerfield  
**Department:** Master's of Liberal Arts  
**Advisor:** Deb White

**Abstract:** Transgendered individuals are forced to place themselves outside the female/male dichotomy. Transgendered people live in a world that recognizes only woman and man (coupled with female/feminine and male/masculine). Can a transgendered/genderqueer person maintain their identity? What is the difference between sex, gender, and gender identity? Can they be separated?

451

**Title:** Economic Analysis of the Recording Industry  
**Presenter(s):** Cory Markert  
**Department:** Economics  
**Advisor:** Oscar Flores  
**Abstract:** Examines key characteristics and trends within the U.S. Recording Industry.

452

**Title:** Depression  
**Presenter(s):** Eli Westerfield  
**Department:** Master's of Liberal Arts  
**Advisor:** Deb White

**Abstract:** Many people suffer in silence while depression slowly eats away at their quality of life. Some are ashamed to seek help. Most are afraid to talk openly about their experiences. This video gives a first-hand account of what it is like to live with clinical depression that has resulted in self-injury, suicide attempts, and hospitalization. The video includes a comprehensive discussion of warning signs, and how depression can lead to self-injury, and possibly suicide if it is not treated.

453

**Title:** Building a Student Community with an Online Calendar and Interactive Events.  
**Presenter(s):** Eric Roseen, Paul Segovia  
**Department:** Biosciences  
**Advisor:** Kathryn Wise

**Abstract:** This oral presentation describes an online calendar developed to serve as a "common bulletin board" for the MSUM community to learn more about upcoming events in the Natural Sciences. The calendar allows the viewer to browse posted events or narrow calendar outlook to these four categories: Key Deadlines, CSNS Outreach, Public Events of Interest, and Student Organization Activities. This calendar serves as a widely applicable template that includes dates, times, and a brief description of entered events. The MSUM Student Tech Team provided support in developing an on-line submission form for adding events to the Natural Sciences Calendar. The calendar will be shown, and its structure, and its significance to building a student community will be described. Community building continued with the 1st annual "Tri Sci Athlon". The Tri Sci Athlon was a game show that used a Jeopardy template. This event brought teams of students together to compete in answering questions from various areas of physics, biology, chemistry, and popular science. Thirteen teams participated this year, and we hope to improve the event for next fall. As a result of the Tri Sci Athlon, a Jeopardy-based program suitable for use in the classroom or by organizations is under development. This version permits easy filling of the categories from questions and answers stored in a database and complements the currently available "Jeopardy," which was designed as a self-testing tool. A beta version will be available for preview.

455

**Title:** What Can Nonwords Tell Us About the Role of Sound and Spelling in Spoken Word Recognition?  
**Presenter(s):** Kelsey M. Stoops, Lindsay Johnson  
**Department:** Psychology  
**Advisor:** Christine Malone  
**Abstract:** A primed naming task was given that presented word and nonword pairs whose initial syllables possess (1) matching sounds (e.g., toucal-tutor), (2) matching spelling (e.g., posturb-poster) or (3) matching sounds and spelling (e.g., surplun-survey). The same was done for the word-final relationships (1) matching sounds (e.g., wisturb-superb), (2) matching spelling (e.g. enkow-borrow), and (3) matching sounds and spelling (e.g., glexible-terrible).

## 456

**Title:** Want a Healthier Life? Get Married

**Presenter(s):** Brittany Anderson

**Department:** Sociology

**Advisor:** Sue Humphers-Ginther

**Abstract:** Want a Healthier Life? Get Married People have been concerned with health all our lives. We all know the most common ways to improve our health, from exercise and a healthy diet to regular checkups and taking your vitamins. Have you ever thought of something so normal in many of our lives improving your health? Well recent studies have shown that people who get married end up living a healthier life. I plan on researching to find out why such a simple thing as marriage can improve your health status. With this research we will be able to know yet another good reason to become healthier and maybe get a dose of love potion #9 while we're at it.

## 457

**Title:** The social and health problem of domestic violence

**Presenter(s):** Shawna Rochel

**Department:** Sociology

**Advisor:** Sue Humphers-Ginther

**Abstract:** Domestic Violence is the leading cause of emergency visits for women. It is significantly becoming more of a health and social problem. More research needs to be conducted to determine why it continues to put so many women in hospitals and even death. What can or is society doing to help women who find themselves in these types of abusive situations? Research will be done to analyze this question and to take into account the health conditions that occur from domestic violence. My poster will show pictures of victims and also give information as to why it continues to be a social and health problem.

## 458

**Title:** The Role of Oxidative Stress in maternal mtDNA Inheritance.

**Presenter(s):** Frank Johnson, Jr

**Department:** Biosciences

**Advisor:** Ellen Brisch

**Abstract:** The purpose of this investigation is to determine if, and to what extent, oxidative stress plays a role in maternal mtDNA inheritance. Upon fertilization, the paternal mitochondria are tagged with ubiquitin and degraded by proteolytic enzymes; therefore the paternal mtDNA is not incorporated into the zygote. Free radical oxygen (O<sub>2</sub><sup>-</sup>) is a known byproduct of oxidative phosphorylation and is also known to destroy biological tissues by the mechanisms of oxidation. The methods employed in this investigation are used to determine the extent of oxidative damage to paternal mtDNA. This may offer evidence as to why paternal mtDNA is not inherited.

## 459

**Title:** Reading the MSUM Landscapes: Student Dormitories: Do they lend judgement and feeling to the college experience?

**Presenter(s):** Amber Gullingsrud, Alisha DiCosimo

**Department:** Anthropology

**Advisor:** Dr. Rinita Dalan

**Abstract:** Abstract: In this study, we will be exploring the concept of a dormitory on the Minnesota State University Moorhead campus. We will be looking at the structure of each dorm, its placement within the campus, and the history behind why and how each residence hall was built. We will also look at the different problems that have arisen in some of the dorms. We believe that it is important to recognize the significance of each facility on campus, and highlighting the importance of the residence halls since they are places where students live.

## 460

**Title:** Accounting Fraud and the Accounting Profession

**Presenter(s):** Jason Wolf

**Department:** Accounting

**Advisor:** James Hansen

**Abstract:** The presentation will explore the high profile fraud cases that have been highlighted in the media in recent years. The presentation will also highlight what these cases and the subsequent passage of the Sarbanes-Oxley Act of 2002 means for the accounting profession and what the future may hold for accounting professionals.

## 461

**Title:** Online Presentations with Tegrity

**Presenter(s):** Jessica Trautwein

**Department:** Mathematics

**Advisor:** Timothy Peil

**Abstract:** Tegrity allows lectures to be recorded and put online, enabling students to access information without directly being in contact with the instructor. Tegrity combines video lectures with PowerPoint presentations. The instructor is also able to write on the screen and highlight items.

## 462

**Title:** Claude Debussy's Pelléas et Mélisande as a symbolist work

**Presenter(s):** Andrea Retterath

**Department:** Music

**Advisor:** Laurie Blunsom

**Abstract:** Pelléas et Mélisande, an opera written by Claude Debussy that premiered in 1902 in Paris, is a masterpiece of his writing with its understated themes and wistful emotions. It is a shining example of the symbolist movement, which surfaced in France within art, literature, and music. In the piece we can see the significant drama of librettist and prominent symbolist Maurice Maeterlinck blending together with Debussy's progressive techniques to create an opera with all the dreamy allegory that embodied the symbolist way of thinking. In this presentation I will discuss the characteristics of the genre which were defined by the literary movement and then applied by composers. I will also present an interpretive critique of Pelléas et Mélisande as a symbolist piece.

## 463

**Title:** Seventh Centruy Silk Road from the Jade Gate to Turfan: With Reference to Xuanzang's Travels

**Presenter(s):** Rory Dennison

**Department:** History

**Advisor:** Henry Chan

**Abstract:** This paper will overview the major sites and areas along the Silk Road between the Yumen Guan and the city of Turfan as they existed during the first half of the Seventh Century. Attention will be paid to the hardships and difficulties of the journey while considering the actual conditions as later recorded by Xuanzang a Buddhist monk who traveled the route. The political setting, archaeological resources, and climate of the area are also to be considered. The harshness of the geography as well as the native inhabitants of the countries Xuanzang traversed will be mentioned. Overall, the paper serves as a summery of the first steps of this famous traveler's journey in an historical light.

## 465

**Title:** Freud's Heyday: Sex & Aggression in Lawrence's "The Prussian Officer"

**Presenter(s):** Carissa Wolf

**Department:** English

**Advisor:** Sandy Pearce

**Abstract:** When Sigmund Freud developed his psychoanalytic theory, he believed that the human psyche was like an iceberg – the majority of it lay below the level of consciousness. Elements in the subconscious mind act upon the conscious mind, emerging in behaviors not fully understood by the people committing them. To Freud, the subconscious motivators of behavior were predominately sex and aggression, and most behavior was an attempt to deal with frustrations regarding these motivators. Such is the case in D.H. Lawrence's "The Prussian Officer." The main characters, the officer and his orderly, are manipulated by the powers of their subconscious desires - for one, sex; for the other, self-preservation. The officer is sexually attracted to his orderly, but refuses to acknowledge it. His subconscious desires give rise to frustration and irritation, leading to extreme violence against the orderly. The orderly, in turn, becomes primitive and animalistic in his behavior, separating his human mind from his body, all in a subconscious attempt to protect himself from the officer's aggression.

## 466

**Title:** EFolio

**Presenter(s):** Craig Powers

**Department:** Business Department

**Advisor:** Joann Segovia

**Abstract:** This presentation explores eFolio, an electronic portfolio system available to citizens of Minnesota. EFolio provides opportunities for individuals, such as students or educators, to highlight information including educational achievements and work experiences. The electronic portfolios can be utilized for a variety of applications including, but not limited to, applying for scholarships, providing a supplement to a résumé, or posting students' work samples for assessment.

## 467

**Title:** Dramatism and George W. Bush's September Eleventh Address

**Presenter(s):** Alissa Helm

**Department:** CSFT

**Advisor:** Jason Anderson

**Abstract:** Kenneth Burke, a leading dramatism theorist, thought that language was more than a mode of persuasion. He believed rhetoric or language and other symbols we use are responsible for creating our realities and helping us make sense of our world and experiences. There are several theories and concepts associated with the theory of dramatism. In my paper, I apply Burke's ideas of identification and guilt redemption to analyze George W. Bush's September 11, 2001 Address to the Nation. Burke's theories of identification and guilt redemption refer to our need as humans to identify with others and our constant struggle to relieve guilt created by negatives in our language, our search for perfection, and the hierarchy in society we create through language. Bush employs these theories to identify with the American public and relieve guilt after the events of 9/11.

## 468

**Title:** Reproductive and Sexual Rights of Women

**Presenter(s):** Jill Forde

**Department:** Political Science

**Advisor:** Andrew Conteh

**Abstract:** There are many international institutions put in place to protect the reproductive and sexual rights of women; however, these rights are still violated. This presentation will discuss the protection and violation of the reproductive and sexual rights of women.

## 469

**Title:** The Effect of a 150 kT Nuclear Weapon on Sabin, MN

**Presenter(s):** Jennifer Taves, Matthew Duval

**Department:** Physics

**Advisor:** Ananda Shastri

**Abstract:** With the existing worldwide concern about nuclear weapon testing and the threat nuclear weapons pose, we decided to research what affect the detonation of a 150 kT nuclear warhead would have on the small town of Sabin, MN. We researched blast effects, thermal effects, and radiation effects at the hypocenter and at several different radii. We found that a nuclear weapon of that size would nearly demolish the entire town and effect much of the surrounding area. The goal of our research is to bring awareness about how life would change in this area if the United States engaged in nuclear war.

## 470

**Title:** White Cloud Response to Skin Extract Treated With Protease

**Presenter(s):** Justin Karst, Jeff Miller, Stacey Miller, Rachel Savaloja

**Department:** Biosciences

**Advisor:** Brian Wisenden

**Abstract:** The response of fish to chemical alarm cues has been well studied. Although it commonly agreed that epidermal "club cells" are responsible for producing the chemical cue. There are two competing hypotheses about the identity of chemical responsible for these responses: (1) that the active ingredient is hypoxanthine-3N-oxide or (2) that it is a protein. *Tanichthys albonubes*, commonly referred to as white cloud fish, exhibits strong responses to skin extracts. By measuring the response of *T. albonubes* to skin extract treated with a protease, we can determine if the active ingredient in minnow alarm cue is a protein.

## 471

**Title:** Matrix Metalloproteinase 9 activity by phenylephrine requires Sodium Hydrogen Exchanger 1

**Presenter(s):**

**Department:** Biosciences

**Advisor:** Joseph Provost

**Abstract:** Matrix metalloproteinases (MMP) are a group of enzymes that play a critical role in digesting the extracellular matrix. Degradation of the extracellular matrix by MMP in migrating cells provides a vital function for tumor metastasis and angiogenesis. The link between extracellular MMP activity and the sodium hydrogen exchanger (NHE) has been suggested but not yet identified. We studied the relationship between NHE and MMP activity in CCL39 fibroblasts containing NHE1, PS120 cells (NHE1 null derived from CCL39 cells) and PS127 cells (PS120 cells expressing NHE1). Initial studies with CCL39 cells found resting cells had moderate MMP9 activity. This activity increased 2.5 fold after 12 hour phenylephrine (PE) stimulation. Western blot analysis of culture media identified MMP9. We found MMP9 activity to be dependent upon the expression and activation of NHE1. In both CCL39 and PS127 cells, MMP9 was activated in the presence of 100  $\mu$ M PE. In PS120 cells no MMP was activated in the presence of PE. Incubation of cells with amiloride prior to PE addition also resulted in a notable decrease in MMP9 activation compared to control cells. Incubation of cells with 0.5% butanol prior to PE stimulation decreased MMP9 activity similar to the control level, while expression of either dominant negative phospholipase D1 or 2 caused a decrease in MMP9 activity less than untransfected cells. This work, for the first time, describes an agonist-induced relationship between NHE1 and MMP and a new potential role for NHE1 in tumor formation. This work was supported by a grant from the NIH, Award number 1 R15 HL074924-01A1.

## 472

**Title:** Darfur: Is it Genocide?

**Presenter(s):** Jessica Heiberg

**Department:** Political Science

**Advisor:** Andrew Conteh

**Abstract:** The conflict in Darfur has caused many deaths since it began in 2003. There is ongoing debate on whether or not it should be termed genocide. Through my research of the region, genocide, and other analysis I have determined that it can be called genocide.

## 473

**Title:** Regulation of ERK, Stress Fiber Formation, and NHE in CCL39 Fibroblasts by Urokinase Plasminogen Activator.

**Presenter(s):** Lisa Magstadt

**Department:** Biosciences

**Advisor:** Mark Wallert

**Abstract:** Cell migration requires control of several signaling mechanisms including reorganization of the actin cytoskeleton and adhesion to the extracellular matrix. Urokinase plasminogen activator (uPA) is a thrombolytic agent that possesses a role both dependent and independent of binding to its receptor, uPAR. Receptor activation of uPAR localizes proteolytic activity to the leading edge of cellular migration and facilitates cellular penetration of tissue boundaries. Expression of both uPA and uPAR correlates with invasive cancer cell phenotype, however, the mechanism by which uPAR transduces its signals to regulate cell migration remains largely uncharacterized. Our focus is to investigate the signaling of uPA in CCL39 fibroblasts to determine a role for NHE in cytoskeletal remodeling and cell migratory events. ERK activation by uPA stimulation has been shown in a few cell lines. Smooth muscle cell inhibition of the sodium hydrogen exchanger (NHE) reduces cell proliferation and migration caused by uPA. Here we report that both the amino terminal fragment and recombinant uPA stimulate ERK phosphorylation in a bimodal fashion. The early peak of activity was observed within 5 min. and a later chronic stimulation of ERK was seen after 190 min. Both forms of uPA induced the formation of stress fibers in CCL39 fibroblasts and the amino terminal fragment of uPA induced over a 2 fold increase in NHE transport. These findings identify a potential new signaling role for uPA and suggest an important role for NHE in cell migration and invasion. This work was supported from a NIH Award 1 R15 HL074924-01A1.

## 474

**Title:** The Last Philosopher: Marquis de Condorcet and the Enlightenment

**Presenter(s):** David Bard

**Department:** History

**Advisor:** Ken Smemo

**Abstract:** I am taking a paper I wrote for the History of Enlightenment and working it into a concise, informative, and hopefully interesting piece on the Marquis de Condorcet, the last philosopher.

#### 475

**Title:** Nigeria  
**Presenter(s):**  
**Department:** International Programs  
**Advisor:** Kimberly Cillette  
**Abstract:** This presentation will be on Nigerian history and cultures.

#### 476

**Title:** U.S. Automobile Industry  
**Presenter(s):** Ananda Gurung  
**Department:** Economics  
**Advisor:** Oscar Flores  
**Abstract:** Analysis of past and recent trends in US automobile industry.

#### 477

**Title:** The Cents of Mental Health  
**Presenter(s):**  
**Department:** Sociology and Criminal Justice  
**Advisor:** Sue Humphers-Ginther  
**Abstract:** During some point in life individuals may find themselves with a high degree of mental stress. Items that trigger the feeling of stress vary from situation to situation but in many cases this item revolves around money. It seems that personal finances may fluctuate just as much as the emotional stability of an individual. Money plays a vital resource in our lives by providing a stable way to acquire basic needs. However, it seems that individuals who suffer from mental illness may also suffer financially. I will compare various incomes from a variety of sources to determine whether household income is associated with mental illness. As a result of these findings it would be possible for other organizations to see the correlation between these issues and make steps in the direction to lessen the problem.

#### 478

**Title:** History of Usenet  
**Presenter(s):** Jessica Heiberg  
**Department:** CSIS  
**Advisor:** Daniel Brekke  
**Abstract:** Usenet has had a large impact on the research community by making communications between large universities and companies easier. This poster will have a time line and descriptions of Usenet since its inception.

#### 479

**Title:** Tessa Terrace Town Homes Development Project  
**Presenter(s):** Emilie Mihal, Scott Knutson, Jeremy Puetz  
**Department:** Technology (Construction Management)  
**Advisor:** Norma Andersen  
**Abstract:** This project is for our capstone class in Construction Management. We will be presenting a description the project of our own design, and how we would build it.

#### 480

**Title:** Reading the MSUM Landscape: The Ideology of Campus Tours  
**Presenter(s):** Christina M. Schwarz  
**Department:** Anthropology  
**Advisor:** Rinita Dalan  
**Abstract:** The ideologies behind campus tours send messages to prospective students and their families about our campus. A routine time, script, and route reflects on certain features that promote a new and intriguing life for prospective students. By analyzing maps of this route and training scripts, I will reflect upon certain illustrated symbols of landscape and material representation that is sequenced throughout a daily tour of MSUM.

#### 481

**Title:** Strain-Counterstrain Manual Therapy  
**Presenter(s):** Dustin Schlichting  
**Department:** Health and Physical Education  
**Advisor:** Chris Huot  
**Abstract:**

#### 482

**Title:** Spectral Analysis  
**Presenter(s):** Mike Caspers, Elizabeth Hegge  
**Department:** Physics  
**Advisor:** Steve lindaas  
**Abstract:** Using a photomultiplier tube and multichannel analyzer we are able to detect gamma ray energies produced by several different radioactive sources. The photomultiplier tube converts photons into current which combines to produce large current pulses and then changes into a voltage pulse. Our data is given to us in the form of graphs of gamma ray energy and the frequency at each energy level. The number of times that a certain energy level is recorded will produce a characteristic spectrum. We are able to use the decay properties of a source to measure the gamma ray energies that they produce. Decay occurs when an atom loses energy and this energy is given off in the form of light, which are the high energy gamma rays we detect. Spectrums make it possible to determine sources that are unknown. We then use this data along with each peaks width at half max to determine the fractional resolution of the detector. Graphing a substance at different levels allows us to fit a binomial and a Gaussian curve to determine at what level the Gaussian equation fails according to our calculations. Using the data collected and spectral analysis we will determine unknown radioactive samples and explain the Compton effect.

#### 483

**Title:** How Iris Murdoch's A Severed Head satirizes Freudian views  
**Presenter(s):**  
**Department:** English  
**Advisor:** Sandra Pearce  
**Abstract:**



#### 484

**Title:** Having Students Do Hands-On Work as Opposed to Simply Following Instructions Improves Their Comprehension on the Subject

**Presenter(s):** Evelyn Fuentes

**Department:** Biosciences

**Advisor:** David Rodenbaugh

**Abstract:** Having Students Do Hands-On Work as Opposed to Simply Following Instructions Improves Their Comprehension on the Subject Evelyn Fuentes\*, Autumn A. Wagner\*, and David W. Rodenbaugh \*These authors contribute equally to this work. Department of Biosciences, Minnesota State University Moorhead, Moorhead, MN 56563 Students should learn to comprehend class material not just memorize it. Involving students in the subject material helps the students' comprehension of complex physiological concepts. Traditionally, laboratory exercises have been used to involve students in the subject material. Designing a lab, as opposed to just following along and filling in blanks in a laboratory, is much more engaging for students. The purpose of this study was to determine if student learning and retention is enhanced by creating physiology labs as opposed to just performing them. Two students were instructed to create a spirometry lab to be performed by an undergraduate physiology class. A pre and post-lab quiz were given to the students who created the lab versus the students who just performed it. In the process, the students learned the terminology and concepts associated with the spirometry lab. The level of comprehension of the subject will be evaluated through the quizzes.

#### 485

**Title:** Research Proposal: Effects of UV Radiation on the DNA of Local Liverwort, *Marchantia polymorpha*, Populations

**Presenter(s):** Andrew Clapp

**Department:** Biosciences

**Advisor:** Linda Fuselier

**Abstract:** Liverworts, *Marchantia polymorpha*, are normally found in shady, moist areas and are capable of both sexual and asexual reproduction. Many mountainous species contain a UV-absorbing compound that is presumed to protect them from UV radiation. The purpose of my research will be to find the effects of UV radiation on the DNA of the asexual progeny of liverworts that have been collected from several populations at the Minnesota State University Moorhead Regional Science Center. The liverwort gemmae will be planted in a laboratory setting. They then will be randomly selected to either be a control or be subjected to UV radiation. A comet assay will be used to find the extent of damage that has occurred in each individual.

#### 486

**Title:** Research Proposal: Do the club cells in minnows have a secondary UV radiation protection function?

**Presenter(s):** Chuck Johnson

**Department:** Bio Science

**Advisor:** Michelle Malott

**Abstract:** Minnows contain club cells, which produce an alarm scent in the water informing the rest of the population that a predator has eaten one of its own species. Because these club cells do not benefit the individual, and they are only triggered by the individual's death or severe injury, it is hypothesized that they might serve another secondary function. We propose that club cells in the skin of local minnow populations have a secondary function that protects the minnows from UV radiation. To procure samples that do not have club cells, traps will be placed in Minnesota lakes this spring during mating season to catch males that do not produce the club cells at this time. Females with club cells will be collected with the males. Both the females and males will be stressed with UV light, with the intention of producing DNA damage. Comet assays will be used to determine if UV damage is more or less prevalent in the DNA of minnow skin cells that contain club cells vs. minnows that do not.

#### 488

**Title:** Research Proposal: Chemical Alarm Cues in Cannibalism Avoidance in Northern Pike, *Esox lucius*

**Presenter(s):** Adam Rasmussen

**Department:** Bioscience

**Advisor:** Brian Wisenden

**Abstract:** This is a research proposal on the role of chemical alarm cues in cannibalism avoidance in northern pike, *Esox lucius*. Pike prey on any fish smaller than themselves, including other pike. It is known that adult pike inadvertently give off an odor after consuming and digesting their prey that will alert potential prey species other than pike to escape predation. However, it is not known if juvenile pike respond to this same alarm cue. Juvenile pike will be exposed to this alarm odor from adult pike and tested to see whether or not they can be trained to avoid cannibalism from larger pike.

#### 489

**Title:** Student Led IEP Meetings

**Presenter(s):** Jara Larson, Amy Blaine

**Department:** Special Education

**Advisor:** Steven Street

**Abstract:** This presentation will inform educators, parents, and others involved with students with disabilities about student led Individualized Educational Plan (IEP) meetings. When a student leads their own IEP meeting, it has been shown they are empowered and able to advocate for themselves. Information presented will include things such as: how to teach a student to lead their own meeting, at what age to begin, and the effects of students leading their meeting, amongst others.

**490**

**Title:** Effects of a Nuclear Weapon

**Presenter(s):**

**Department:** Physics

**Advisor:** Ananda Shastri

**Abstract:** Presentation will illustrate the effects of a nuclear weapon in a rural town.

**491**

**Title:** Ethical Optimality

**Presenter(s):** Timothy Borden-King-Jones

**Department:** Philosophy

**Advisor:** Philip Mouch

**Abstract:** Is morality an absolute, or is right action in the eye of the beholder? This is an examination of a linguistic theory applied to the process of moral decision making.

**492**

**Title:** Improving Web Application Security

**Presenter(s):** Alexander Shmyrev

**Department:** CSIS

**Advisor:** Yuri Boreisha

**Abstract:** Traditionally, security has been considered a network issue, where the firewall is the primary defense (the fortress model) or something that system administrators handle by locking down the host computers. Application architects and developers have traditionally treated security as an afterthought or as a feature to be considered as time permits — usually after performance considerations are addressed. The problem with the firewall, or fortress model, is that attacks can pass through network defenses directly to the application. A typical firewall helps to restrict traffic to HTTP, but the HTTP traffic can contain commands that exploit application vulnerabilities. Relying entirely on locking down your hosts is another unsuccessful approach. While several threats can be effectively countered at the host level, application attacks represent a serious and increasing security issue. Web application security must be addressed across the tiers and at multiple layers: securing the network, securing the host, and securing the application. It also uses the process called threat modeling, which provides a structure and rationale for the security process and allows us to evaluate security threats and identify appropriate countermeasures. A weakness in any tier or layer makes your application vulnerable to attack. Web Service Security describes enhancements to SOAP messaging to provide quality of protection through message integrity, message confidentiality, and single message authentication. These mechanisms can be used to accommodate a wide variety of security models and encryption technologies. Web Service Security also provides a general-purpose mechanism for associating security tokens with messages. No specific type of security token is required by Web Service Security. It is designed to be extensible. For example, a client might provide proof of identity and proof that they have a particular business certification. Additionally, Web Service Security describes how to encode binary security tokens.

**493**

**Title:** Piracy and the Importance of Abandonware

**Presenter(s):** Timothy Borden-King-Jones

**Department:** Philosophy

**Advisor:** Philip Mouch

**Abstract:** A discussion of the legal, economical, and moral problems with piracy. The legal and moral ramifications of abandonware, software no longer being sold/distributed buy its author(s), will also be discussed.

**494**

**Title:** Blackbody Spectroscopy

**Presenter(s):** Nick Nick

**Department:** Physics and Astronomy

**Advisor:** Steve Lindaas

**Abstract:** We are verifying Wien's displacement law using a change in electrical resistivity. Wien's law states that the temperature of a blackbody (i.e., a body that is not reflecting light, but emitting it because of its temperature) is proportional to the most intense frequency of light that it radiates. The electrical resistivity of a material is the capacity of a material to resist electrical flow due to temperature. We will measure the current through and voltage across a light bulb to determine its resistance. Using this we can determine the temperature and then compare it to the temperature predicted by Wien's law.

**495**

**Title:** Reproductive Rights: the protection and violations against the basic human right of reproduction.

**Presenter(s):** Marissa Mahanna

**Department:** Political Science

**Advisor:** Andrew Conteh

**Abstract:** The provisions and rights on human reproduction are concepts that are relatively new and have continued to develop until recently passing into international documentation. The most pressing issue is that of reproductive choice and freedom. This presentation will look at conventions and conferences dealing with reproductive rights. It will also look at two specific examples of violations of the right to reproduce: forced or coerced sterilization of the mentally disabled and China's "one child to one couple" law.

**496**

**Title:** Common Sense worth Teaching Your Kids ... "Exercise Equals Good Health"

**Presenter(s):** Hieu K. Trinh

**Department:** Sociology

**Advisor:** Sue Humphers-Ginther

**Abstract:** Why is child obesity on the rise in America? Fact is, only about 30% of parents in the United States are concerned with their children's weight. This presentation will take a heavy look into what society's contributions are to this extreme rise in obesity. Also on the "lighter" side of things will look at what measures are being taken to control it and if there has been any success in doing so.

**497**

**Title:** The Battle Over Our Sexual Intelligence: An Exploration of Various Methods of Sex Education with a Focus on Abstinence-Only Education Deficiencies

**Presenter(s):** Matthew Bakko

**Department:** Women's Studies; Sociology

**Advisor:** Michelle Stevier, Deb White

**Abstract:** Drastically diverse methods of teaching students sex education are implemented throughout the United States. Heated arguments over which method is most effective at reducing adolescent promiscuity and pregnancy rates are increasingly prevalent. This presentation will address the merits and weaknesses of these various methods with a special focus on the numerous shortcomings of abstinence-only education compared to other more effective methods.

**498**

**Title:** Color Image Analysis Software

**Presenter(s):** Alex Brandt

**Department:** Physics and Astronomy

**Advisor:** Steve Lindaas

**Abstract:** I developed software with a graphical user interface that analyzes image for color. This software is used by biologists to quantify the amounts of bone (stained red) and cartilage (stained blue) in an image. Although this program was designed with the intent of biological analysis in mind, it can easily be reconfigured for general image analysis.

**499**

**Title:** Is Mitochondrial Inheritance Tissue Specific? An Investigation into Modes of mtDNA Inheritance in Wild Type and Inbred Strains of Mice.

**Presenter(s):** Todd Nolte, Lisa Magstadt

**Department:** Biosciences

**Advisor:** Ellen Brisch

**Abstract:** Mitochondria play critical roles in the generation of metabolic energy in the form of adenosine triphosphate (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 distinct difference 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 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 its mother. Does this mean that there is no paternally inherited mtDNA? Perhaps not, however researchers have mainly focused on testing mtDNA in blood samples. To examine if inheritance patterns differ between tissues, we will collect blood, muscle, and liver tissue from both wild-type and inbred strains of mice, and from inter-type hybrid offspring of the same mice. We will sequence the mtDNA from the samples collected to determine mode of inheritance, and to determine if there is a difference in mtDNA inheritance between the different tissue types. Verifying the specificity of mitochondrial inheritance is an important step for figuring out what cellular mechanisms are required to direct the mitochondria into different tissues. This may reveal a whole new way to look at mitochondrial inheritance and ultimately show how the system is regulated.

**501**

**Title:** Sixth Grade Geometry Lesson

**Presenter(s):** Brittany Lubitz

**Department:** Math

**Advisor:** Tim Harms

**Abstract:** Any teacher knows that geometry can be a large undertaking, it can be very intimidating for new incoming teachers. Making it seem less stressful by introducing resources and explaining some new methods and using new manipulatives can increase the students success and decrease the teachers stress of teaching geometry. I will be creating a unit of sixth grade geometry, including assessments, worksheets and activities that can be used in the classroom. I will be creating my lesson according to the Minnesota standards and some textbooks from the Minnesota State University Curriculum Center as well as including the National Council of Teachers of Mathematics.

**502**

**Title:** The Impact of Grassland Management on the Abundance and Territory Size of Bobolinks (*Dolichonyx oryzivorus*)

**Presenter(s):** Megan Zadach

**Department:** Biosciences

**Advisor:** Alison Wallace

**Abstract:** The bobolink (*Dolichonyx oryzivorus*) is a grassland bird found throughout the northern United States and southern Canada during its breeding season. The grasslands in this area are periodically burned to manage and maintain the habitat. Some studies have found bobolink abundance to increase in recently burned plots of native or restored prairie, however there are no reports on the effects of burning on male territory sizes. This will be examined in a large tract of grassland in northwestern Minnesota. Territories will be determined by using the "flush" technique, and the positions of the males will be mapped after each flush. This will be performed 20 times for each male to establish an accurate size estimate of his territory. Once territories are defined, food abundance and predator threat will also be determined within the burn areas. Correlation and/or ANOVA will be used to test interactions between the time of the most recent burn, abundance, and territory size.

**503**

**Title:** Habitat Use by Tree Squirrels in a Western Minnesota Woodlot

**Presenter(s):** Stacy Wanzek

**Department:** Biosciences

**Advisor:** Donna M. Bruns Stockrahm

**Abstract:** Tree squirrels such as the gray squirrel (*Sciurus carolinensis*), fox squirrel (*S. niger*), red squirrel (*Tamiasciurus hudsonicus*), and the northern flying squirrel (*Glaucomys sabrinus*), can all be found in wooded habitats in Minnesota. Various combinations of these species are known to be sympatric. I want to look at the question of how sympatric squirrel species utilize their habitat to allow coexistence. The study will take place in a woodlot located near Rollag, Minnesota. It will be conducted at the beginning of April and possibly lasting until September. Squirrels will be trapped using Tomahawk live-traps (Model #103; 48.5 x 15.5 x 15 cm) baited with dry, ear corn. For each species of squirrel, I will be recording their location of capture, weight, tail length, and gender. Using individual identification tags, I will be able to

identify the squirrels. Habitat characteristics such as canopy diameter, deadfall, vegetation, and predator signs will be measured and recorded. For each nest tree, the height of nest, location, species of tree, species within the surrounding area, and light intensity will be measured.

## 504

**Title:** Shocking Science

**Presenter(s):** Shaina Garaas, Robert Jackson

**Department:** Physics/Biosciences

**Advisor:** Alison Wallace

**Abstract:** Make those sparks fly via induced charges and crafty capacitors. We will be exploring the science behind electricity. Participants will be engaged in a hands-on science lesson that illustrates the 5-E model.

## 505

**Title:** Reading the MSUM Landscape: Images of Power

**Presenter(s):** Anita Bender, Jessica Beard

**Department:** Anthropology/Earth Science

**Advisor:** Rinita Dalan

**Abstract:** There are many ways in which power is expressed in landscape. These manifestations of power serve to both represent and "naturalize" the formal and informal structure and culture of power. Often times the role that landscape plays to reinforce these relationships is invisible to those who move through it. Our goal is to explicitly consider the experience of these images at MSUM.

## 507

**Title:** Research Proposal : Changes in vascular plant species composition over a 26-year period on a managed tall-grass prairie.

**Presenter(s):** Paul Decker

**Department:** Biosciences

**Advisor:** Richard Pemble

**Abstract:** The North American tall-grass prairie ecosystem is nearly extinct, with very few remnants of this once vast grassland surviving to the present. One of the largest of these scattered preserves is the Bluestem Prairie remnant in Clay County, Minnesota, managed by The Nature Conservancy. A study of vascular plant species composition could provide insight into the effects of thirty years of management. Ten plots of land in the Bluestem Prairie were sampled in 1980 and again in 1995 using the releve method to describe vegetation. This method places an emphasis on obtaining a complete vascular plant species list for each plot sampled. The species lists for plots sampled in 1995 are longer than those from the same plots in 1980, and they appeared to be due to the addition of native prairie species. I propose to conduct another releve survey of the 10 stands to determine the effects of prairie management on plant species composition over the past decade. I also intend to analyze data from previous surveys to determine possible changes in plant diversity and to compare the results to data collected during my proposed study, scheduled for summer 2006.

## 509

**Title:** A Naturalistic Inquiry of an Online Community

**Presenter(s):** Justin Winter

**Department:** Communication Studies

**Advisor:** Tim Borchers

**Abstract:** This will be a naturalistic inquiry of communication taking place online. I will be detailing my observations and inquiries into the online communities of MMORPG's (massive multi-player online role-playing games). Further, I will discuss how these participants create their own cultures online, while overcoming cultural diversity.

## 510

**Title:** The Use of Child Soldiers: The Colombian Experience

**Presenter(s):** Becky Johnson

**Department:** Political Science

**Advisor:** Andrew Conteh

**Abstract:** The international arena today has faced many issues and hardships that have affected children across the globe, but no one thing has affected them more than armed conflict and the effect it has caused. This presentation will discuss what armed conflict is and the impact it has had and still has on hundreds of thousands of children today. I have placed a specific emphasis on the Latin American country of Colombia to show a different aspect of this world crisis and the effect it has had on Colombian children and their way of life. I will also discuss the provisions that have been made at an international level, such as the Convention on the Rights of the Child, which are making progress in protecting the children of this world. This military use of children is a grave and widespread issue that affects many children and their families every day and it needs to be seriously looked at and eventually terminated before these children lose themselves in violence and war.

## 511

**Title:** Sexual Size Dimorphism & Optimal Life History Strategies in Common Green Darner

**Presenter(s):** Josh Lunski, Paul Decker

**Department:** Biosciences

**Advisor:** Linda Fuselier

**Abstract:** Many species of dragonfly exhibit sexual dimorphism and biased sex ratios in adult populations. Optimization models predict that, in species with territorial adults, males will be larger than females at emergence, and larger male size is related to higher foraging rates coupled with increased predation risk and higher male mortality during the larval stage. We tested these predictions for a territorial dragonfly using a suite of lab and field experiments. We measured sex differences in mass gain and foraging activity in the lab, and measured size at emergence for female and male dragonflies in the field. Larvae were collected from ponds in Minnesota and reared on a standard diet to measure mass gain. Activity was quantified as amount of time in motion, distance traveled, and numbers of labial strikes observed in filmed foraging trials. Exuviae from 5 ponds were collected and measured to compare size at emergence. Males gained more mass than females in the lab experiment, and males spent more time in motion and moved longer distances than females in foraging trials. Males were larger than females at emergence, but sex ratios at emergence were not significantly different from 1:1. Our results support predictions of models of life history optimization, but sex differences in larval growth and feeding strategies did not translate into biased sex ratios at emergence.

## 512

**Title:** The physics of using your head in a game of soccer

**Presenter(s):** Kelsey Carvell

**Department:** Physics and Astronomy

**Advisor:** Matt Craig

**Abstract:** The presentation will include models, data, and analysis of soccer ball movement before and after it contacts the athlete. The use of physical relationships will predict and explain ball movement. The presentation is for anyone with interest!

## 513

**Title:** A Research Proposal: Space Utilization by Sympatric Tree Squirrel Species in a Western Minnesota Woodlot

**Presenter(s):** Margo Kramer

**Department:** Biosciences

**Advisor:** Donna M. Bruns Stockrahm

**Abstract:** Wooded habitats in Minnesota are often home to a number of different tree squirrel species. In habitats where species are sympatric, the potential for competition exists. How do these species use the space available to allow coexistence? I will be looking at space utilization among sympatric tree squirrel species in a western Minnesota woodlot located near Rollag. The fieldwork will be conducted starting in April and possibly lasting until September 2006. Squirrels will be trapped using Tomahawk live-traps (Model #103; 48.5 x 15.5 x 15 cm) baited with dry, ear corn. Each individual squirrel will be identified with a personal identification tag. Location of capture, weight, tail length, and gender will be recorded for each captured squirrel. To evaluate space utilization, locations of captures, pattern of captures, and visual observations will be used. If funding permits, radiotelemetry will also be used to track the movements of the squirrels.

## 514

**Title:** Soil Separates for Magnetic Analyses of Archaeological Soils

**Presenter(s):** Jessica Beard

**Department:** Anthropology and Earth Science

**Advisor:** Rinita Dalan

**Abstract:** Soils from archaeological sites can yield information about past human occupation. Different size fractions can be examined for cultural materials. This poster will illustrate a methodology used for separating soils into coarse (fine sand and above) and fine (coarse silt and smaller) particle sizes. Magnetic tests that can be applied to these size separates in order to yield cultural information are also considered.

## 515

**Title:** Nuclear Weapon Detonation

**Presenter(s):** Jon Nilson

**Department:** Honor

**Advisor:** Anadi Shastri

**Abstract:** The project will be to discuss the effects of a nuclear explosion over my hometown: Casselton, ND. Since Casselton has a population of approximately 2000 people, the "pretend bomb" detonating will be of a 150 kT size. The project will include a poster outlining the process and a paper that will detail the effects in the town, as well as the farms and water supplies surrounding the town. Visual aids will be used to demonstrate differing nuclear effects on sites around the town.

## 516

**Title:** A Non-Radioactive Assay to Determine Isoform Activation of PLD by Phenylephrine in CCL39 Cells

**Presenter(s):**

**Department:** Bioscience

**Advisor:** Joe Provost

**Abstract:** Phospholipase D (PLD) is an enzyme found in the cells of higher mammals and plants. The process of PLD acting on phosphatidylcholine (PC) to produce phosphatidic acid (PA) and choline is important in cell signaling. PA acts as a bioactive lipid activating a number of protein kinases and other effectors and can be further metabolized to diacylglycerol, an activator of protein kinase C (PKC). There are two isoforms of PLD, PLD1 and PLD2. PLD1 activity is activated by the small G proteins RhoA and ARF as well as PKC, while PLD2 is constitutively active and can be stimulated by ARF. There is great interest in understanding which isoforms is activated by various hormones. Therefore, several different methods have been developed to determine its enzymatic activity. The current method used to determine enzymatic activity is an in vivo PLD assay using radioactive lipids. Our plan is to use fluorescent labels to measure PLD activity in a non-radioactive assay. The three types of fluorescent lipids used in these experiments. Two free fatty acids 4,4-difluoro-5-octyl-4-bora-3a,4a-diaza-s-indacene-3-pentanoic acid (BODIPY C8, C5); 4,4-difluoro-5-methyl-4-bora-3a,4a-diaza-s-indacene-3-dodecanoic acid (BODIPY C1, C12); and 1-myristoyl-2-[(7-nitro-2-1, 3-benzoxadiazol-4-yl)amino]dodecanoyl]-sn-glycero-3-phosphocholine (NBD-PC). We found that both NBD-PC and BODIPY C1, C12 but not BODIPY C8, C5 were incorporated into the membrane as PC. Furthermore, there is a dose and time dependent manner in the labeling of starved CCL39 fibroblasts. We plan to show which PLD isoform(s) is activated by stress hormones in CCL39 cells using this technique

517

**Title:** Population Genetic Structure and the Importance of Sex in a Thallose Liverwort: DNA Fingerprinting with ISSRs.

**Presenter(s):** Kenna Hairgrove, Eun Hyuk Chang, Shannon Wendroth

**Department:** Biosciences

**Advisor:** Malott, Fuselier Michelle, Linda

**Abstract:** Populations that incorporate sexual reproduction have higher genetic variability and thus, greater evolutionary potential. Clonal plants, such as bryophytes, reproduce both sexually and asexually, but single-sex populations that rely entirely on asexual reproduction for population persistence are common within this plant group. Through a field and laboratory study, we investigated the degree to which a common liverwort, *Marchantia polymorpha*, incorporates sexual progeny into its population. We hypothesized that the population would exhibit a clumped distribution with low genetic variation within patches of plants. Further, we expected that genetic variation among patches would depend on patch size and nearest neighbor distance. We measured distances between patches of *M. polymorpha* at a creek in northern Minnesota and systematically collected plants for genotyping. We isolated DNA from plants and used PCR with intersequence simple repeat (ISSR) primers to develop a genotyping system for individuals. Plants in this population were clumped in distribution with highly variable nearest neighbor distances. The ISSR system was successful for genotyping individual *M. polymorpha*, and it appears that only 2-3 primers will be sufficient for detecting population genetic variation. We are in the process of genotyping plants and expect to complete data acquisition this winter.

519

**Title:** Investigating Asexual Fitness in *Utricularia vulgaris*

**Presenter(s):** Kenna Hairgrove

**Department:** Biosciences

**Advisor:** Linda Fuselier

**Abstract:** Turions are an asexual propagule located on the tip of the plant. Turions may be the most important investment in future reproduction of *Utricularia v.* because they overwinter and grow the next season. Turions exhibit variation in size indicating variation in investment in asexual propagation. *Utricularia* also have "traps" or carnivorous sacs to trap organisms. The more traps the plant invests in, the more nitrogen intake, and ultimately, more growth. The question I aim to answer is whether or not the size of turions matter in reproductive fitness. Do larger turions result in a larger plant that grows faster than a plant with a smaller turion?

520

**Title:** Red Lake Nation Tribal Enrollment

**Presenter(s):** Lucy Barret, Charlys Blue, Pam Martin, Mary Head, Collette Maxwell

**Department:** Sociology

**Advisor:** Karen Branden

**Abstract:** The Red Lake Nation Tribal Council requested research be completed on tribal enrollment issues related to the Red Lake tribe. Students, faculty and staff have completed a survey and have been gathering data from tribal members. This presentation will offer some preliminary results of this research and discuss Anishinaabe approaches to tribal membership and scientific research.

521

**Title:** Use of the Electron Microprobe to characterize lithic and ceramic fragments from regional archaeological sites

**Presenter(s):** Avery Cota, Anthony Larson

**Department:** Anthropology and Earth Science

**Advisor:** Russell Colson

**Abstract:** We will use the JEOL-733 electron microprobe to examine ceramic and lithic fragments from the Sprunk site 32CS4478 dated to 1450A.D.  $\pm$  50 years. With the use of the electron microprobe we will obtain petrographic, chemical, and physical information about several ceramic and lithic fragments. This data will illuminate the provenance of lithic fragments and possible ceramic trade. Previous studies have identified several varieties of lithic particles that were used for tool making in the upper Midwest. By measuring the chemical composition of these fragments, we will determine whether the classification of these particles truly represent unique source materials. Through the use of the electron microprobe we will be analyzing the chemical compositions of several different lithic fragments. This will help us to determine whether or not they were derived from a unique source. MSUM researchers discovered two styles of ceramics at the Sprunk site. By measuring their chemical composition we hope to determine whether they were manufactured with the same or different materials. This will help identify whether or not the ceramics were imported or locally derived.

## 522

**Title:** Having students build a model of the cardiovascular system enhances comprehension of difficult concepts in physiology.

**Presenter(s):** Ryan Thordal

**Department:** Biosciences

**Advisor:** David Rodenbaugh

**Abstract:** A model that simulates the cardiovascular system was constructed by an upperclass student. The model was built using inexpensive lab supplies and was simple to put together. The student quickly learned that getting everything to work in a manner that accurately models cardiovascular physiology is more complex. The cardiovascular model was constructed to illustrate advanced concepts including vascular compliance, the significance of venous return and the role of the muscle pump and how the components (heart rate, stroke volume) contribute to cardiac output. Creating physical models allows students to appreciate the complexity of many life processes, including the heart. Problem solving is one skill many classes fail to teach, yet it is one skill that most students will rely on as they continue in careers in the life sciences. Building and then troubleshooting the model to get it to work is an excellent way to teach these skills. Most importantly, construction of this model gets students to appreciate that humanity can send a man to the moon, clone a sheep, but all of our technology and scientific accomplishments has still not yielded a mechanical heart that perfectly simulates what the human body does.

## 523

**Title:** Can You Hear Me Now? The Science of Sound

**Presenter(s):** Nandini Katti, Justin McFadden

**Department:** Physics/Biosciences

**Advisor:** Alison Wallace

**Abstract:** This workshop will consist of a series of demonstrations that will investigate sound using air guns, drums, and singing rods. Workshop participants will be engaged in a hands-on science lesson that illustrates the 5-E model of science teaching and learning.

## 524

**Title:** Now I See the Light!

**Presenter(s):** Melissa Radniecki, Natalie Lehner

**Department:** Physics/Biosciences

**Advisor:** Alison Wallace

**Abstract:** David Copperfield, watch out! Come and see ways to make things appear, disappear, and change color before your eyes. Workshop participants will be engaged in a hands-on science lesson that illustrates the 5-E model of science teaching and learning.

## 525

**Title:** Pump Me Up: the Physics of Pressure

**Presenter(s):** Jennie Mounsdon, Micki Ecklund

**Department:** Physics/Biosciences

**Advisor:** Alison Wallace

**Abstract:** Expand, explode, and explain all things pressure! Workshop participants will be engaged in a hands-on science lesson that illustrates the 5-E model of science teaching and learning. Demonstrations along with audience participation will take place.

## 526

**Title:** Using Gel Electrophoresis to Tell if Corn Chips are Made From Genetically Modified Corn

**Presenter(s):** Char Binstock, Barbara Michel

**Department:** Biosciences

**Advisor:** Alison Wallace

**Abstract:** This experiment was undertaken to investigate which popular brands of corn chips were made with genetically modified corn. We answered this question by first extracting the DNA from three different popular varieties of corn chips. After this DNA was multiplied using PCR, we added special primers to it to tell if it was a plant product or a GMO one. We ran the three samples of corn chip DNA through an electrophoresis gel to see if they stopped at the GMO primer mark, which would mean that they were made with genetically modified corn. We found that all three brands of corn chips we investigated (Tostitos, Beritos, and Superchips) were made with GMO corn.

## 527

**Title:** Newborn Screenings: Are changes needed to benefit society?

**Presenter(s):** Chelsea Mick Mick

**Department:** Sociology

**Advisor:** Sue Humphers-Ginther

**Abstract:**

## 528

**Title:** A Comparison of Morphological and Genetic Variation Among Four Local Populations of Big Bluestem (*Andropogon gerardii*)

**Presenter(s):** Cassandra Kramer, Crystal Arnold, Mariah Clements, Anil Bhatta

**Department:** Biosciences

**Advisor:** Alison Wallace

**Abstract:** It is important to consider the level of genetic variation and local adaptation when gathering seeds for prairie restorations. This experiment was conducted in order to determine if there are statistically significant morphological and/or genetic differences among local populations of *Andropogon gerardii* (Big Bluestem). In order to determine this, *A. gerardii* was collected from four different locations: "invasion" of a municipal front yard dominated by Kentucky bluegrass; municipal back yard garden planting; native prairie; and rural roadside. Various morphological measurements were recorded on the adult plants in October, 2005. An ANOVA test and pairwise comparisons determined the front yard, roadside, and native prairie populations to be morphologically different from one another. Analyses of genetic differences using randomly amplified polymorphic DNA analysis are currently underway, and future common garden experiments that will examine the role of environmental variation are planned. Previous studies on bluestem populations in Ohio and Oklahoma suggest that the genetic variation within these populations approaches that of the variation among different populations of *A. gerardii*.

## 529

**Title:** Sex Education in the United States

**Presenter(s):**

**Department:** Sociology

**Advisor:** Michael Hughey

**Abstract:** This presentation will provide a historical perspective on the sex education debate in the United States from the post-Kinsey era of the 1950's through today. It will examine socio-political forces that have fueled much of the debate, and it will illustrate how these factors have influenced our current sexual climate in regards to sex education. This presentation will also discuss current research that displays the need for a comprehensive approach to sex ed.

## 530

**Title:**  $\beta$ -1 Adrenergic Activation of ERK by Phospholipase D is Ras Dependant

**Presenter(s):** Matthew Duval

**Department:** Biosciences

**Advisor:** Joseph Provost

**Abstract:** Phospholipase D (PLD) is considered an important signaling molecule in many growth factor pathways. PLD converts phosphatidylcholine into choline and phosphatidic acid (PA). The PA generated by PLD is thought to recruit Raf to the lipid rafts of cell membranes leading to stimulation of growth factor signaling complexes. Previous experiments in our laboratory have shown that the addition of primary butanol inhibits ERK activation by blocking PA production. While this work suggests that PLD is involved in the activation of the ERK signaling pathway it does not explain its mechanism. To investigate the role of PLD in ERK activation, two short-chain, cell-permeable phosphatidic acids (1,2-Dihexanoyl-sn-Glycero-3-Phosphate and 1,2-Dilauroyl-sn-Glycero-3-Phosphate) were incubated at several times and concentrations with CCL39 Chinese hamster lung fibroblasts. Both short chain phosphatidic acids (scPA) are able to act as endogenously added PLD product. Both the 6 and 12 acyl scPA stimulated ERK activation in a dose and time dependent manner with maximum ERK activation observed with the 6 acyl scPA. Ras activation pull down assays conducted with phenylephrine (PE) stimulating cells showed Ras activation. When a primary butanol was added prior to stimulation, PE did not activate Ras. Additional evidence for a Ras dependent PLD-ERK activation was determined with the use of dominant negative Ras (D/N Ras). Expression of D/N Ras blocked activation of ERK by PE. The ability of D/N Ras to inhibit PA activation of ERK was also investigated. This is a novel mechanism for PLD involvement in growth factor pathways. This work was supported from a grant from the NIH, Award number 1 R15 HL074924-01A1.

## 531

**Title:** Health Care and Advertising

**Presenter(s):** Jessica Hausauer

**Department:** Sociology

**Advisor:** Sue Humphers-Ginther

**Abstract:** This paper will examine the role of advertising and marketing in health care. The implications of advertising illness and the cost that goes in to such efforts will be discussed.

## 532

**Title:** International Business Trip to China

**Presenter(s):**

**Department:** Business

**Advisor:** Ruth Lumb

**Abstract:** We will explore the differences between american and chinese culture, take a journey through the vast regions of eastern asia, and see many historical findings and wonders of the world.



### 533

**Title:** Boundary Issues in Faculty-Student Relationships

**Presenter(s):** Gerri Stowman

**Department:** Psychiatry/Student Affairs

**Advisor:** Dr. S. Michael Plaut & Mark Vinz

**Abstract:** Boundary issues in professional relationships have received increased scrutiny in recent years. This presentation will use case vignettes (creative nonfiction and composites) to illustrate ethical and legal concerns about sexual relationships between faculty and students under their authority.

### 534

**Title:** Benefits and Consequences to Hormone Replacement Therapy

**Presenter(s):** Jerra Boardman

**Department:**

**Advisor:** Sue Humphers-Ginther

**Abstract:** Estrogen plays a huge role in women's lives. Research is just starting to pick up momentum as to the side effects of hormone replacement therapy. There are many good points to using hormone replacement therapy, such as memory and getting through the process of menopause, but it also has serious side effects that are coming to the surface. Side effects may include heart disease for women that have existing conditions, increased blood clots and an increased risk of breast cancer. In my research I will examine the cultural benefits and consequences to hormone replacement therapy.

### 535

**Title:** Shoal response to alarm stimulus in dynamic fluid environment

**Presenter(s):** Patrick Self, Tony Stumbo

**Department:** Biosciences

**Advisor:** Brian Wisenden

**Abstract:** Shoaling strategies in fish provide group members with anti-predator benefits including numerical dilution, early warning and predator confusion. The primary literature indicates fish form large shoals in the presence of non-directional alarm cues in a static environment; however, in the field, chemical alarm cues are subject to water current activity. A representation of field conditions can be achieved using freshwater zebra fish, *Danio rerio*, in a flow-tank to study the nature of shoaling response to chemical alarm cues. Directional movement of the shoal, aggressive vs. avoidance behavior, as well as group formation or splitting was observed in accordance with existing standards for distinguishing shoaling behavior.

### 536

**Title:** Research Proposal: Chemical alarm cues released by different species of fish in their excrement, relating to prey detection and response.

**Presenter(s):** Joseph Devorak

**Department:** Biology

**Advisor:** Brian Wisenden

**Abstract:** Minnows are able to detect an alarm cue in pike excrement that causes a response if the predator is in the area. In this experiment I will examine the responses of minnows to the excrement of other species of fish such as perch, bass, and bullhead catfish to determine if these species of fish have a more advanced digestive system that masks the scent of the minnow in their excrement, which would enhance their ability to catch prey.

### 537

**Title:** Impact of Science and Technology on the Progressive Development of International Law

**Presenter(s):**

**Department:** political science

**Advisor:** Andrew Conteh

**Abstract:** Science and technology influences the development of international law. International law must respond to science and technology as it expands. Specific subject areas in international law have been further developed by science and technology, such as international maritime law. Also, specific subject areas of international law have emerged directly as a result of technology it is meant to regulate, such as international outer space law. In this presentation I will discuss how science and technology have affected the progressive development of international maritime law and international outer space law. Both areas have been greatly influenced by science and technology, and would not be the same without it. International law will continue to progressively develop in part due to science and technology. Additionally, I will briefly speak about the importance of international law.

### 538

**Title:** The effects of a nuclear explosion over the Fargo-Moorhead area

**Presenter(s):** Sarah Skolness

**Department:** Physics

**Advisor:** Ananda Shastri

**Abstract:** Knowing the effects of a 1-megaton nuclear bomb exploding over the Fargo- Moorhead area would help in saving lives in the case of such an event. The effects of the bombs blast, thermal, and radiation will be predicted. Humans within close proximity to the blast site will be killed instantly by the gamma rays from the blast itself. The people who did not die from the blast or thermal effects will start to feel the effects of radiation. The bomb will also release widespread radioactive material into the environment where the radioactivity can cause adverse effects for centuries in locations very distant from the detonation site. The entire human populace does not understand the full nature of the threat of nuclear warfare. Increasing the knowledge will increase the awareness to society of the damage and destruction mankind can inflict. A nuclear bomb is the most devastating weapon of mass destruction and awareness of destruction will hopefully prevent future usage.

539

**Title:** The Real Scorpion King

**Presenter(s):** Nicole Reisdorf

**Department:** Anthropology and Earth Science

**Advisor:** Mike Michlovic

**Abstract:** The "Scorpion King" is a fictional Hollywood movie, but Scorpion was a real Ancient Egyptian king. The Scorpion King lived during the pre-dynastic age, before Egypt was one unified kingdom. The Scorpion King is known to us through the work of James Edward Quibell, an archaeologist, who discovered several tombs in Hieraconpolis, a pre-dynastic city in Upper Egypt. In some of the tombs he found artifacts of a King Scorpion, and the artifacts of a King Narmer. The tags in the tomb of King Scorpion generated a heated debate on the beginning of writing. Questions remain as to who Scorpion really was, and who succeeded him. However, there really was a King Scorpion who lived in Ancient Egypt and what he accomplished helped shape the subsequent history of the Near East, the cradle of western civilization.

540

**Title:** Determination of genetic variation in Liverworts by analysis of Inter-Simple-Sequence-Repeats on a Beckman-Coulter CEQ 8000.

**Presenter(s):**

**Department:** Bioscience

**Advisor:** Michelle Malott

**Abstract:** Ecological genomics is an emerging field at the interface of ecology, evolutionary biology, and genomics. The application of genetic information such as genome structure, DNA sequence, DNA variation and gene function, is helping researchers better understand the fundamental mechanisms of evolutionary and developmental biology. This, in turn, contributes to our understanding of the ecology of a variety of organisms. Most genomic applications involve isolation of DNA, PCR (polymerase chain reaction) amplification of specific regions of DNA, and the analysis of the resulting amplification products in a manner relevant to the question being asked. For example, examining the DNA sequence and determining the amount of genetic diversity of a population of organisms can be helpful in addressing questions involving reproductive behaviors, evolutionary changes and history. Traditionally, analysis of amplification products is done by gel electrophoresis and visual scoring of gels. This can be a time-laborious process when attempting to analyze, in a statistically meaningful manner, many samples (ie. different individuals) from different sample sites or locations. The current project involves the development and optimization of a method for assessing genetic variation in Liverworts (*Marchantia*) by analyzing genomic Inter-Sequence-Simple-Repeat (ISSR) using a new instrument at MSUM, the Beckman Coulter CEQ 8000. The CEQ is a capillary electrophoresis-based (CE) system that can separate PCR-generated fragments from up to 96 different samples in one run. In addition, the software associated with the CEQ can also automatically organize (called binning) the data of ISSR based on fragment patterns, generating DNA fingerprints. This project is unique in that a) there are no published results of ISSR analysis using the CEQ and, 2) the levels of genetic variation in liverworts from this area of the country is not yet known.

541

**Title:** Formation of Nanophase Metals in Quenched Silicate Glass

**Presenter(s):** Jessie Rock, Chris Johnson

**Department:** Geoscience

**Advisor:** Dr. Russell O Colson

**Abstract:** Formation of Nanophase Metals in Quenched Silicate Glass The aim of this study was to determine the origin of nanophase metals in picritic basalt samples at low  $fO_2$  and to determine whether elemental metals were dissolved in silicate melt or if they were actually tiny colloids suspended in the melt. The study examined the effects and cooling rates on nanophase metals in silicate melt at low  $O_2$  activity in the presence of carbon. An experimental mixture composed of  $SiO_2$ ,  $MgO$ ,  $CaO$ , and  $Al_2O_3$  was created in the lab to resemble picritic basalt. From this mixture, glass beads were fused in high temperature furnaces resembling magma chambers. These beads and varying amounts of Ni were placed in small graphite crucibles in the furnace where they were melted and flooded with CO to create low  $O_2$  conditions. While in the furnace, each sample was referred to as "the melt". In order to examine the effect of the initial state of nickel on the nanophase nickel particles, Ni was added to the melt in 4 ways: as a particulate metal, as NiO, as Ni wire, and as a control experiment with no Ni. It is possible that  $CO_2$ , CO or C was tied up with Ni in the melt and as it cooled and crystallized, it released carbon monoxide gas. It is also possible that during suspension, as the crystals grew, the gas partitioned into the melt. That is, the gas was incompatible with the crystals which were forming, and the melt became saturated with gas, which caused vesiculation, and the remaining nickel formed nanophase nickel during quench. So, if nickel formed during quench in this fashion, nickel size would increase, as cooling rates decreased, determining crystal growth. Cooling rates or quench methods included; slow controlled cooling, fast controlled cooling, air quenching, and drop quenching into a heat sink. When the melt solidifies or is "glassified", nanophase particles are suspended in the silicate glass. These particles could have been completely dissolved in the melt or could have been suspended in nanophase size particles. Therefore, the various forms of nickel used could yield varying sized nickel particles. For example, if the nickel was added to the melt in the form of powder vs. wire, there would be more nickel particles suspended in the glass suggesting that the form of nickel used would determine particle frequency, independent of cooling rates. In order to determine whether the nickel exists in the melt in colloidal suspension or was dissolved in the melt and formed colloids during quench, the assistance of a scanning electron microprobe is necessary. With the microprobe, the samples can be examined petrographically, and the structures and features of the metals and vesicles can be seen. This information may determine the answer to the question, "What is the origin of nanophase metals in picritic basalts?" The answer to this question is especially interesting to National Aeronautics and Space Administration (NASA) in their journey to further understand the puzzling behaviors of lunar picritic basalts which behave nearly oppositely of terrestrial basalts. NASA has funded the Minnesota State University Advanced Geology Lab, Corning Glass donated the Scanning Electron Microprobe, and the University funded the disassembly, transport, and reassembly of the microprobe.

## 542

**Title:** Female Athlete Triad

**Presenter(s):** Laura Curley

**Department:** Health & Physical Education

**Advisor:** Dawn Hammerschmidt

**Abstract:** The female athlete triad is defined as a combination of disordered eating, amenorrhea, and osteoporosis. Although a specific cause hasn't been discovered there are many theories about where the triad starts. Many believe disordered eating is at the center of the triad. While this may be at the center there are other factors that play into the triad. Such as being a competitive athlete and more specifically being involved in a sport where weight is monitored closely. It is important to know about each of the conditions separately and how they relate to each other. There is no official way to diagnose the female athlete triad but there are certain signs and implications of the disorder. It is important for athletic trainers, coaches, and team physicians to recognize the early signs of the triad to try to help prevent anything life threatening from happening.

## 544

**Title:** PLD Involvement in NHE Activation, Actin Contraction, Cellular Migration and Invasion.

**Presenter(s):** Merina Shakya, Rachel Sang

**Department:** Biosciences

**Advisor:** Joseph Provost

**Abstract:** Abnormalities in the function of both the Na<sup>+</sup>-H<sup>+</sup> exchanger isoform 1 (NHE-1) and Phospholipase D (PLD) have been linked to alterations in cytoskeletal reorganization, changes in cellular migration and enhanced tumor progression. Both growth factor and G protein-coupled receptors have independently been demonstrated to increase the activity of NHE-1 and PLD. Likewise, 1-adrenergic receptor activation in Chinese hamster lung fibroblasts (CCL 39) enhances PLD and NHE-1 activity. The purpose of our study was to investigate the relationship between PLD and the activation of NHE-1 and to explore the potential role of PLD in the regulation of cell migration, invasion and actin contraction. To do this, several experiments were (will be) performed. Changes in intracellular pH have been measured to assess NHE-1 function and determine whether PLD activation is essential for NHE stimulation. Collagen gel contraction assays were performed to measure the ability of 1-adrenergic receptor activation to stimulate actin contraction in these cells. To determine a potential role for PLD and NHE in this process, the assay was run with cells transfected with dominant negative (dn) PLD 1 or 2 on cells in the presence of EIPA (ethyl isopropyl amiloride), an inhibitor of the transport function of NHE or in cells that lack NHE-1 activity (PS120 cells). A transwell migration assay (BD Falcon) was used to measure the role of NHE-1 and the two PLD isoforms in cell migration. Finally, the increase in metastatic potential caused by the combination of increased cytoskeletal contraction and enhanced directional migration was measured using a soft agar invasion assay. This assay helped determine the involvement of the two PLD isoforms and NHE-1 in the Chinese hamster lung fibroblasts' ability to invade extracellular matrix material and form new tumors. These experiments, taken together, helped clarify the involvement of PLD in the activation of NHE-1, contraction of actin filaments, increased cell migration and cell invasion leading to tumor formation.

## 545

**Title:** Examine the role of aging and development on mitochondria oxidative stress

**Presenter(s):**

**Department:** Biology

**Advisor:** Ellen Brisch

**Abstract:** Mitochondria are vital organelles located in the cytoplasm of the eukaryotic cells, containing important enzymes for cell metabolism. The mitochondria is responsible for turning nutrient energy into ATP. During the process of generating ATP, mitochondria undergo oxidative stress. We try to find how mitochondrial oxidative stress is associated with cell aging. Oxidative stress is the buildup of too many free radicals in cells. Therefore the mitochondria theory of aging focuses on mutation of Mitochondrial DNA induced by oxidative stress as the primary cause of energy decline, most effected by aging and possible even diet.

## 546

**Title:** Developing Methods on the Beckman Coulter CEQ 8000 for Paternity Analysis to Understand Reproductive Behavior in Wild Population of Fathead Minnows (*Pimephales promelas*)

**Presenter(s):** Sarah Skolness

**Department:** Biology

**Advisor:** Michelle Malott

**Abstract:** This talk will focus on the development of a method to be used for the analysis of genetic markers using a new instrument in the laboratory that uses the technology of capillary electrophoresis. The Beckman Coulter CEQ 8000 allows for better resolution of DNA fragments and for more samples to be analyzed at a single time. The machine also allows for the automated analysis of the data results. The newly developed methods will allow for the study of fathead minnows (*Pimephales promelas*) reproductive behavior. Fathead minnows are a widely studied species of fish in a variety of fields and exhibit interesting reproductive behavior. Female fathead minnows prefer to lay eggs in nests already containing eggs; thus males benefit from guarding nests that contain eggs, not necessarily their own, in order to attract females. The reproductive behavior of guarding eggs of others is defined as alloparental care and increases the reproductive success of the allo-parent. Microsatellites are useful genetic markers that can be used to determine genetic diversity and parental assignment in a given species. The polymorphic nature of microsatellite markers is useful in estimating the number of parents contributing to a population of offspring. The use of paternity analysis will determine what percentage of the nest cannot be fertilized by the guarding male. It is expected that male fathead minnows of the Budd Lake, MN population will not have fertilized all the eggs in its guarding nest, thus, illustrating alloparental care.

**547**

**Title:** Anti-Predator Behavior in Response to Chemical Cues in *Umbra limi*

**Presenter(s):** Jeff Miller, Justin Karst, Stacey Miller

**Department:** Biology

**Advisor:** Brian Wisenden

**Abstract:** Little is known about the central mudminnow (*Umbra limi*), as it has never been studied in regards to damage-related chemical cues known to exist in some cyprinids. Though the central it is small in size and vulnerable to many predators, it is in a family of larger predator fish. Chemical cues are known to affect the behavior of some cyprinids by reducing their activity and causing them to become 'skittish.' Previous tests in the field have been unable to observe any difference in behavior when the fish were exposed to the cues. However, in the lab, the *Umbra limi* has shown a significant reaction. By using tanks with drawn on grids (three minnows per tank), we observed their level of activity and tank location both before and after either a control or treatment was introduced. After thirty trials, the data was quantified and a pattern emerged. The control, consisting simply of water, showed no significant effect on the minnows. The treatment, however, made of mudminnow skin cells, showed a significant effect on both their activity level and location. Fish exposed to the treatment had a great decrease in activity and tended towards the bottom of the tanks in our trials. This data leads us to believe that the central mudminnow is sensitive to damage-released chemicals contained in the skin cells.

**548**

**Title:** Rhetorical Criticism Analysis: The Sinking of the Kursk: A Criticism on Russian Power

**Presenter(s):** Ian Hopkins

**Department:** CMST

**Advisor:** Jason Anderson

**Abstract:** Critical rhetoric offers a new way of thinking and viewing texts. What critical rhetoric allows us to do is view an artifact in segments, so that we can get a greater understanding of the text which we are analyzing. By looking at two of the guiding principles of critical rhetoric we can take a greater look and understanding behind the power of symbols; and hold the new democratic Russia responsible for its wrong doings after the sinking of a Russian sub.

**549**

**Title:** Alternative Processes: Polaroid Film

**Presenter(s):**

**Department:** Art, Photography

**Advisor:** Lana Leishman

**Abstract:** We will show an alternative way to produce images to show the public there is more than just digital and film to produce images. Less is more.

**550**

**Title:** Photographic Alternative Processes: Polaroid lifts and transfers

**Presenter(s):**

**Department:** Art, Photography

**Advisor:** Lana Leishman

**Abstract:** We will show an alternative way to produce images to show the public there is more than just digital and film to produce images. Less is more.

**551**

**Title:** Photographic Alternative Processes

**Presenter(s):**

**Department:** Art, Photography

**Advisor:** Lana Leishman

**Abstract:** We will show an alternative way to produce images to show the public there is more than just digital and film to produce images. Less is more.

**552**

**Title:** Color Bias in On-Line Surveys A Comparison of Chromatic vs. Achromatic Selection in an Electronic Survey Tool

**Presenter(s):**

**Department:** Education

**Advisor:** Brian Smith

**Abstract:** Internet based electronic survey tools are becoming commonplace as the advantages of low cost and timeliness of data return have overcome technical difficulties. Modern computer systems allow the use of virtual line scales and color in survey tools. The introduction of color into electronic survey tools raised questions about the reliability of the collected data, as color has cultural and emotional influences on most individuals. This study of 85 subjects suggests that use of a chromatic scale in the collection of continuous variable data does not show a significant T-test difference from the same data collected using an achromatic scale. If the use of color adds pleasing aesthetics, it may influence the rate of return and increase response to additional surveys.

**553**

**Title:** Title IX in Division II

**Presenter(s):**

**Department:** Economics

**Advisor:** Greg Stutes

**Abstract:** My research focused on Title IX as it applies to equal distribution of athletic funding for women's and men's sports in the NCAA Division II. I examined the impact of Title IX on football in Division II colleges. I then investigated which sports garnered the most prestige and therefore should receive the most funding in an unrestricted situation.

## 554

**Title:** Russian Enlightenment through the effort of Catherine the Great

**Presenter(s):** Samuel Beaudoin

**Department:** History

**Advisor:** Ken Smemo

**Abstract:** Catherine the Great grew up a neglected princess in a small German principality. She became delighted with the philosophes and culture of the French Enlightenment at an early age. In her teens she was picked by the Empress of Russia to marry Peter, the next in line to be Tsar of all the Russias. After Elizabeth's death and Peter III's ascension to the throne, Catherine, with her loyalists in the army, performed a successful coup d'etat against her husband and became the lone ruler of all the Russias. She then tried to apply her Enlightenment ideas to reform Russia's backward ways and found that the ideas of the Enlightenment are much easier to discuss in French-style salons than to apply to the likeness of Russia.

## 555

**Title:** Sprunk: A Prehistoric Site on the Northeastern Plains

**Presenter(s):**

**Department:** Anthropology

**Advisor:** Mike Michlovic

**Abstract:** The Sprunk site (32CS4478) is an archaeological site located on a bluff overlooking the Maple River in southeast Cass County. This site is enclosed by a semicircular ditch. Wood charcoal, collected during excavations in 2004, provided a radiocarbon date of 1450±50. Other archaeological finds from this site include floral and faunal remains, stone tools, and at least two major ceramic wares. Here we provide an interpretation of the site in terms of how the site was used and its place in our understanding of the Northeastern Plains.

## 556

**Title:** Euthanasia

**Presenter(s):**

**Department:** Sociology

**Advisor:** Sue Humphers-Ginther

**Abstract:** Exploring euthanasia looking at ethical and religious aspects, as well as the public's opinion. What is the battle about?

## 557

**Title:** An Efficient Method for Isolating DNA from *Marchantia Polymorpha*

**Presenter(s):**

**Department:** Bioscience

**Advisor:** Michelle Malott

**Abstract:** We are interested in characterizing the genetic diversity of *Marchantia Polymorpha* in the regional, Red River Valley area. *Marchantia Polymorpha* is a type of a bryophyte plant that has a gametophyte dominant life cycle. They are found mostly in damp and shaded locations. *Marchantia Polymorphas* are some of the oldest land plants that reproduce both sexually and asexually, and may provide insight into evolutionary mechanisms in the development of sexual reproduction. Polymerase Chain Reaction (PCR) will be used to examine regions of the DNA that is variable among these

plants. We propose to determine the most efficient way of isolating genomic DNA from *Marchantia Polymorpha* using commercial kits Qiagen, Whatman, and a single solution DNA isolation method. Our goal is to determine which of the three methods will provide us with the best quality and concentration of DNA for PCR. We will present data demonstrating the quantity and quality of DNA isolated by each method along with some preliminary genetic variation data.

## 558

**Title:** Origin of Vesiculation in Lunar Mare Basalts

**Presenter(s):** Timothy Nesheim

**Department:** Geoscience

**Advisor:** Russell Colson

**Abstract:** The aim of this study was to determine the cause of vesicle formation in picritic\* basalt samples at low  $fO_2^*$ . The study examined the affects of the presence of elemental metals and cooling rates on vesiculation at low  $O_2$  activity in the presence of carbon in order to determine the source of the gas which causes vesiculation. An experimental mixture (composed of  $SiO_2$ ,  $MgO$ ,  $CaO$ , and  $Al_2O_3$ ) was created in the lab which resembles picritic basalt. From this mixture, glassed beads were fused in a high temperature furnace simulating a magma chamber. These beads were then placed in small graphite crucibles with various amounts of Ni and were placed back into the furnace where they were melted and flooded with CO to create low  $O_2$  conditions. Each sample while in the furnace was referred to as "the melt". In order to examine the affect of the state of nickel on vesiculation, Ni was added to the melt in 4 ways - as a particulate metal, as NiO, as Ni wire, as well as a control experiment with no Ni. There was suspicion that  $CO_2$ , CO or C was tied up with Ni in the melt and as it cooled and crystallized, it released the carbon as a gas which caused the vesiculation. Also, the affect of cooling rates on vesiculation was examined with methods including a very slow controlled cooling, fast controlled cooling, air quenching, and a drop quench into a heat sink. Cooling rates determine crystal growth which may be related to vesiculation and so the effects of crystallization and cooling history on vesiculation were also examined. It is possible that as crystals grew, the gas was partitioning into the melt, that is, the gas was incompatible with the forming crystals, so when the melt became saturated with gas it released some of it and vesicles were formed. With the assistance of a scanning electron microprobe, the samples can be examined petrographically, and the structures and features of the metals and vesicles can be seen. This information may determine the answer to the question, "What is the origin of vesiculation in lunar mare basalts?" The answer to this question is especially interesting to NASA in their journey to further understand the puzzling behaviors of lunar picritic basalts which behave nearly oppositely of terrestrial basalts. NASA funded the MSUM Experimental Geoscience Lab, Corning Glass donated the Scanning Electron Microprobe, and MSUM funded the disassembly, transport, and reassembly of the microprobe. \*Lunar Mare Basalts-Volcanic Igneous Rocks formed from solidified lave generated by shock-induced heating associated with the series of gigantic meteor impact events that formed the mare basins on the moon. \* $fO_2$  (Fugacity)→ the tendency of a chemical to be active, or in this case, the low chemical activity of oxygen. \*Picritic Basalt-fundamental magmatic rock containing relatively low amounts of silica and high amounts of magnesium.

## 559

**Title:** How to Choose Appropriate Vocal Repertoire.

**Presenter(s):** Stephanie Dunkirk

**Department:** Music

**Advisor:** Laurie Blunsom

**Abstract:** I will present a short overview of determining factors in choosing music for a specific voice type, including a description of the different voice types and each type's anticipated vocal concerns. I will then talk about specific requirements for undergrad level voice recitals, and why such repertoire requirements are important. Lastly, I will present a sample recital program and how each program element fits within university requirements.

## 560

**Title:** MSUM Recycling Assessment

**Presenter(s):** Paul Dustin, Karl Nisbet, James Troska, Kellan Damm, Travis Chisholm

**Department:** Industrial Technology

**Advisor:** Pam McGee

**Abstract:** Our group is assessing the current recycling program in the academic buildings here at MSUM. We are going to be making recommendations on how to improve the current program including bin location, generating interest, collections, and improving visibility. We have decided that by being in this conference, we would help to generate more interest in recycling and be an effective way to show our suggestions to the student body.

## 561

**Title:** Replacing Paper based Scheduling and Checkouts with a new Online Application

**Presenter(s):** Paul Segovia

**Department:** Instructional Technology

**Advisor:** Rhonda Ficek

**Abstract:** A simple, easy to use calendar layout that allows for online checkout and registration of equipment or licenses. This application has the ability to store and extract data from databases. This allows for a centralized hosting of information. Students can fill out forms online instead of on paper to complete their checkout request.

## 562

**Title:** Sexual Dimorphism in the Common Green Darner

**Presenter(s):** Stacey Miller, Jeffrey Miller

**Department:** Biology

**Advisor:** Linda Fuselier

**Abstract:** The common green damer (*Anax junius*) is a migratory dragonfly widespread in the United States and Canada. As with most organisms, 50:50 sex ratios of males to females is expected. However, among the green damer, previous work in the lab has indicated that there exists a very distinct female-biased sex ratio among the resident larvae. One of our proposed hypotheses is that the male larvae have a higher mortality rate than females due to increased predation risk. We will film dragonfly larvae striking at prey and use a motion analysis program to slow the video, measure strike velocity and analyze the differences in feeding tactics between the sexes. A second experiment, designed to measure the larvae's reaction to predators, will be implemented in the summer. We will measure dragonfly larvae feeding behavior in the presence of yellow perch (a natural predator to *Anax* larvae) to determine if there is a difference in predation risk between the sexes. The results of this study will shed light onto the mechanisms driving biased sex ratios in adult dragonfly populations.

## 563

**Title:** A comparison of nitrogen-fixing species abundance on 3rd grade prairie restoration plots of different ages at the MSUM Regional Science Center

**Presenter(s):** Liz Jagol, Barbara Michel, Amber Haugen, Jennifer Hostetter, Jenny Neuberger, Tatiana Gracyk, Elizabeth McLain

**Department:** Biology

**Advisor:** Allison Wallace

**Abstract:** Each year, Moorhead third graders have been growing prairie seedlings inside their classrooms to restore sections of the prairie at the MSUM Regional Science Center. Our goal is to compare the abundance of nitrogen-fixing species in restoration plots established in 2001, 2002, 2003, 2004, and 2005. For each plot, we determined the surveyed the density of lead plant, *Amorpha canadensis*, and purple prairie clover, *Petalostemum purpureum*. This information will help us to document successional changes as these plots mature, and may be helpful in determining success of the restoration if these nitrogen-fixing species can be used as indicators of overall quality of plots in terms of forb density. Results will be communicated back to the teachers of how effective their students' restoration efforts are over the long term.

## 564

**Title:** "Give us something to eat" Famine and Hunger in the world

**Presenter(s):** Temie Giwa

**Department:** Political Science

**Advisor:** Andrew Conteh

**Abstract:** There are more than 852 million gravely undernourished Children, Women and Men in our world today. More than 6 million children are killed by hunger related diseases every year and they all live in a world that already produces enough food to feed the world's population. Why are we starving the world's children and what can you do?

**565**

**Title:** Big Pharma and Cheated Americans - Why Do Life Saving Drugs Cost So Much?

**Presenter(s):** Amrinder (Monty) Oberoi, Asphand Malik

**Department:** Health Administration

**Advisor:** Barry Halm

**Abstract:** Why do life-saving prescription drugs are so expensive? Even though drug companies claim to invest millions in research and development of drugs, the truth is that almost all the important new drugs of the past quarter-century originated in research colleges, universities and at the National Institutes of Health which were funded by taxpayers' money. This confirms the fact that American Taxpayers are paying twice for the drugs they buy. There have been innumerable incidences of doctors overdosing their patients which has raised questions about influence of drug industry money in distorting doctors' treatment decisions and scientific findings. "In an article in the Journal of the American Medical Association, the group said that voluntary efforts to limit corporate inducements have failed, resulting in the overprescribing of some medications and the withholding of negative discoveries about others.

**566**

**Title:** The Cents fo Mental Health

**Presenter(s):** Sarah Johnson

**Department:** Sociology

**Advisor:** Susan Humphers-Ginther

**Abstract:** During some point in life individuals may find themselves with a high degree of mental stress. Items that trigger the feeling of stress vary from situation to situation but in many cases this item revolves around money. It seems that personal finances may fluctuate just as much as the emotional stability of an individual. Money plays a vital resource in our lives by providing a stable way to acquire basic needs. However, it seems that individuals who suffer from mental illness may also suffer financially. I will compare various incomes from a variety of sources to determine whether household income is associated with mental illness. As a result of these findings it would be possible for other organizations to see the correlation between these issues and make steps in the direction to lessen the problem.

**567**

**Title:** Unemployment in America

**Presenter(s):**

**Department:** Economics

**Advisor:** Gregory Stutes

**Abstract:** I explained the differences in unemployment across metropolitan statistical areas (MSA). In particular, I explored the factors that may explain the consistent low unemployment rate in the Fargo-Moorhead msa.

**568**

**Title:** Stress Fiber Formation is Essential for Cellular Migration in Chinese Hamster Lung Fibroblasts

**Presenter(s):** Jenny Canine

**Department:** Biology

**Advisor:** Joseph Provost

**Abstract:** The coordinated reorganization of the actin cytoskeleton is a common cellular event. In a variety of cell types including lymphocytes, the formation of stress fibers is indicative of a stabilized attachment state where the cells no longer migrate. The research presented here demonstrates that stress fiber formation is essential for cellular migration in CCL39 cells, Chinese Hamster Lung fibroblasts. As in virtually all other mammalian cells, the Sodium-Hydrogen Exchanger (NHE) is present and plays a dual role in pH regulation and cytoskeletal attachment to the plasma membrane. In this second role, NHE is also essential for the formation of stress fibers in cells. Previous research from our laboratory has shown that phenylephrine (PE) stimulates NHE and induces stress fiber formation in these cells. To investigate the role of stress fiber formation, CCL39 cells were allowed to grow into a confluent monolayer in a 35 mm culture dish. The cells were then serum deprived 12 to 18 hours. At this point the monolayer was wounded using a standard cell scraper. The cells were then allowed to migrate into the wounded area for 24 hours in one of four conditions: Serum-free media, Serum-free media with PE, 10% serum media, 10% serum media with PE. Our data shows that in PE stimulated CCL39 cells that stress fibers are present in the cell immediately adjacent to the wound area and in cell that have migrated into the wound. These studies indicate that stress fiber formation has a direct involvement in cell migration.

**569**

**Title:** Factors that Influence Risk-Taking Decisions

**Presenter(s):** Alexis Nelson

**Department:** Psychology

**Advisor:** Ernest Hallford

**Abstract:** Risky decision making from adolescents and young adults has increased in recent years. Factors such as age, gender, and peer influence have been found to directly influence people to be involved in more risk. It is expected that adolescents that are under peer influence will be more likely to engage in risky behavior. I also think that males will take more risks compared to females. The study consisted of 40 participants from a Midwestern college. They were asked to complete a survey evaluating risk-taking decisions of adolescents and young adults.

570

**Title:** The Effect of Exercise on Mood

**Presenter(s):** Lindsay Johnson

**Department:** Psychology

**Advisor:** Ernest Hallford

**Abstract:** With depression on the rise, there is a push towards effective treatments and prevention. Exercise as a therapy has been introduced as a useful tool for both. When exercise is used in concordance with psychological therapy, it seems to be the best combination for relief of depressive symptoms.

Factors such as gender, duration, and type of exercise have all been researched. It was hypothesized that females will be more likely to benefit from exercise as a therapy since females are more prone to depression and low self-esteem.

Participants were stopped before exercising and asked to fill out a quick questionnaire. When they were done exercising, they filled out a post-exercise questionnaire.

571

**Title:** Blood Pressure and Membrane Fluidity of Hypertensive and Normotensive Rats Treated with Antioxidants

**Presenter(s):** Kristopher Brandvold, Joseph Bickle, Abbas Pezeshk

**Department:** Psychology/Chemistry

**Advisor:** A Derick Dalhouse

**Abstract:** Spontaneously Hypertensive (SHR) and Wistar Koyoto (WKY) normotensive male rats were treated with Vitamin E, Probucof or 9-Hydroxy Xanthene to determine their effects on blood pressure, pulse, and red blood cell membrane fluidity. Vitamin E and Probucof produced decreases in blood pressure and increases in membrane fluidity. However, 9-Hydroxy Xanthene increased membrane fluidity but produced no changes in blood pressure in the rats.

572

**Title:** Writers Against Their Times

**Presenter(s):** Lee Morris, Roxanne Berg, Jeff Dix

**Department:** English

**Advisor:** Hazel Retzlaff

**Abstract:** When one reads, for example, Kurt Vonnegut's anti-war novel Slaughterhouse Five against contemporary articles in the popular press, one understands the daring of Vonnegut's stance. Our reading of other works changes also when we read them against the background of the popular press; Malcolm X's Autobiography reads differently, too, against the background of articles about reverse racism.

573

**Title:** Voices of Women from the Fringes

**Presenter(s):** Jessica Jorgenson, David Schell, Michelle Roers, Diana Gable

**Department:** English

**Advisor:** Hazel Retzlaff

**Abstract:** There is a richness of perspectives on American Life in the fiction of women are members of ethnic minority groups. Louise Erdrich, Dorothy Allison, Maxine Hong Kingston, Jhumpa Lahiri, Toni Morrison, and Sandra Cisneros all critique American society from their perspectives on the fringes of American society.

574

**Title:** Credit Card Debt Among College Students

**Presenter(s):** Theresa Obeng

**Department:** Economics

**Advisor:** Oscar Flores

**Abstract:**

575

**Title:** Fraud in the Workplace

**Presenter(s):** Cassie Nyhus

**Department:** Accounting

**Advisor:** James Hansen

**Abstract:** I am going to present about fraud in the workplace, why people commit fraud in the workplace and some ways to prevent fraud in the workplace.

576

**Title:** How in Heaven's Name Do We Deal with Conservative Christians?

**Presenter(s):** Bill Fonseth

**Department:** Foundations of Education

**Advisor:** Charles Howell

**Abstract:** This presentation discusses the areas in which conservative Christians have affected the public schools. The presentation includes curriculum, extracurricular activities, and teachers' intellectual freedom. It includes suggestions for how teachers and administrators can accommodate the concerns of conservative Christians without violating church-state separation.

577

**Title:** Economic and Social Consequences of the Mounting US Debt

**Presenter(s):** Lee Isaacson

**Department:** Economics

**Advisor:** Zachary Machunda

**Abstract:** In my presentation I will discuss the effects of the National Debt on the United States. I will focus on the time span from 1990 through 2006. In that time period, I will determine the consequences of the National Debt on the standard of living of Americans, US economic growth, and other aspects of the US economy. I will also look at the effects the national debt will have on future generations.

578

**Title:** NAFTA and its Effects on US Jobs

**Presenter(s):** Christopher Prael

**Department:** Economics

**Advisor:** Zachary Machunda

**Abstract:** I will examine the effects of NAFTA on jobs created or jobs lost in the US since its inception. I will also point out other positive or negative effects of the North American Free Trade Agreement on the US economy through my research. The focus of my argument will be on US jobs created or lost due to the implementation of NAFTA.



## 579

**Title:** The Sugar Beet Industry in North Dakota and Minnesota

**Presenter(s):** James Daniels

**Department:** Economics

**Advisor:** Oscar Flores

**Abstract:** An economic study of how the sugarbeet industry impacts the economics in Minnesota, North Dakota and the Red River Valley.

## 580

**Title:** The Importance of Handedness for Females Solving Visual-Spatial Problems

**Presenter(s):** Elisa Pforr

**Department:** Psychology

**Advisor:** Magdeline Chilikia

**Abstract:** It is well established that men tend to perform better than women in tests of spatial ability. The magnitude of these gender differences is usually relatively modest; however, tasks involving 'mental rotation' generate more substantial effects. Mental rotation tests consistently yield the largest effect sizes of any cognitive or spatial test, specifically for sex differences in performance. Many studies investigating factors such as sociocultural, biological, ratio scoring and instructional manipulation have been concluded in an attempt to account for this difference. However, very few studies have investigated the role of one's handedness in visual-spatial tasks, especially, in relation to impossible (mirror images) rotations. This study will investigate differences between males and females in relation to their performance with impossible rotations. I hypothesize that left-handed females will perform better than right-handed females on tasks with possible/impossible images and that no differences would be found between the sexes on possible images, regardless of handedness.

## 581

**Title:** Performance Techniques for the Trombone

**Presenter(s):** Steve Wallevund

**Department:** Music

**Advisor:** Laurie Blunsom

**Abstract:** Most people don't think of the trombone as a soloist instrument because of its unusual qualities. And it is these unusual qualities that make it technically challenging to master. In this paper I will examine these technical challenges. I will also discuss how challenging performance techniques and how they are used in the genres of classical, jazz, and pop music in the 20th Century.

## 582

**Title:** Examining the Role of Exercise & Development on Mitochondrial Oxidative Stress

**Presenter(s):** Karuna Sharma

**Department:** Bioscience

**Advisor:** Ellen Brisch

**Abstract:** Mitochondria play an important role in aging. Decay of mitochondria may be a primary factor in aging. Mitochondria are cellular organelles that convert food into energy known as Adenosine Tri Phosphate (ATP). Mitochondria are the powerhouse of the cell. They are organelles with two membranes separated by a space. The inside space is enclosed by the inner membrane called the 'matrix'. Mitochondria generate majority of reactive oxygen species that are prime suspects among the cause of aging. We will study the essential role of mitochondria in aging and exercise. We will use mice as our model organism for this project as mice have been the model organism for previous studies. Hence, we will examine the relationship between mitochondria and its effect on aging in this project.

## 583

**Title:** Iris Murdoch's 'A Severed Head': Neoplatonic Severance of the Head from the Body

**Presenter(s):** Allison Jarolimek, Carissa Wolf, Wendy Hammond

**Department:** English

**Advisor:** Sandy Pearce

**Abstract:** In Iris Murdoch's 'A Severed Head', Honor informs Martin that she is a severed head. Murdoch demonstrates this concept through Honor's constant application of her intellect rather than her physical appearance. She employs her mind rather than basely using her body. Murdoch provides a Neoplatonic view of Honor to illustrate the advancement that comes from utilizing one's head as opposed to depending on his/her body.

## 584

**Title:** Trade Imbalance Between USA and China, 1999 - 2005

**Presenter(s):** Nirmal Raj Poudyal

**Department:** Economics

**Advisor:** Zachary Machunda

**Abstract:** Trade between the United States and China has resulted in a trade deficit for the US and a trade surplus for China, especially since 1999. Today, net imports from China are almost five times greater than net exports to China. In this presentation, I will discuss the various causes of the trade imbalance between US and China. Specifically, I will examine various reasons why the trade imbalance between the US and China is getting bigger, instead of narrowing. Finally, I will review possible effects of the US trade deficit with China on US consumers, US jobs, and US Gross Domestic Product.

586

**Title:** Will Social Security be There for You?

**Presenter(s):** Suzanne Johnson

**Department:** Economics

**Advisor:** Zachary Machunda

**Abstract:** In my presentation on the future of Social Security, I will briefly explain how Social Security works, and why people need it. I will list and explain the serious problems facing social security today and explain the various proposed solutions. Lastly, I will evaluate the merits of each proposal and include by identifying the solution I feel holds the most merit.

587

**Title:** Regional Human Rights Regimes: An Examination of 3 Established, Western Governmental Organizations

**Presenter(s):** Pablo Guajardo

**Department:** Political Science

**Advisor:** Andrew Conteh

**Abstract:** When discussing the enforcement of Human Rights, the vehicle that comes to mind is the United Nations. In addition to the United Nations, there are several regional organizations that deal with Human Rights in the west that are overlooked. An examination of the Council of Europe, the Organization of American States, and the African Union will show that they have the potential to prove more effective and responsive than the United Nations due to their structures, origins, and legitimacy accorded them by their member states without having to deal with as many of the institutional difficulties of the United Nations.

588

**Title:** Race and Crime: Prejudice or Coincidence?

**Presenter(s):** Kimberly Cole

**Department:** Sociology

**Advisor:** Deb White

**Abstract:** I examined fifteen research studies conducted on the relationship between race and criminal activity. These studies focused on who commits the most crimes in inner cities and how criminals are treated differently in the criminal justice system based on their race. Also included in the research were factors that contribute to delinquency for each race. The overall conclusion from these studies is that race may be a factor in determining who is arrested and incarcerated but also there is a positive correlation between minorities and high crime rates. Therefore, minorities are perceived as the majority of criminals no matter how racism fits into the picture.

589

**Title:** Teaching Philosophies of Tomorrow's Art Educators

**Presenter(s):** Erin Kelly, Chelsea Odden, Heather Ziemer, Kayla Stromberg, Lisa Riley, Barbara Nagle, Stacy Ferguson, Leah Trett

**Department:** Art and Design

**Advisor:** L Hauge Stoffel

**Abstract:** Our presentation will be a panel of Art Education students who will read and explain their philosophy of teaching. Topics may include: classroom management, instructional strategy, assessment methods, art anxiety, the learning environment, curriculum planning, and balancing the artist/teaching roles. There will be eight presenters, each focusing upon a specific topic. A time for questions and answers will follow.

591

**Title:** Periodical Influence on Social Consciousness in Early 20th Century Literature

**Presenter(s):** Lee Morris

**Department:** English

**Advisor:** Hazel Retzlaff

**Abstract:**

592

**Title:** Color Inversion and Detail Effects on Face Recognition

**Presenter(s):** Jill Boltjes, Courtney Rust

**Department:** Psychology

**Advisor:** M Chalikia

**Abstract:** The study demonstrated the importance of color location and focus on face recognition. The variables that were manipulated are Gaussian blur (GB) and Inversion (IN). GB is the process of taking an image out of focus, the higher the cycle the more out of focus the image will appear. Inversion is the process of changing the dark colors to light colors and the light colors to dark colors, like a colored photographic negative. In the study, twenty celebrity faces (10 female and 10 male) were exposed to six different manipulations: three levels of GB and two levels of IN. Participants were exposed to a random presentation of 120 stimuli following one practice list. The results were measured using a repeated measures design. The results showed GB and IN to be contributor to face recognition, but they contributed independently of one another. In addition, a second study will employ a between subject design and will examine the impact of different values of Gaussian blur; and technique for changing color on face identification.

593

**Title:** The Development of a Novel Drug for Cancer Therapy

**Presenter(s):** Ben Johnson, James Alishouse

**Department:** Chemistry

**Advisor:** Gary Edverson

**Abstract:**

## 594

**Title:** Reading the MSUM Landscape: The Truth Behind the Facades

**Presenter(s):** Carl Zachman

**Department:** Anthropology

**Advisor:** Rinita Dalan

**Abstract:** Building facades convey a formal message, written in brick in mortar, about MSUM to those who enter campus buildings. What is this message? Find out how the backs of MSUM's buildings compare to the fronts and how these differences might be interpreted.

## 595

**Title:** Capstone Building Group - Tri-College Gateway Building

**Presenter(s):** Adam Beukelman, Brian Wolff, Joe Schneider

**Department:** Technology (Construction Management)

**Advisor:** Norma Anderson

**Abstract:**

## 596

**Title:** Hangar Hockey Arena - Capstone Construction Management

**Presenter(s):** Erik Paulson

**Department:** Technology (Construction Management)

**Advisor:** Norma Anderson

**Abstract:** This facility will be a new hockey arena that will be the new home of the FM Jets, and also be available to the various local youth hockey teams in the FM Area. The arena will have a capacity to seat approximately 2,500 fans. It will have locker rooms and training rooms for both the home and visiting teams. It will also have offices, concession stands, storage, lavatories, and a place for the zamboni. In addition the lower level will have a running track.

## 597

**Title:** Strategies for Various Learning Needs

**Presenter(s):** Scott Garman

**Department:** Education

**Advisor:** Charles Howell

**Abstract:** Strategies for addressing the learning needs of two special needs students in a western Minnesota school district are described. The presentation documents student learning behavior, highlighting issues of attention, self-regulation, and dependence. A varied series of short, focused activities with simple instructions is shown to generate optimal results for student achievement.

## 598

**Title:** The Third Grade Project: The Importance of an Emotional Impact on Learning

**Presenter(s):** Calliegh Besemer

**Department:** American Studies/History

**Advisor:** Maureen Reed

**Abstract:** The Third Grade Project is a three-part field trip that Moorhead third graders participate in throughout the school year. The educational impact of the activity is obvious; students learn important social studies and science concepts. But the real motive behind the activity is the emotional impact the students gain. They now have a new connection to the prairie, a feature that defines the Midwest, as well as a new found sense of pride in their accomplishments.

## 599

**Title:** Defining Success through means of Photography

**Presenter(s):** Morea Steinhauer

**Department:** American Studies/History

**Advisor:** Maureen Reed

**Abstract:** Having individuals articulate the American Dream or success into a universal definition is not easily accomplished due to individualistic descriptions. This presentation is an exploration of who peers define as being successful within their peer group and why. It will be a visual examination of what constitutes being successful within the local community.

## 600

**Title:** The Midwest Migrant Farmworker: A Creative Project

**Presenter(s):** Sylvia Garcia

**Department:** American Studies/History

**Advisor:** Maureen Reed

**Abstract:** I will discuss my writing on "The Vision of a Migrant Child," the journey of a migrant farm-worker in the Midwest. I will also discuss the steps I took to accomplish my writing. I conducted personal interviews with family and friends, and I reviewed several works of literature on the topic.

## 601

**Title:** IH vs. John Deere: A Study of a Farmer's Decision

**Presenter(s):** Chris Ruter

**Department:** American Studies/History

**Advisor:** Maureen Reed

**Abstract:** This project is an agricultural piece that considers what tractor a farmer would need based on the time in history and one what needs the farmer had to fill. It goes through three time period and places; the early 1900s in the Moorhead/Fargo area, the 1940s in southern MN around the Renville/Danube area, and the present with a farmer in central MN around the Long Prairie/Little Falls area. I will discuss how this project grew out of my question regarding why people collect tractors in general, and I will have a visual representation of my findings.

## 602

**Title:** Milikan's Oil Drop Experiment

**Presenter(s):** Bernard Fraser, Tom Mooney

**Department:** Physics and Astronomy

**Advisor:** Steve Landaas

**Abstract:** In this experiment, we used an apparatus designed by Robert Millikan to find the charge of an electron. This experiment had a significant impact in almost every field of science as it presented the charge of an electron as a fundamental constant. By allowing microscopic droplets to fall through an electric field created between two charged plates, we were able to control the forces acting on the droplet, and hence derive an equation for the total charge on a droplet. Assuming that charge is quantized, we found that the charges on the droplets were multiples of each other and, if we divided the charges by the smallest charge, we were able to determine the number of charges on each droplet and thus, the charge of an electron. As this experiment is not trivial, our final data is still to be determined.

## 603

**Title:** One Night in Bangkok: Sex Trafficking

**Presenter(s):** Amy Baker, Jacqueline Murnion

**Department:** Sociology

**Advisor:** Lee Vigilant

**Abstract:** Sex trafficking is defined as the illegal movement of individuals for the purpose of sexual exploitation. It is a social problem that goes largely unnoticed and unprosecuted. This presentation will give three main components. First it will identify thoroughly what sex trafficking is, offer a solution, and then explain the process in which to implement programs to make the solution effective. While this is something that effects and takes place in the United States, we will be focusing on it at the global scale.

## 604

**Title:** How Significant is the issue of Date Rape Drugs as a Precipitating Factor in Sexual Assault?

**Presenter(s):** Amber Landscoot

**Department:** Health and Physical Education

**Advisor:** N Hoffner

**Abstract:**

## 605

**Title:** How Much is Too Much: The Effects on the Body

**Presenter(s):** Jesse Cloos

**Department:** Health and Physical Education

**Advisor:** Dawn Hoffner

**Abstract:**

## 606

**Title:** The Role of Fiber in Preventing and Treating Diseases

**Presenter(s):** Brooke Duncan

**Department:** Health and Physical Education

**Advisor:** Dawn Hoffner

**Abstract:**

## 607

**Title:** Breast Cancer & Smoking: What's the Connection?

**Presenter(s):** Breanna Asplin

**Department:** Health and Physical Education

**Advisor:** Dawn Hoffner

**Abstract:**

## 608

**Title:** Does School Diet Affect School Performance?

**Presenter(s):** Angela Ottesen

**Department:** Health and Physical Education

**Advisor:** Dawn Hoffner

**Abstract:**

## 609

**Title:** Exercise Considerations for Diabetes

**Presenter(s):** Matthew Brouse

**Department:** Health and Physical Education

**Advisor:** Dawn Hoffner

**Abstract:**

## 610

**Title:** Minority Health: Reproductive Health Disparities for Hispanics. What are they & Can they be Reduced?

**Presenter(s):** Megan Benson

**Department:** Health and Physical Education

**Advisor:** Dawn Hoffner

**Abstract:**

## 611

**Title:** Cost & Benefits of Newborn Screenings: Are Changes Needed?

**Presenter(s):** Chelsea Mick

**Department:** Health and Physical Education

**Advisor:** Dawn Hoffner

**Abstract:**

## 612

**Title:** The History, Prevalence, and Contributing Factors of the Female Athlete Triad

**Presenter(s):** Janna Zirnelt

**Department:** Health and Physical Education

**Advisor:** Dawn Hoffner

**Abstract:**

## 613

**Title:** HPV: Dispelling the Myths

**Presenter(s):** Melissa Walter

**Department:** Health and Physical Education

**Advisor:** Dawn Hoffner

**Abstract:**

## 614

**Title:** Reading the MSUM Landscape: The Monumental and the Vernacular

**Presenter(s):** Maraigh Leiteh

**Department:** Anthropology

**Advisor:** Rinita Dalan

**Abstract:** Landscape affects how people interact within space. This presentation will study how monumental structures and vernacular spaces affect the behavior of the campus population at MSUM.

## 615

**Title:** Correlations of Complexity, Liking, and Interestingness with Artistic Ratings

**Presenter(s):** Peter Fox, Ashley Kjos, Amanda Herges, Christina Masters, Robert Olson

**Department:** Psychology

**Advisor:** Ernest Hallford

**Abstract:**

## 616

**Title:** The Effect of Emotionality on Artistic Readings

**Presenter(s):** Ashley Kjos, Peter Fox, Amanda Herges, Christina Masters, Robert Olson

**Department:** Psychology

**Advisor:** Ernest Hallford

**Abstract:**

## 617

**Title:** Create Mandarin Dress from Flat Pattern Method

**Presenter(s):** Brittannie Glander

**Department:** CSFT

**Advisor:** Ricky Greenweil

**Abstract:** This presentation explains how to make a historical Chinese Mandarin Dress by utilizing the flat pattern method. It will explain how a costume designer can take a picture or an idea and recreate it by taking the flat pattern method and design the pattern from scratch. It goes through the steps of the basic desing, basic fitting shell, and altering it to create the specific design.

## 618

**Title:** Corset Making Through the Flat-Pattern Method

**Presenter(s):** Bridgette Wernke

**Department:** CSFT

**Advisor:** Ricky Greenweil

**Abstract:** This project will illustrate the steps it takes to create a corset using the flat-pattern method through sharing sewing samples, patterns, and corset fashion plates. The sample corset being presented was inspired from a historic fashion plate from 1868.

## 619

**Title:** Domestic Violence: Who is to Blame?

**Presenter(s):** Shirley-Nita Enniful, Darby Volk

**Department:** Sociology & Criminal Justice

**Advisor:** Sue Humphers-Ginther

**Abstract:** Historically, women and children have been abused by significant others and their parents in all societies, reardless of race or ethnicity. At the present time, there is no consensus on how or what is to blame for this epidemic. The purpose of this research is to bring awareness to the public about the many contributing factors to domestic violence and its long term effects. Specifically, a research analysis will be conducted to determine the contributing factors of domestic violence, the consequences, and a need for collective action to conquer the problem. The resulting data will have implications for how policy makers and society can come together to combat problems of domestic violence.

## 620

**Title:** Analysis of the Orwell Site

**Presenter(s):** Carl Zachmann

**Department:** Anthropology

**Advisor:** Mike Michlovic

**Abstract:** The Orwell site was excavated in 1965 by a crew from the University of Minnesota. The research presented here uses the archaeological remains found at the Orwell site combined with an earlier analysis of artifacts and faunal remains from the site to understand it. This 1200 year old archaeological site is unique to the state of Minnesota consisting of 13 mounds and a ditched enclosure.

## 621

**Title:** DW Construction - Checkers Home & Lumber

**Presenter(s):** Craig Wacker, Ben Dahlager

**Department:** Technology (Construction Management)

**Advisor:** Norma Anderson

**Abstract:**

## 622

**Title:** Urban Developers

**Presenter(s):** Michael Herseth, Chad Eklund, Andrew Joos

**Department:** Technology (Construction Management)

**Advisor:** Norma Anderson

**Abstract:**

## 623

**Title:** Creighton Construction/Jimmy Johns Gourmet Sandwich Shop

**Presenter(s):** Melanie Nordhogen, Jake Frazier, Ben Meland

**Department:** Technology (Construction Management)

**Advisor:** Norma Anderson

**Abstract:**

## 624

**Title:** Sugar Sweet Estates

**Presenter(s):** Jonathon Berg, Rachel Anderson, Scott Freudenrich

**Department:** Technology (Construction Management)

**Advisor:** Norma Anderson

**Abstract:**

## 625

**Title:** An investigation into the onset of the abiotic induction of systemic acquired resistance (SAR) in planta.

**Presenter(s):** Brent Voels, Neil Patel

**Department:** Biology

**Advisor:** Mazz Marry

**Abstract:** Systemic acquired resistance (SAR) is the activation of defenses in uninfected parts of the plant, which gradually spreads throughout the plant. This results in a long-lasting, unspecific immunization against virulent, even unrelated, pathogens, including viruses, bacteria and fungi. A typical induced resistance results in the lignification of plant material, the expression of specific pathogen-related (PR-) proteins, and the chemical alteration of the structural carbohydrates of the plant primary cell wall. Salicylic acid (Sa) is known to be a signaling compound involved in transmission of the defense response throughout the plant to produce SAR. In this investigation we have induced SAR in the first true leaf of cucumber (*Cucumis sativus* L. c.v perfection) seedlings by the application of Sa to the cotyledons. Previous work on this system has shown that Sa treatment induces a resistance in the first leaf to Cell Wall Degrading Enzymes (CWDE), seen as a reduction in protoplast formation. This treatment also induced two previously inactive anodic peroxidase isozymes in the first true leaf and enhanced the activity of the three isozymes also present in control plants treated with sterile distilled water. (Marry et al., 1995. Aspects of Applied Biology: Physiological Responses of Plant Pathogens, 42, 349-353). In this study, we are looking at the timing of the events which lead to the induction of SAR. Over a specific time course (1 min to 30 min) we have isolated total RNA and PR-proteins from the first leaf following application of the cotyledons with either Sa or sterile distilled.

## 626

**Title:** Where's Jazz?

**Presenter(s):** Jack Lee

**Department:** Music

**Advisor:** Laurie Blunsom

**Abstract:** Jazz has had such a significant impact on the world's music scene that a question everyone secretly wonders is, where is jazz now, and where is it going? My paper will talk about some of the important historical information that led to today's styles of jazz. It will also discuss where jazz presently stands and where it might be headed.

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**CMU 114**  
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477-2131

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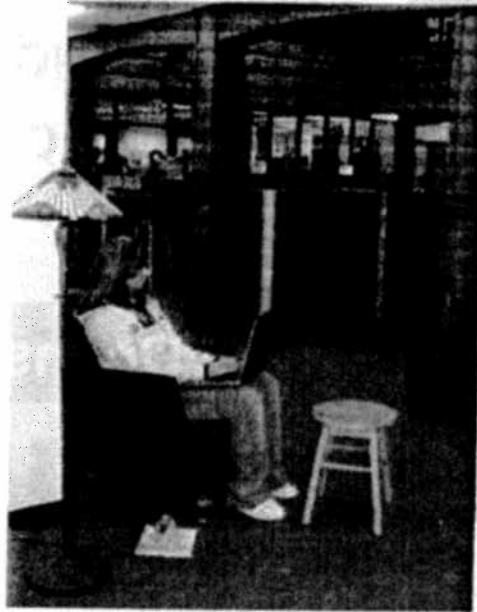
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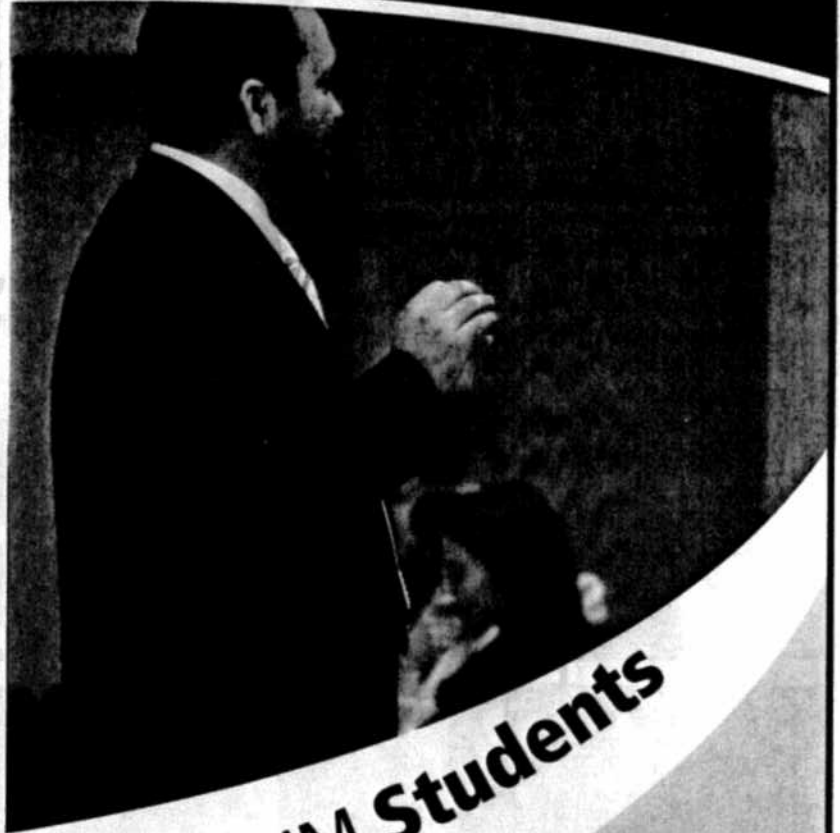
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