

2003

# St. Cloud State University Student Research Colloquium 2003

St Cloud State University

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# St. Cloud State University

## Student Research Colloquium 2003

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# Acknowledgements

Planning Committee members for the St. Cloud State University Student Research Colloquium 2003 include:

- Leeann Jorgensen, Department of Educational Leadership and Community Psychology
- Cheri Rae Sundin, Office of Clinical Experiences, College of Education
- Fatemeh Zarghami, Department of Child and Family Studies
- Ilia Rodriguez, Department of Mass Communication
- Leslie Valdes, Department of Psychology
- Judith Rodgers, Center for Information Media
- Karen Wenz, Center for Information Systems
- Susan Jensen-Cekalla, Office of Sponsored Programs
- Donella Westphal, Office of Sponsored Programs
- Tanash Lawrence, Graduate Assistant, Office of Sponsored Programs
- Carolyn Williams, College of Social Sciences
- Richard Rothaus, Office of Sponsored Programs

The Colloquium would not have been possible without support and assistance from:

- Mike Frey, Chris Brown, and Phil Thorson from Computing and Technology Services
- Michaela Meyer, Sarah Spiczka, Tyrone Stamper, and Josephine Lee from the Office of Sponsored Programs
- Marie Madgwick from University Communications
- Darwin Erickson, Bonnie Ruhoff, and Donna Stockinger from Printing Services
- Rachel Gold, Amber Swanson, and Michelle Malinowski from the Department of Psychology
- Jennifer Kolden from the College of Science and Engineering Applied Research Center
- Krista Dillman from Student Disability Services
- Session Moderators
- Registration Table Volunteers
- SCSU Ambassadors
- Chemistry Students (poster setup and teardown)

# Donors

The St. Cloud State University Student Research Colloquium 2003 has been made possible through generous financial contributions. A special thank you to the following for their support:

## University Donors

- St. Cloud State University Foundation
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- College of Fine Arts and Humanities
- Office of Academic Affairs
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- College of Social Sciences
- Office of Sponsored Programs
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- Human Performance Lab

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- Dr. Leslie Valdes, Department of Psychology

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Thank you to the following faculty who provided guidance to students as they prepared their research projects for presentation at the St. Cloud State University Student Research Colloquium 2003:

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(continued from previous page)

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**Electrolux/Frigidaire**

- Wince, Richard

# Program Highlights

## Registration

All presenters, moderators, and attendees are asked to register for the Colloquium. The registration table is located outside of the Ballroom on the 2<sup>nd</sup> floor of Atwood Memorial Center.

## Invited Alumni Panel and Reception

This year, four St. Cloud State University alumni will speak about how they use research in their various careers. This panel presentation will be held in Atwood Little Theatre from 12:30 to 1:30 p.m. A reception will follow.

### Research Matters: A Conversation with Successful Professionals on the Applications of Research

- **Alvin B. Irby** ('73), Operations Leader, The Mobe Group, Minneapolis, MN.
- **Beth Riesgraf**, M.D. ('74), Family Practice Physician, CentraCare Health Plaza, St. Cloud, MN.
- **Jennifer Strand** ('94), Manufacturing Engineering Manager, Whirltronics, Inc., Buffalo, MN.
- **Michael Wacker** ('96), Industrial Hygienist, U.S. Department of Labor-OSHA

## Morning Paper and Panel Presentations

Morning sessions will be from 11:00 a.m. to 12:30 p.m. in various rooms of Atwood Memorial Center. There will be two panel presentations: one on contemporary counseling and another on community development in small and rural towns.

## Afternoon Paper and Panel Presentations

Afternoon sessions will be from 2:00 to 3:30 p.m. in various rooms of Atwood Memorial Center. There will be four panel presentations: criminal justice curriculum, contemporary counseling, multicultural teaching and learning, and a session conducted in Spanish and German.

## College Receptions/Award Ceremony

Presenters and their sponsors will be honored at receptions held by their colleges. The College of Science and Engineering will also present the *Denise M. McGuire Student Research Award* to 17 students.

### All receptions will be held from 4:30 to 5:30 p.m. in the following locations:

- |  |  |
|--|--|
| • <b>College of Education</b>                | Lounge, Education Building   |
| • <b>College of Fine Arts and Humanities</b> | Heritage Lounge, 2 <sup>nd</sup> Floor, Atwood Memorial Center       |
| • <b>College of Science and Engineering</b>  | Mississippi, 1 <sup>st</sup> Floor, Atwood Memorial Center           |
| • <b>College of Social Sciences</b>          | Little Theatre Lounge, 1 <sup>st</sup> Floor, Atwood Memorial Center |

## Evening Paper and Panel Presentations

Evening sessions will be from 5:00 to 6:30 p.m. in various rooms of Atwood Memorial Center. There will be three panel presentations: one on the Native American church's Peyote Ceremony, one dealing with world conflict, and another on life in South Africa.

# Schedule of Events

Time	Event	Location in Atwood Memorial Center
<b>Morning Paper &amp; Panel Presentations</b>		
11:00 to 12:15	Session A: Contemporary Relationship Counseling Approaches	Ballroom B, 2nd floor
11:00 to 12:15	Session B: Fine Arts and Humanities I	Ballroom C, 2nd floor
11:00 to 12:15	Session C: SCSU Survey	North Glacier, 2nd floor
11:00 to 12:15	Session D: Biological Sciences	South Glacier, 2nd floor
11:00 to 12:30	Session E: Science and Engineering I	Lady's Slipper, 2nd floor
11:00 to 12:00	Session F: Culture and Language	Mississippi, 1st floor
11:00 to 12:15	Session G: Issues of Community Development: Small and Rural Towns in the Context of Central Minnesota	St. Croix, 1st floor
11:00 to 12:15	Session H: Science and Engineering II	North Voyageurs, 2nd floor
11:00 to 12:15	Session I: Food	South Voyageurs, 2nd floor
<b>Invited Alumni Panel Presentation &amp; Reception</b>		
12:30 to 1:30	Session J: Research Matters: A Conversation with Successful Professionals on the Applications of Research	Little Theatre, 1st floor
1:30 to 2:00	Reception	Little Theatre Lounge, 1st floor
<b>Afternoon Paper &amp; Panel Presentations</b>		
2:00 to 3:30	Session K: Criminal Justice Curriculum: What Do Students Think?	Ballroom B, 2nd floor
2:00 to 3:30	Session L: Contemporary Counseling Approaches	Ballroom C, 2nd floor
2:00 to 3:30	Session M: Gender	North Glacier, 2nd floor
2:00 to 3:30	Session N: Behavioral Sciences	South Glacier, 2nd floor
2:00 to 3:30	Session O: Teaching and Learning Multicultural Competencies: Finding the Key Within	Lady's Slipper, 2nd floor
2:00 to 3:30	Session P: Humanities	Mississippi, 1st floor

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2:00 to 3:30	Session Q: Identity	St. Croix, 1st floor
2:00 to 3:00	Session R: Foreign Language Panel	North Voyageurs, 2nd floor
2:00 to 3:30	Session S: Application of Research in the Workplace	South Voyageurs, 2nd floor

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**Poster Presentations**

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3:00 to 4:30	Session T: All Disciplines	Ballroom, 2nd floor
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**College Receptions/Award Ceremony**

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4:30 to 5:30	College of Education	Lounge, Education Building
4:30 to 5:30	College of Fine Arts and Humanities	Heritage Lounge, 2 <sup>nd</sup> Floor
4:30 to 5:30	College of Science and Engineering Denise M. McGuire Award Ceremony	Mississippi, 1 <sup>st</sup> Floor
4:30 to 5:30	College of Social Sciences	Little Theatre Lounge, 1 <sup>st</sup> Floor

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**Evening Paper & Panel Presentations**

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5:30 to 6:00	Session U: Science and Engineering III	Mississippi, 1 <sup>st</sup> Floor
5:00 to 6:30	Session V: The Native American Church's Peyote Ceremony: Its Enactment and Relationship to Other Religious Ceremonies	North Voyageurs, 2nd floor
5:00 to 6:30	Session W: International Hot Spots and the Contact Model: Can We Solve World Conflict?	South Voyageurs, 2nd floor
5:00 to 6:30	Session X: Visual Comparison of South African-U.S. Student Life	Lady's Slipper, 2nd floor

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# Program

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**Session A      Ballroom B                      Contemporary Relationship Counseling Approaches**

*Moderator: Adelaide Habstritt Turkowski, Director, Career Services*

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Time	Presentation Number		
11:00	A1	Freitag, Alicia Goerz, Rebecca Maze, Lea	Contemporary Relationship Counseling Approaches

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**Session B      Ballroom C                      Fine Arts and Humanities I**

*Moderator: Doris Bolliger, Assistant Professor, Learning Resources and Technology Services*

---

Time	Presentation Number		
11:00	B1	Bushee, Scott	An Argument for God
11:15	B2	Bushee, Scott	The Case against Distributive Justice
11:30	B3	Dolan, Sean	On the Existence of God: The Argument from Film
11:45	B4	Tsugama, Noriyoshi	The Moral Dimension of the AIDS Crisis and the Role of Media

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**Session C      North Glacier                      SCSU Survey**

*Moderator: Carolyn Williams, Associate Dean, College of Social Sciences*

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Time	Presentation Number		
11:00	C1	Ackerman, Melissa Marisol, Rodriguez Peterson, Tesha	Mascot Issues
11:30	C2	Ben-Yehuda, Paul Jabs, Angela Lunser, Jason Schultz, Renate	SCSU Campus Safety Issues
12:00	C3	Becker, Ginger Hoogeveen, Laurie	Smoke Out the Smokers

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**Session D     South Glacier     Biological Sciences**

*Moderator: Pamela Salela, Assistant Professor, Learning Resources and Technology Services*

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Time	Presentation Number		
11:00	D1	Babski, Jill	Modeling the Spread of Invasive Plants on a Frequently Disturbed Military Training Site
11:15	D2	Tedrow, O'Niell	Effects of Biogenically Active Compounds on <i>Melosira varians</i> Agardh. (Bacillariophyta), a Common Component of Freshwater Phytoplankton Communities
11:30	D3	Legatt, Maria	Effects of Acetaminophen on Male Fathead Minnows Reproductive Success
12:00	D4	Schweiger, Paul	Reproductive Health of Walleye Exposed to Treated Sewage Effluent

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**Session E     Lady's Slipper     Science and Engineering I**

*Moderator: Pat Krueger, Associate Director, Admissions*

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Time	Presentation Number		
11:00	E1	Koll, Jakin	A Climatology of Nocturnal Severe Weather Events in Eastern South Dakota through Eastern Minnesota
11:15	E2	Schwartz, Jenna	Liquid Phase Microextraction
11:30	E3	Peters, Judith	Transport Processes in Relativistic Heavy-Ion Collisions
11:45	E4	Rafferty, Jake	Photochemistry of Aromatic Isothiocyanates
12:00	E5	Iniguez, Paul	Thermal Effects of the Twin Cities Urban Heat Island
12:15	E6	Lawal, Iyabo	Dynamics and Control

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**Session F      Mississippi                      Culture and Language**

*Moderator: Anne Zemek de Dominguez, Special Advisor to the President*

---

Time	Presentation Number		
11:00	F1	Pu, Chang Vong, Chi Keong	An Analysis of Chinese Malaysians? Attitudes toward Language Choice in Malaysia
11:20	F2	Rosha, Gwen	Bilingual Education
11:40	F3	Schultz, Emily	An Investigation of Bilingual Education

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**Session G      St. Croix                      Issues of Community Development: Small and Rural  
Towns in the Context of Central Minnesota**

*Moderator: Diana Burlison, Associate Vice President, Administrative Affairs*

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Time	Presentation Number		
11:00	G1	Bouvet, Nathan Jensen, Derrick Koll, Carissa Noerenberg, Jon Wittman, Abbi	Issues of Community Development: Small and Rural Towns in the Context of Central Minnesota

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**Session H      North Voyageurs      Science and Engineering II**

*Moderator: Nathan Church, Vice President for Student Life and Development*

---

Time	Presentation Number		
11:00	H1	Thampi, Suraj	Road Redesign Using Three Tiered Structure for Prevention of Black Ice Formation
11:15	H2	Thampi, Suraj	Solid Waste Management Using Comimpex Balpac PyroConverter
11:30	H3	Mammen, Jon Syverson, Kurt	Whirltronics Automation Project
11:45	H4	McKay, Chad Thean Ping, Ang	Robotic Thermal Mastic Application Cell
12:00	H5	Brummer, Mark R. Klingensmith, Ryan D. Paulson, Andrew J.	Student Research in Technology Education

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**Session I      South Voyageurs      Food**

*Moderator: Lisa Splittgerber, Assistant Professor, Foreign Language and Literature*

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Time	Presentation Number		
11:00	I1	Schuck, Holly	McDonald's Transition into the Global Market
11:15	I2	Johnson, Linda	Longevity and Lifestyle: Selected Centenarian Perspectives
11:45	I3	Kustritz, Katie	Bubble Gum through the Ages
12:00	I4	Padrnos, Eric Shamla, Paul	Process Improvement: Assembly of Freezer Hinges

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*Opening Remarks by Joane McKay, Dean, College of Education*

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**Research Matters: A Conversation with  
Successful Professionals on the Applications of Research**

**Alvin B. Irby** ('73), Operations Leader, The Mobe Group, Minneapolis, MN

Mr. Irby graduated with a major in Sociology and a minor in Business from SCSU in 1973 and then earned a Master's in Business Administration from the University of St. Thomas. He has worked for Control Data, Guidant Corporation, and Ault, Inc. Currently he is with the Mobe Group, a company he and a partner started. Mobe is a light manufacturing company supplying materials, such as catalytic converters, to the automotive industry and some parts for manufacture of medical devices. His key responsibilities are to design, develop, and implement "a complete turnkey manufacturing system" for contract manufacturers. Mr. Irby has also coached pee-wee football for 18 years.

**Beth Riesgraf**, M.D. ('74), Board Certified Family Practice Physician, CentraCare Health Plaza, St. Cloud, MN

Dr. Riesgraf's major at SCSU was chemistry/biology. She graduated in 1974 and then went on to complete medical school at the University of Minnesota and residencies at Methodist Hospital in St. Louis Park, MN, and McKennan and Sioux Valley Hospitals in Sioux Falls, SD. She has a special interest in women's health, obstetrics, pediatrics, and dermatology and serves on medical advisory boards for Women's Health and Camp Friendship.

**Jennifer Strand** ('94), Manufacturing Engineering Manager, Whirltronic, Inc., Buffalo, MN

Ms. Strand earned her B.S. in manufacturing engineering from St. Cloud State University in 1994. She has been with Whirltronic, Inc. for eight years. Recently promoted to Manufacturing Engineering Manager, she establishes and maintains systems and programs to provide technical engineering expertise for all plant manufacturing requirements for the purpose of process improvement and product quality. Whirltronic, Inc. employs 70 people and manufactures original equipment lawn mower blades for further assembly by companies such as Toro. Jennifer has maintained close ties with the Mechanical and Manufacturing Engineering Department at SCSU. One result is that engineering students from SCSU have been able to complete senior design projects at Whirltronic.

**Michael Wacker** ('96), Industrial Hygienist, U.S. Department of Labor, Occupational Safety and Health Administration (OSHA)

Originally from Milaca, MN, Mr. Wacker has worked for the U.S. Department of Labor-OSHA since 1997. He earned a B.S. in Biology with an emphasis in physiology from SCSU in 1996. He has received several awards from the Department of Labor including Innovator of the Year. He was also selected for a six week OSHA fellowship program working on research protocols in the area of biological hazards.

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**Session K      Ballroom B                      Criminal Justice Curriculum: What Do Students Think?**

*Moderator: Lin Holder, Associate Vice President, Academic Affairs*

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Time	Presentation Number		
2:00	K1	Chichosz, Jeff Fritza, Sarah Lawrence, Tanash Myamba, Flora	Criminal Justice Curriculum: What Do Students Think?

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**Session L      Ballroom C                      Contemporary Counseling Approaches**

*Moderator: Ed Bouffard, Assistant Director, Atwood Memorial Center*

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Time	Presentation Number		
2:00	L1	Dolence, Nicole Morris, Necole Pitts, Josie Rosenberg, Carrie	Contemporary Counseling Approaches

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**Session M      North Glacier                      Gender**

*Moderator: Marsha Shoemaker, Director of Internal Communications*

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Time	Presentation Number		
2:00	M1	Darwanto, Agus Davis, Harry	The Correlation between the Use of “There’re” and the Social Variables of Age, Education, and Gender
2:15	M2	Towner, Emil	Examining Textual Gaps
2:30	M3	Johnson, Laura	Women in Weather
2:45	M4	Yoshida, Chie	Expectations and Complaints in Gender Differences
3:00	M5	Dwyer, Cecelia	The Right to Privacy, Vibrators, and Obscenity Jurisprudence in the United States
3:15	M6	Dwyer, Cecelia	Idealization and Degradation of Women in the Print Media

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**Session N      South Glacier      Behavioral Sciences**

**Moderator:** *Frank Loncorich, Director, Office of Scholarships and Financial Aid*

---

Time	Presentation Number		
2:00	N1	Schneider, Daniel	Forecasting Enrollment for SCSU
2:20	N2	Curtis, Nicholas	A Return to Normalcy Through Sport
2:40	N3	Crumpler, Heidi	Creating and Maintaining Public Goods
3:00	N4	Normand, Michelle	Relational Maintenance Behaviors of Siblings in Geographical Locations

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**Session O      Lady's Slipper      Teaching and Learning Multicultural Competencies:  
Finding the Key Within**

**Moderator:** *Plamen Miltenoff, Assistant Professor, Learning Resources and Technology Services*

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Time	Presentation Number		
2:00	O1	Aysta, Alaine Furzland, Michelle Molitor, Maggie Turk, Beth	Teaching and Learning Multicultural Competencies: Finding the Key Within (originally published in the <i>Journal of Critical Inquiry Into Curriculum and Instruction</i> 4(3), Fall 2002)

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**Session P      Mississippi      Humanities**

**Moderator:** *Tomas Hergert, Assistant Professor, Learning Resources and Technology Services*

---

Time	Presentation Number		
2:00	P1	Wolf, Melissa	The Holocaust: Yesterday, Today, and Tomorrow
2:15	P2	Meissner, Nathan	The Wilford Homestead Site: An Inventory and Interpretation of Collected Artifacts
2:30	P3	Beniek, Stefanie	Inside Look at Education in South Africa
2:45	P4	Quijano, Jonathan	William Carlos Williams: Pictures from Brueghel and the Invocation
3:00	P5	Chien, Shu-Fen Larson, Brett	Honor the Aged and the Wise: The Importance of Zun Jing in Chinese Culture

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**Session Q    St. Croix                    Identity**  
***Moderator: Merton Thompson, Center for Information Media***

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Time	Presentation Number		
2:00	Q1	Atkinson, Travis Buchman, Heather Dordal, William Eggebrech, Jennifer Frie, Lisa Fry, Lindsay Georgoff, Paul Hedlund, Stefanie Hiebert, Jesse Hoch, Carly Horvat, Susan Kallstrom, Amy Otterson, Kristin Ramsay, Catherine Smith, Tiffany Vue, Kou Wicker, Jennifer Xiong, Ka Zoua	Latino/Hispanic Identity
3:00	Q2	Matros, Nicole Streefland, Lisa	An Exploration of the Relationship Between Personality and Values

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**Session R    North Voyageurs    Foreign Language Panel**  
***Moderator: Isolde Mueller, Associate Professor, Foreign Language and Literature***

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Time	Presentation Number		
2:00	R1	Fiskness, Carl	Religious Syncretism in the Americas - Sincretismo religioso en las Américas
2:20	R2	Bosak, Holly	The many colors of German life - Die vielen Farben des deutschen Lebens
2:40	R3	Carlson, Josh	German Culture II

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**Session S South Voyagers Application of Research in the Workplace**

*Moderator: Dale Williams, Associate Dean, College of Science and Engineering*

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Time	Presentation Number		
2:00	S1	Siegert, Joyce	Reading Achievement of American Indian and White Students Using Accelerated Reader: Correlations with Gender, Word Count, Classroom Practice, and Library Circulation
2:15	S2	Bruestle, Beth	Integrated Learning Systems, By Any Other Name: Their Impact On Education
2:30	S3	Motl, Allen Werner, Joseph	Lean Manufacturing
2:45	S4	Furzland, Matthew	Increasing Tolerance to Toothbrushing in a Child with Autism
3:00	S5	Annett, Angelene Nett, Sarah	Utilization of Nursing Research by Senior Nursing Students

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**Session T Ballroom All Disciplines (Poster Presentations)**

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Time	Presentation Number		
3:00	T1	Moores, Donald Shaft, Kathy Super, Mark	PC Based Ram Tester
	T2	St. Clair, Michelle	An Examination of Gender Effects in the Evaluation of Student Applicants
	T3	Chandramala, Selvarajah	Electrical Resistance Used to Detect Rat's Estrus Cycle
	T4	Franseen, Chris	Addiction Problems among Native Americans
	T5	Mochizuki, Ayako	Activism in Japan
	T6	Brandt, Amanda	An Investigation into the Occurrence of Ice Jams on The Kankakee River in Northern Illinois
	T7	Fligge, Pastel	An Enantioselective Approach Toward the Synthesis of Poison Frog Skin Alkaloid 275A'
	T8	Koll, Jakin	A Climatology of Nocturnal Severe Weather Events in Eastern South Dakota

<b>Session T</b>	<b>Ballroom</b>	<b>All Disciplines (Poster Presentations)</b>	
Time	Presentation Number		
3:00	T9	Hines, Lindsay	Changes on Neuropsychological Test Performance in Students with a History of Concussion
	T10	Schapira, Craig	Alcohol Use by Students at St. Cloud State University
	T11	Viegas, Katrina	Response of Helianthus Annuus Roots to Changes in Soil Density
	T12	Alexander, Carlos Dinham, William	Medication Minder
	T13	Wood, Terryjo	Relapse Prevention in Substance Abuse Recovery Programs
	T14	Esselman, Michael Jensen, Jennifer	Self-Assembled Monolayers as Substrates for Surface Initiated Polymerization
	T15	Watson, Sherri	A Comparison Study of Natural and Restored Wetlands Using the Nitrogen, Phosphorus and Sulfur Cycles
	T16	Arnold, Ursula	Hmong Immigration and Education in Wausau, Wisconsin
	T17	Akhunji, Bakhtiar	Relationship Between GPA and TOEFL Score for International Students at SCSU
	T18	Kron, Steve	Using Self Assembled Monolayers to Probe the Boron-Nitrogen Dative Bond
	T19	Ferrell, Marie	Smallpox Vaccine
	T20	Kortan, Ryan	Chemical Dependency Issues in the Hearing Impaired
	T21	Howell, Zoe	Effect of Growth and Light/Dark Cycles on Diatom Lipid Content and Composition
	T22	Seabloom, Kristine	Evidence of Polyploidy in Endemic Diatoms Using Classical and Modern Methods
	T23	Hoefler, Robert Jacobsson, Amy	Speech Recognition and Composition Quality
	T24	Anderson, Meggann Angerhofer, Kristan Casey, Annie Jordan, Florence Paumen, Anna Serie, Annah Sholund, Amy Thell, Janie	Speech Language Pathology: The Unknown Field

<b>Session T</b>	<b>Ballroom</b>	<b>All Disciplines (Poster Presentations)</b>	
Time	Presentation Number		
3:00	T25	Boyd, Travis	Sociology in Social Services in Disaster Situations
	T26	Frigo, Ben	A Global Chemometric Analysis Integrating Chromatographic Parameters and Fluorescence 'Lifetime' Decays for Resolving Co-eluting Analytes from Planar Chromatographic Methods
	T27	Hansen, Nicole	Social Response to Negative Sexual Experiences
	T28	Chan, Wen How Ong, Su Sien	Detoxification of Chloroacetaldehyde by Aldehyde Dehydrogenase
	T29	Schouweiler, Calisa	Individual Variation in the Decrease of VO <sub>2</sub> While Skiing at 1800m in Elite Female Cross-Country Skiers
	T30	Tollefson, Bryan	Knowledge and Opinions About the Ozone Hole
	T31	Nordin, Stephanie	Significant Severe Thunderstorm Proximity Soundings
	T32	McIntyre, Trisha Scott, Sara	Medicinal Plants of Bagaces, Costa Rica
	T33	Hancock, Jay	Should United States Citizens Be Vaccinated Against Smallpox?
	T34	Fischer, Mollie Ziegler, Michael	Ethical Decision Making
	T35	Rakow, Vanessa	Chemical Dependency and Adolescents
	T36	Hess, Jenilee Streefland, Lisa	Recall Performance as a Product of Practiced or Non-practiced Exemplars
	T37	Henry, Amy	Precipitation Verification of the LAPS Storm Total Precipitation Estimates
	T38	Gerads, Melissa	Effects of Blue Cohash on Serum Oxytocin Concentrations in Virgin Female Rats
	T39	Weimer, Mark	Adjustable Knife Sharpener
	T40	Assenmacher, Mike	Are American White Pelicans Breeding in Northern Montana Responsible for Catfish Depredations in the Southeastern U.S.?
	T41	Scott, Daria	Changes in Characteristics of US Snowfall Over the Last Half of the 20th Century

<b>Session T</b>	<b>Ballroom</b>	<b>All Disciplines (Poster Presentations)</b>	
Time	Presentation Number		
3:00	T42	Kapushinski, Tiffany	Paleolimnology of Sullivan Lake
	T43	Nkhata, Katai	Studies using the eosinophil model cell line AML 14.3D10
	T44	Lawrence, Rachel	Perliminary Crystalization Methods of Aldhyde dehydrogenaes
	T45	Otremba, Jessica Sitzman, Amber	Synthesis and Spectroscopic Studies of Vanadium Complex with Insulin Like Properties
	T46	Anderson, Hiliary Hanson, Bianca Hjalmervik, Scott	Community Psychology Club: An Evolving Project
	T47	Cleland, Megan Mills, Travis	Synthesis and Characterization of Vanadium Complex with Bidentate Ligand: Potential Antidiabetic Properties
	T48	Winters, Valerie	Differential Display of Proteins in Tumor Cells
	T49	Exsted, Robin	Statistical Analysis of the Healthy Start Progress Report: Is a Good Parenting Construct Measurable
	T50	Paumen, Allison	Listening in Noise: A Study of Backward Masking for Speech and Tones
	T51	Telander, Eric	Knowledge and Opinions about Drilling in the Arctic National Wildlife Refuge
	T52	Mitchell, Katherine Wyman, Jamie	State Anxiety and Visual Memory
	T53	Koch, Jason	Chronic Wasting Disease
	T54	Roskop, Luke	Photochemistry of Phenethyl Isothiocyante
	T55	Dechaine, Jennifer	Molecular Determinants of Cellular Sensitivity to Oteliones
	T56	Pow, Guey Lin Wang, Chi Po	Qi Gong: Chinese technique
	T57	Wollack, James	Is Spring Coming Earlier? An Analysis of Flowering Data from <i>Hepatica Americana</i>
	T58	Hesch, Jennifer Jewell, Michael	Synthesis of 2-propoxyethanal
	T59	Fitze, Timothy	Knowledge and Opinions on Global Warming Issues

<b>Session T</b>	<b>Ballroom</b>	<b>All Disciplines (Poster Presentations)</b>	
Time	Presentation Number		
3:00	T60	Hupke, Janesa	Chemical Dependency and Native Americans
	T61	Schaubhut, Jayne	Induction of Aldehyde Dehydrogenase in Human Saliva by Tea
	T62	Kakuk, Michael	Temperature Effects on the Lifetime of the Phi Particle
	T63	Hanson, Ken Salo, David	Synthesis of Nonoxyethanal
	T64	Blonigen, Nicholas	Identification and Characterization of Differentially Expressed Proteins in Human Breast Carcinoma MCF-7 and Its Drug-Resistant Counterpart MCF-7/UCN01
	T65	Chege, Polly	Chemical Dependency Treatment among the Homeless/Elderly
	T66	McSorley, Angela	An Investigation Into the Knowledge, Opinions, and Habits of SCSU Biology 202 Students Regarding Antibiotics and Livestock
	T67	Bannister, Michelle Speckien, Emily	The Inquiry Process for K-8: Japanese and American Relations During World War Two
	T68	Walker, Lindsay	The Expression of ABCG1 Transporter Proteins in Human Breast Cancer Cells
	T69	Larson, Jana	Effects of Environmental Estrogens on Fathead Minnows
	T70	Rimstad, Grace Vogt, Vincent	Memory & Directed Forgetting
	T71	Assenmacher, Mike Benham, Mike Howard, Erin	The Effects of Human Activity on the Water Quality and Diatom Populations in the St. Cloud, MN Granite
	T72	Maie, Takashi	Cranial Anatomy of <i>Sicyopterus Stimpsoni</i>
	T73	Henderson, Adam	Construction of a Low-Cost, Homemade Analog to Digital Converter for Incorporation into the Undergraduate Chemistry Curriculum
	T74	Lunsman, Melissa	The Effect of Duration Control on Prospective Time Estimation

<b>Session T</b>	<b>Ballroom</b>	<b>All Disciplines (Poster Presentations)</b>	
Time	Presentation Number		
3:00	T75	LaMourea, Jennifer Wessel, Emily	Synthesis of Ethylene Glycol Ether Aldehydes
	T76	Leslie, Denise	Do Hate Crimes Deserve Longer Sentences?
	T77	Fouquette, Charryse Rudrud, Emily	Comparison of Scheduled and Non Scheduled Tests on Student WebCT Access
	T78	Kuyomba, Uchoti Smith, Nancy	Synthesis of 2-phenoxyethanal
	T79	Lee, Eu Han	Monitoring the Expression of Class 3-Aldehyde Dehydrogenase (ALDH-3) Under Oxidative Stress Induced By Cadmium
	T80	Billings, Brian	Orographic Flash Floods
	T81	Reisinger, Mellissa Thompson, Kirsten	The Late Wisconsinan History of the Upper Mississippi River and its Tributaries between Brainerd and St. Cloud, Minnesota
	T82	Richter, Devon	Prescription Drug Abuse
	T84	Sundin, Paul	Knowledge and Opinions of Arsenic in Drinking Water
	T85	Madland, Nick	The Relationship Between Experience and Computer Anxiety
	T86	Jadwinski, Victoria Liska, Michelle	Working Memory: The Effects of Mnemonics on Reading Comprehension
	T87	Rudrud, Emily Fouquette, Charryse	Comparison of Undergraduate and Graduate Student Access of WebCT Courses
	T88	Crownover, Angie Matros, Nicole	Effects of False Memory on Source Monitoring and Wishful Thinking
	T89	Rucks, Sarah	Depression and Chemical Dependency
	T91	Qureshi, Ali Vierzba, Joe	Remote Controlled HAM Radio Repeater
	T92	Powless, Hadley	Metabolism of Ethylene Glycol Ethers
T93	Wilcox, Lane	Effects of Vanadium Complexes on Human Carcinoma Cells	
T94	Jorgenson, Sandra	Medical Trends in Chemical Dependency Treatment	

<b>Session T</b>	<b>Ballroom</b>	<b>All Disciplines (Poster Presentations)</b>	
Time	Presentation Number		
3:00	T95	Hanson, Colin Khaled, Pervez Meemken, Mike	SIMBA(Semi-Intelligent Maze Breaking Automaton)
	T97	Sundgaard, Sven	Application of the First Law of Thermodynamics to Maximum Temperature Forecasting
	T98	Wuollet, Eric Xiaonan, Shen Yang, Ye	Multichannel CDMA Music Entertainment System
	T99	Rai, Ruhi	Motility Test for Hawaiian Gobies
	T100	Kimball, Harold	The Depleting Consciousness of Depleted Uranium

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**College Receptions/Award Ceremony**

**4:30 – 5:30 p.m.**

College of Education	Lounge, Education Building
College of Fine Arts and Humanities	Heritage Lounge, 2 <sup>nd</sup> Floor, Atwood Memorial Center
College of Science and Engineering Denise M. McGuire Award Ceremony (see program below)	Mississippi, 1 <sup>st</sup> Floor, Atwood Memorial Center
College of Social Sciences	Little Theatre Lounge, 1 <sup>st</sup> Floor, Atwood Memorial Center

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**College of Science and Engineering**

**4:30 – 5:30 p.m.**

**Denise M. McGuire Student Research Award Ceremony**

Mississippi, 1<sup>st</sup> Floor, Atwood Memorial Center

<b>Student Name(s)/Title of Research Project</b>	<b>Faculty Research Sponsor(s) Department</b>
Mike Assenmacher / "Are American White Pelicans Breeding in Northern Montana Responsible for Catfish Depredations in the Southeastern U.S.?"	Marco Restani Biological Sciences
Jennifer L. Dechaine / "Molecular Determinants of Cellular Sensitivity to Otelliones"	Lakshmaiah Sreerama Chemistry



<b>Student Name(s)/Title of Research Project</b>	<b>Faculty Research Sponsor(s) Department</b>
Paul Iniguez / "Thermal Effects of the Twin Cities Urban Heat Island"	Tony Hansen Earth and Atmospheric Sciences
Sardar Islam, Aliou Maiga and Mohamed Ba / "Comparing the Performance of Heuristics for the Rectilinear Steiner Arborescence Problem"	Ramnath Sarnath Computer Science
Ryan A. Koch / "Self-Correcting Johnson Counter and the Hypercube"	Pranava K. Jha Computer Science
Jana Larson / "A Study of the Effects of Environmental Estrogens on Larval Development in <i>Xenopus laevis</i> , the African Clawed Frog"	Heiko L. Schoenfuss Biological Sciences
Eu Han Lee / "Monitoring the Expression of Class 3-Aldehyde Dehydrogenase in MCF-7 Cells Under Oxidative Stress Induced by Cadmium"	Lakshmaiah Sreerama Chemistry
Stephanie Nordin / "Significant Severe Thunderstorm Proximity Soundings"	Tony Hansen Earth and Atmospheric Sciences
Su Sien Ong / "Detoxification of Kidney Toxin - Chloroacetaldehyde"	Lakshmaiah Sreerama Chemistry
Judith M. Peters / "Transport Processes in Relativistic Heavy Ion Collisions"	Kevin Haglin Physics, Astronomy, and Engineering Science
Hadley Powless / "Bitransformation of Ethylene Glycol Ether Aldehydes"	Lakshmaiah Sreerama Chemistry
Jake Rafferty / "Photochemical Investigation of Organic Isothiocyanates"	Dan Gregory Chemistry
Kristine M. Seabloom / "Evidence of Polyploidy in Endemic Diatoms Using Classical and Modern Methods"	Chris A. Kvaal/Matthew L. Julius Biological Sciences
Sven O. Sundgaard / "Application of the First Law of Thermodynamics to Maximum Temperature Forecasting"	Tony Hansen Earth and Atmospheric Sciences
O'Niell R. Tedrow / "Effects of Biogenically Active Compounds on <i>Melosira Varians</i> Agardh. (Bacillariophyta), a Common Component of Freshwater Phytoplankton Communities"	Matthew L. Julius Biological Sciences

Award recipients will receive a monetary stipend of approximately \$200.00 (per research project), possible funding for research supplies and expenses and formal recognition by the College of Science and Engineering.

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**Session U      Mississippi                      Science and Engineering III**

**Moderator:** *Jennifer Kolden, Information Officer 1, Applied Research Center*

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Time	Presentation Number		
5:30	U1	Guggenberger, Joseph Tran, Long	Spot Welding Machine Design
5:45	U2	Ba, Mohamed Islam, Sardar Maiga, Aliou	Comparing the Performance of Heuristics for the Rectilinear Steiner Arborescence Problem

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**Session V      North Voyageurs      The Native American Church's Peyote Ceremony: Its Enactment and Relationship to Other Religious Ceremonies**

**Moderator:** *Rex Veeder, Interim Assistant Vice President, Academic Affairs/Faculty Relations*

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Time	Presentation Number		
5:00	V1	Lambert, Wanda Prom, Jason Ross, Stephanie Smith, Kathryn	The Native American Church's Peyote Ceremony: Its Enactment and Relationship to Other Religious Ceremonies

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**Session W      South Voyageurs      International Hot Spots and the Contact Model: Can We Solve World Conflict?**

**Moderator:** *Steve Ludwig, Vice President, Administrative Affairs*

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Time	Presentation Number		
5:00	W1	Edholm, Erin Gobler, Jodie Judd, Owais Lambert, Laura	International Hot Spots and the Contact Model: Can We Solve World Conflict?

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**Session X    Lady's Slipper    Visual Comparison of South African-U.S. Student Life**  
*Moderator: Neil Anderson, Director, University Imaging*

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Time	Presentation Number		
5:00	X1	Barnett, Rodriguez L Kwamin, Marian Nhim, Heang Tes, Chantha Yang, Eileen	Visual Comparison of South African-U.S. Student Life

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<b>Title and Abstract</b>	<b>Presentation ID</b>	<b>Time</b>	<b>Room</b>
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**Contemporary Relationship Counseling Approaches**

A1

11:00

Ballroom B

This panel will present contemporary theorists, theories and applications used in family and relationship counseling. Each panelist will offer information on the theorist or practitioner as well as techniques, applications, limitations and strengths of the application. Feminist, family and nouthetic counseling will be presented and discussed.

**Student(s)**  
 Freitag, Alicia  
 Goerz, Rebecca  
 Maze, Lea

**Sponsor(s)**  
 Jorgensen, Leeann

**An Argument for God**

B1

11:00

Ballroom C

I will argue that the existence of God can be proved. I will do this by using a form of the argument that Descartes used to prove his own existence. I will attempt to show that free will can also be shown from the type of introspective process he applied. From this base premise, I will apply analytic reasoning to describe why the existence of God is necessary.

**Student(s)**  
 Bushee, Scott

**Sponsor(s)**  
 Smith, Jeffery

**The Case against Distributive Justice**

B2

11:15

Ballroom C

This is an attempt to show why the system of distributive justice John Rawls described in his book “A Theory of Justice” is invalid. I will argue that justice cannot have a say in the state of how particular things are to be distributed, but only in the way rights and obligations are to be distributed by society. Specifically, I will argue that attempts to include distribution of particulars in a theory of justice fail because they contradict a premise that is necessary for social justice, namely, the autonomy of the individual.

**Student(s)**  
 Bushee, Scott

**Sponsor(s)**  
 Smith, Jeffery

Title and Abstract	Presentation ID	Time	Room
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**On the Existence of God: The Argument from Film**

B3

11:30

Ballroom C

Of the perennial philosophical questions none has fascinated the thinker more than whether or not God exists. The Ontological Argument, Cosmological Argument and Design Argument have all been formulated in an attempt to answer this question. This presentation will add the Argument from Film to the above ranks. The Argument from Film follows the methodology set out by those adventurous minds that wish to prove the existence of such controversial entities as sea monsters, Big Foot, and aliens. It promises to be either effectively entertaining or give rise to serious skepticism.

**Student(s)**  
Dolan, Sean

**Sponsor(s)**  
Smith, Jeffery

**The Moral Dimension of the AIDS Crisis and the Role of Media**

B4

11:45

Ballroom C

In the early stage of the AIDS epidemic in the 1980s, society responded with panic in the face of a new contagious and cureless disease. Individuals and organizations tried hard to understand the causes and find solutions to the AIDS chaos. In a long process of negotiating the meaning of this public health crisis, they began to associate AIDS with moral decay in order to shift responsibility and blame to certain groups of people. Scholars have defined this type of social reaction as “moral panics.” Drawing on the theory of moral panics proposed by Cohen and Ben-Yehuda, this research paper aimed to explore how AIDS was first framed as a moral crisis in the 1980s, and to examine the role of mass media in this process of signification. The study found that the characteristic signs and reactions of moral panics were seen in the early stage of the AIDS epidemic, particularly in the identification of deviant groups and the evaluation of their behavior on moral grounds. These associations were generally amplified by the media to support the social consensus. On the basis of a textual analysis of the film Philadelphia (1993), this paper argues that through the construction of a distinctive division between deviant groups (social threats) and non-deviant groups (innocent victims), the media identified the subjects to be blamed for the spread of the HIV virus and thus supported the moral panics of the 1980s.

**Student(s)**  
Tsugama, Noriyoshi

**Sponsor(s)**  
Rodriguez, Ilia

Title and Abstract	Presentation ID	Time	Room
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<b>Mascot Issues</b>	C1	11:00	North Glacier
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A mascot is a person, animal, or object believed to bring good luck, especially one kept as the symbol of an organization such as a sports team. Mascots serve many roles for the team including images, rallies, and allows the team to be set apart from other teams. Currently, we have many issues regarding sport associations using mascots that depict certain ethnic groups. Considering Saint Cloud State University as a diverse campus, we have various viewpoints regarding certain mascots and team names. In the current spring survey of currently enrolled SCSU students, using a scientific random sample, we are addressing the mascot issue to find out how SCSU students feel towards this issue. In our survey we addressed questions regarding mascots that depict ethnic groups and the use of Native American mascots. We will be assessing to see if there are a wide variety of feelings towards the use of mascots depicting these groups. We will be analyzing our data by ethnic origin, gender, and class standing. In essence we will be discussing the role of a mascot and feelings towards mascot usage of certain ethnic groups.

**Student(s)**  
Ackerman, Melissa  
Marisol, Rodriguez  
Peterson, Tesha

**Sponsor(s)**  
Frank, Stephen

<b>SCSU Campus Safety Issues</b>	C2	11:30	North Glacier
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In light of the recent events at area universities, campus safety seems to be an issue on the minds of many students. The disappearance of students from universities in both Minnesota and Wisconsin in recent months sparked our interest about the views of St. Cloud State University students. Consequently, the SCSU Survey in its annual spring survey of SCSU students addressed this issue. Using the computer assisted telephone interviewing, or CATI system, students were asked to answer questions concerning this topic. Using a scientific random sample of currently enrolled SCSU students, the SCSU spring 2003 survey addressed some of the following safety issues: students' overall sense of safety on campus, areas where respondents felt particularly unsafe, and the respondents' views on the performance of the SCSU Department of Public Safety. Data will be analyzed by key demographic variables including gender, class standing, and place of residence (on vs. off campus). Results will be compared to the data collected from the same questions in past spring surveys.

**Student(s)**  
Ben-Yehuda, Paul  
Jabs, Angela  
Lunser, Jason  
Schultz, Renate

**Sponsor(s)**  
Wagner, Steven

Title and Abstract	Presentation ID	Time	Room
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**Smoke Out the Smokers**

C3

12:00

North Glacier

Due to increasing awareness of the harmful effects of first and second-hand smoke, and to nationwide legislation prohibiting smoking in public places, the Saint Cloud State University (SCSU) Survey has continually conducted studies on student smoking and how it affects students' views on smoking prohibitions that have been or may be implemented on the SCSU campus. The SCSU survey team and the students conducted the study using the computer assisted telephone interviewing (CATI) system. The method used to obtain the data was systematic random sampling of currently enrolled SCSU students living anywhere in the state of Minnesota. Our main goal is to ascertain student views on the smoking policy on the SCSU campus. We will compare the empirical data from four studies conducted from 2000 to 2003 on student smoking issues. We will also be including data from the 2003 student survey on student views about the newly implemented regulations banning smoking within 50 feet of campus buildings and the possibility of banning smoking across campus. In addition, our study will provide possible variables influencing student views on implementing smoking policies.

**Student(s)**  
 Becker, Ginger  
 Hooegeven , Laurie

**Sponsor(s)**  
 Kukoleca Hammes, Michelle

**Modeling the Spread of Invasive Plants on a Frequently Disturbed Military Training Site**

D1

11:00

South Glacier

Invasive species are not native to a region and cause economic or environmental harm by out-competing native organisms for available limited resources. For example, invasions by non-native species are believed to be the second largest cause of native species extinctions and cause millions of dollars in damage in the United States. Human activities have increased the rate of spread and number of plants invasions. Currently hundreds of non-native plants are causing environmental or economic harm throughout the country. The most opportune time to control spreading plant populations is when they are small, so predicting the locations of the potential spread will result in early detection. Three invasive plants that are well established on Camp Ripley, MN are spotted knapweed (*Centaurea maculosa*), leafy spurge (*Euphorbia esula*), and common tansy (*Tanacetum vulgare*), and are spreading due to constant military activity. They have already caused major damage and change in North America's grassland ecosystems. I am proposing a model that will predict where these established invasive plant populations will potentially spread. The model is based on recent research of factors that facilitate invasive plant spread such as disturbance, soil type, community composition, and distance to roads. The dispersal of invasive plants is caused inadvertently by military activity that disturbs fields and opens new areas for invasive establishment. Soil type dictates where plant species prefer to grow. The community composition, for example plant competitors, might inhibit the invasive plant spread. Also, proximity to a road might suggest that vehicles are major dispersal agents. This model would provide a tool that would allow early detection and early control of these invasive plants.

**Student(s)**  
 Babski, Jill

**Sponsor(s)**  
 Arriagada, Jorge

Title and Abstract	Presentation ID	Time	Room
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**Effects of Biogenically Active Compounds on *Melosira varians* Agardh. (Bacillariophyta), a Common Component of Freshwater Phytoplankton Communities**

D2

11:15

South Glacier

Biogenically active compounds have been discovered in many surface water samples in Europe and North America. Wastewater effluent is identified as a major source of contamination and found to revert much of the metabolic products of these biogenically active compounds back to their original form. This presentation explains methodology for determining the effects of these contaminants through a newly developed bioassay, examining the physiological response of a diatom to these compounds. Diatoms represent an important aspect of the primary production community. They are a desirable food source over other members of the primary production community through storage of photosynthetically produced sugars in the form of lipids rather than starch. Therefore, members of higher trophic levels selectively feed on diatoms when present with other members of the primary production community. This study examines the effects of select biogenically active compounds on the gross morphology and physiological development of the diatom species *Melosira varians* Agardh. Unicellular protists such as diatoms are not susceptible to these contaminants in a manner directly synonymous to that expressed in vertebrates. However, many of these compounds are lipophilic making them particularly effective in entering the diatom cell membrane. Comparing cell density, lipid composition, fatty acid concentrations, and the electron microscope ultra-structure in control and exposed cultures achieve this study's experimental objectives. This diatom was selected because it commonly occurs in most freshwater environments and has been the subject of other toxicological studies. An adequate literature base also exists for evaluating results of this experiment. The species grows very rapidly, achieving log phase growth in only two to three days, and is easy to maintain in culture.

**Student(s)**

Tedrow, O'Niell

**Sponsor(s)**

Julius, Matthew

**Effects of Acetaminophen on Male Fathead Minnows Reproductive Success**

D3

11:30

South Glacier

Little is known about the effects of pharmaceuticals released into the environment on aquatic vertebrates. Many pharmaceuticals pass through wastewater treatment plants and have been found in surface waters in the US (Kolpin et al., Environmental Science and Technology, p.1202-1211, 2002). In this study the fathead minnow, *Pimephales promelas*, an EDSTAC aquatic tier one test organism was exposed to acetaminophen, an anti-inflammatory pharmaceutical, which was found by Kolpin and colleagues (2002) in 24% of sampled surface waters in the USA. Fish were exposed for 21 days to 20mg l-1 acetaminophen, twice the highest amount reported by Kolpin et al. Following exposure, morphological endpoints (standard and total length, weight, secondary sexual characteristics, HIS, and GSI) were evaluated. Reproductive success was determined based on the fishes' ability to defend a nest site against a non-exposed male in the presence of a female fathead minnow. The preliminary results from this study indicate that acetaminophen may have some morphological and reproductive effects on fathead minnows. However, this study only included only one of many pharmaceutical found in the at least some US surface waters and its effects might be exacerbated by other biologically active compounds present.

**Student(s)**

Legatt, Maria

**Sponsor(s)**

Schoenfuss, Heiko



Title and Abstract	Presentation ID	Time	Room
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**Reproductive Health of Walleye Exposed to Treated Sewage Effluent**

D4

12:00

South Glacier

A sample of walleye were removed from the effluent discharge of the St. Paul Sewage Treatment Plant, and sacrificed for study of their reproductive tissues, specifically the presence of vitellogenin and intersex conditions induced by Estradiol. Vitellogenin is a normal protein produced in oogonia, and it is documented that male fish with poor reproductive health frequently produce vitellogenin. This induction makes vitellogenin a good indicator of reproductive health. Fish with sufficient Estradiol exposure may become intersexed. An intersex condition occurs when both male spermatozoa and female oogonia are present in the same tissue. The gonadal tissues were excised, identified for sex, taken through standard histological dehydration protocol, imbedded in paraffin, sliced 3-4µm thin to produce slides, stained using standard Haematoxylin and Eosin protocol, and examined for the induction of vitellogenin and intersex using oil immersion techniques. Vitellogenin induction can be caused by an increased concentration of Estradiol in the environment, which makes the effluents of sewage treatment plants an optimal natural test site for reproductive health of walleye because of effluents contain elevated Estradiol concentrations. If Estradiol does induce vitellogenin production, walleye reproductive health may be affected, and may lead to decreased walleye populations, and affect environmental homeostasis.

**Student(s)**

Schweiger, Paul

**Sponsor(s)**

Schoenfuss, Heiko

**A Climatology of Nocturnal Severe Weather Events in Eastern South Dakota through Eastern Minnesota**

E1

11:00

Lady's Slipper

A climatology of nocturnal severe weather events from the warm seasons (April-September) of the years 1990-2002 has been constructed to quantify the time of occurrence of severe weather in east central South Dakota through eastern Minnesota. The lightning studies of Zajac and Rutledge (2000), and Riley et al. (1987) show that the time of maximum thunderstorm activity in South Dakota and Minnesota might be broader than was found by Wallace (1975). If the nocturnal thunderstorm distribution is broader, what does the severe weather distribution look like? This study helps to answer this question by examining hourly distributions of severe weather in the county warning areas of the National Weather Service offices in Chanhassen, Minnesota and Aberdeen, South Dakota. The goal of this study is to show secondary peaks of severe weather during the night. Temporal distributions of hail, damaging winds, and tornadoes have been constructed using statistical analysis. Results will be presented and compared with other studies, with emphasis on the secondary peaks in nocturnal severe weather.

**Student(s)**

Koll, Jakin

**Sponsor(s)**

Weisman, Robert

Title and Abstract	Presentation ID	Time	Room
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**Liquid Phase Microextraction**

E2

11:15

Lady's Slipper

Liquid phase microextraction (LPME) is based on the premise that volatile chemicals in an aqueous solution will partition into a hexadecane drop in the headspace at a controlled rate. The drop can then be recovered after a fixed period of time and injected into a gas chromatograph/mass spectrometer (GC/MS). The volatile materials present in the sample under study are chloroform (CHCl<sub>3</sub>), dichlorobromomethane (CHCl<sub>2</sub>Br), chlorodibromomethane (CHClBr<sub>2</sub>), and bromoform (CHBr<sub>3</sub>), commonly called trihalomethanes (THMs). These compounds are present in drinking water as a by-product of chlorination. This research explores the accuracy and precision of the LPME technique by analyzing water samples obtained by the St. Cloud Water Treatment Plant, comparing those results with the recommended Environmental Protection Agency (EPA) levels, and validating by comparison to results obtained by the Minnesota Department of Health (MDH) using EPA method 552.2. Excellent linearity is obtained in the 2-80 ppb range. However, the precision is variable, and a significant difference is observed between the LPME results and those from the MDH. The use of an internal standard is investigated as a means of improving the precision and accuracy. LPME shows a great potential as an inexpensive, simple, fast and reliable method for monitoring THMs in drinking water.

**Student(s)**

Schwartz, Jenna

**Sponsor(s)**

Jeannot, Michael

**Transport Processes in Relativistic Heavy-Ion Collisions**

E3

11:30

Lady's Slipper

The study of extremely dense forms of matter produced in relativistic heavy-ion collisions is designed to aid in understanding the structure of the early universe. If a quark gluon plasma is formed in such a collision, depending upon the order of the deconfinement phase transition, there may also be a mixed phase of quarks, gluons and hadrons. In the presence of a temperature gradient, thermophoresis will lead to significant flow in addition to hydrodynamical flow. This research project examines not only the effect of thermophoresis on flow, but also the effect of two other transport processes: quark diffusion and viscosity. It is suspected that thermophoresis contributes significantly to flow values, but quark diffusion has the dominant effect.

**Student(s)**

Peters, Judith

**Sponsor(s)**

Haglin, Kevin

Title and Abstract	Presentation ID	Time	Room
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<b>Photochemistry of Aromatic Isothiocyanates</b>	E4	11:45	Lady's Slipper
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Organic isothiocyanates are prevalent in agriculture and biological systems. They also have many scientific, industrial and medical applications. Most notably, isothiocyanates are believed to possess cancer preventing properties. The purpose of this research is to develop the overall photochemistry of aromatic isothiocyanates. A study of this nature and breadth has not been undertaken despite the importance of these compounds. Because these compounds are so prevalent, they are undoubtedly exposed to ultraviolet light from the sun and it is therefore necessary to understand the reactions they undergo. Most of the work done thus far has focused on the irradiation of benzyl isothiocyanate. It was observed that the main photoreactions were its reversible loss of sulfur to form benzyl isocyanide and its reversible isomerization to benzyl thiocyanate. The desulfurization reaction was observed to be greatly enhanced by the presence of the sulfur trap cyclohexene. The photochemical efficiency of desulfurization reaction was found to be 12.0% with cyclohexene and 3.13% without. The isomerization reaction was observed to greatly favor the isothiocyanate by a ratio of about 30 to 1 and its efficiency was determined to be 1.17%. Results of a current thermodynamic and kinetic study will also be presented. Equilibrium constants and rates for the two main photoreactions are being studied along with the effect of reaction conditions on these rates. Preliminary work has also been done on phenyl isothiocyanate and phenethyl isothiocyanate to deduce the effect of structure on reactivity. This work has shown that major photoreaction of these compounds is sulfur loss with lower efficiency than benzyl isothiocyanate and that no isomerization to the corresponding thiocyanate is observed.

**Student(s)**  
Rafferty, Jake

**Sponsor(s)**  
Gregory, Daniel

<b>Thermal Effects of the Twin Cities Urban Heat Island</b>	E5	12:00	Lady's Slipper
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As the population of the United States increases, urban sprawl of major metropolitan areas will continue to create a larger and larger impact on the surrounding environment. One aspect in which an urban area largely affects the local area is in the production of an Urban Heat Island (UHI). Studies have shown that temperatures in the core of a metropolitan region can be elevated by as much as six degrees Fahrenheit. With a population of over 2.6 million people, the Minneapolis-St. Paul metro area can have a pronounced effect on the local weather. Temperature data consisting of maximum and minimum temperatures were obtained through the National Weather Service's Cooperative Observer Network. Twenty stations were selected to represent the Minneapolis-St. Paul metro area and the surrounding rural area. The data was carefully analyzed for the years 2000 through 2002, specifically the months of January and July. The resulting data was plotted and analyzed to produce maps depicting the Urban Heat Island of the Minneapolis-St. Paul metropolitan area. The strength of the UHI varies from only a few degrees Fahrenheit during the month of January, to over five degrees Fahrenheit during the month of July.

**Student(s)**  
Iniguez, Paul

**Sponsor(s)**  
Hansen, Anthony

Title and Abstract	Presentation ID	Time	Room
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<b>Dynamics and Control</b>	E6	12:15	Lady's Slipper
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The ability to control and improve locomotion extends not only to street vehicles but to water vehicles. There are a number of elements that need to be taken into account when control of sailing machines is considered. The typical sail boat is subjected to forces from the wind and the water it's upon. These aero-hydrodynamic forces create translation and rotations of the vessel about its 3 axes resulting in motion that is quite complex. In this study, a simplification of these effects on the sail boat will be taken as a starting point where only horizontal translation will initially be considered. With this simplification, the effects of sail angle on the vessel will be accounted for by studying the how the motion of the vessel changes due to drag and lift forces. Additions to this model will account for variations in wave and wind behavior. The ultimate goal of this study is to develop a workable optimized control strategy for sail boat navigation based on sail orientation. To this end, the effects of these variations will be obtained with the use of sensors such as inertial gyroscopes, sonar and such. This sensory information will be the input to the motor which controls sail orientation. This paper will serve as a review of the current state of the art and will explore some new approaches to modeling and control that will be implemented.

<b>Student(s)</b> Lawal, Iyabo	<b>Sponsor(s)</b> Korde, Umesh
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<b>An Analysis of Chinese Malaysians? Attitudes toward Language Choice in Malaysia</b>	F1	11:00	Mississippi
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Studies on sociolinguistics show that language choice is decided by the environmental differences. In conversation, what are more interesting is the factors that govern the choice of a particular sociolinguistic code on a particular occasion. Malaysia has a long history of diverse cultures and multilingualism. Three major languages co-exist in the society: Malay, English, and Chinese varieties. In this multilingual-entrenched country, how do Chinese Malaysians identify themselves in the society? What attitudes do Chinese Malaysians have when they are in the face of a language choice among Malay, English, and Chinese? Does language choice affect their social identity? With such questions in mind, this study investigated and analyzed the real situation of 1) how Chinese Malaysians make a language choice in different occasions among Malay, English, Chinese? 2) What are their attitudes towards three languages? 3) How do they evaluate of their multilingual society? In order to collect data, interview and questionnaire survey were adapted in this study with twenty-nine Chinese Malaysian students at SCSU. We found out that Malay as a national language functions as a unifying factor but has never taken the exclusionist stand to other language varieties. All Chinese Malaysians cannot avoid using Malay in order to meet living and educational needs, although they are not eager to learn it. On the other hand, because English plays a crucial role in national economics, Chinese Malaysians recognize that a higher English proficiency level attained enables them to develop their professional career. Regarding Chinese language, Chinese Malaysians use it more as a symbol to show identity and solidarity in a group, and intimacy in the family or around friends. Besides, we also found out a special phenomenon of diglossia which is different from the common sense of diglossia in terms of sociolinguistics.

<b>Student(s)</b> Pu, Chang Vong, Chi Keong	<b>Sponsor(s)</b> Robinson, James
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Title and Abstract	Presentation ID	Time	Room
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**Bilingual Education**

F2

11:20

Mississippi

Several states are proposing and passing many anti-bilingual education laws within recent years causing many English Language Learners in the United States to be denied their rights to an equal education. Although these laws are popular among politicians, many U.S. citizens are not familiar with bilingual education, or how it benefits students involved. From the perspective of a pre-service/first-year teacher, I hope to outline key issues about bilingual education for the benefit of other pre-service/first-year teachers. My intentions in this research are to provide basic information that will help pre-service/first-year teachers understand the logistics and politics surrounding bilingual education programs. This research will explore the following questions:

- What is bilingual education?
- What are its objectives?
- What is the U. S. history behind bilingual education?
- What is the importance of conserving native languages?
- How has bilingual education become a political issue?
- What do the proponents of bilingual education state?
- Why are citizens or politicians opposed to bilingual education?
- How could a bilingual program be implemented?

I will also prepare an outline that will be helpful for both pre-service/first-year teachers as well as veteran teachers about the impact and benefits of bilingual education.

**Student(s)**  
Rosha, Gwen

**Sponsor(s)**  
Serrano, Ramon

**An Investigation of Bilingual Education**

F3

11:40

Mississippi

There is much controversy regarding bilingual education programs in America. Parents, educators, and politicians all have differing points of view on this issue. In my talk, I seek to understand the dynamics behind the debate. What are the supporting and opposing forces behind it and furthermore, what are their motives? I will attempt to answer the question if bilingual education should be abandoned. I critically examined and weighed the pros and cons of bilingual education from a historical, legal, educational, social and international perspective.

**Student(s)**  
Schultz, Emily

**Sponsor(s)**  
Koeppen, Kim  
Robinson, James

Title and Abstract	Presentation ID	Time	Room
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**Issues of Community Development: Small and Rural Towns in the Context of Central Minnesota**

G1

11:00

St. Croix

This presentation draws from a research study that surveyed 24 small and rural communities in Central Minnesota. The purpose of this research is to study the processes by which rural communities choose their development plans. The main question the research explores regards the process and means that rural communities use to address their development needs and priorities. Answers to such questions are closely related to the success of individual development efforts and to the sustainability of the rural communities. While the conclusion and policy recommendations reflect the whole study, this presentation will showcase the results from five case studies that include Albany, Freeport, Richmond, Rockville, and Roscoe. These communities appear to be demographically, socio-culturally, and economically representative of the entire study population. A brief introduction on the purpose, history, methodology, stages of research, and significance of the research will first be presented. This will be followed by the general description of each case study. In a wider context, the findings of this study will inform the rural development and policy making context and thus provide and design appropriate programs and processes through which rural communities can be more effectively assisted.

**Student(s)**  
 Bouvet, Nathan  
 Jensen, Derrick  
 Koll, Carissa  
 Noerenberg, Jon  
 Wittman, Abbi

**Sponsor(s)**  
 Rigopoulou, Aspasia

**Road Redesign Using Three Tiered Structure for Prevention of Black Ice Formation**

H1

11:00

North  
 Voyageurs

Many states in the northern parts of USA have seen numerous accidents and dangerous driving conditions due to the accumulation of snow and formation of black ice on the roads. This condition is caused by temperature fluctuations on the surface of the road. These temperature fluctuations are caused by atmospheric as well as geothermal heating and cooling. To combat this problem the Department of Transportation of these northern states use a variety of methods ranging from steel mesh and chains on tires of vehicles to spreading of salt or sand on the roads. The use of these steel chains and rock salt on roads causes a lot of damage to the roads and environment. A study on an alternative solution using polymer matrix buffer layer to insulate the top layer of the road from geo thermal energy and at the same time the lower layers from cracking due to fluctuations in internal stress was done last year. This study is further expanded here to include the design and structure of a road using this method where the road will be split into three layers each having specific depth and material along with a specific purpose. The top layer will be the contact surface having properties that will give it a porous structure to allow seepage, have high strength to weight ratio and high density. The second layer will be a polymer matrix layer, which will be chemical degradation resistant and at the same time be a non-porous composite. The third layer will give strength and impact resistance to the structure and will act as foundation to the design. This presentation provides specific design parameters, material specification, making of the composite and construction of the roads.

**Student(s)**  
 Thampi, Suraj

**Sponsor(s)**  
 Kasi, Balsy

Title and Abstract	Presentation ID	Time	Room
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<b>Solid Waste Management Using Comimpex Balpac PyroConverter</b>	H2	11:15	North Voyageurs
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Humans have advanced from the Stone Age to the Digital Age by harnessing the environment and its resources for developmental purposes. Each of these developments included consumption of natural resources directly or indirectly for sustenance and to make life easier. In this process, we have also added to the environment what is known as byproducts or wastes. The first realization of the accumulation of wastes and their harmful effects led to the development of landfills and waste dumping sites. As the quantity of wastes increased, pollution from these landfills started affecting groundwater and atmospheric air. Further studies were done to develop incinerators, which could burn these wastes, hence reducing them in volume. Incinerators themselves caused a lot of pollution from the emission of gases, such as sulphur dioxide and carbon monoxide. The solid non-biodegradable wastes, along with the harmful gases emitted as a result of the incineration process, led to the development of a newer technology called pyrolysis. Through pyrolysis, all the material that goes into the pyrolyser is burned in the absence of oxygen causing an explosion and a breakdown of the waste into its elemental forms. Made by Comimpex, the pioneers in the field of pyrolytic waste reduction, the BalPac Pyroconverter is one such machine. Through the use of the Pyroconverter, all wastes can be reduced to biodegradable ash. Being a closed loop process there are no harmful gases emitted into the atmosphere as compared to incineration. Using the Pyroconverter helps us achieve about seventy percent more mass reduction than incineration, while at the same time creates electricity from the reduced wastes. In this paper, I shall discuss how the biggest challenge of managing solid wastes can be done most economically and safely using third generation waste management systems, like the BalPac Pyroconverter.

<b>Student(s)</b> Thampi, Suraj	<b>Sponsor(s)</b> Bender, Mitch
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<b>Whirltronics Automation Project</b>	H3	11:30	North Voyageurs
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Whirltronics of Buffalo, Minnesota, is a major manufacturer of lawnmower blades. Some of their major customers include Honda, Toro and Lawn-boy. In order to keep these customers, they must strive to make improvements in every aspect of their business, by reducing costs and simultaneously improving quality, throughput, and profit. Eliminating waste, bottlenecks and the like can do this. Every manufacturing process has a bottleneck, for Whirltronics it is currently the blade straightening process. This station consists of five operators running five machines. In addition to operating the machine there is a significant amount of manual labor. The overall goal proposed by Whirltronics is to reduce production costs at this station by half. Automating this system, thereby reducing the amount of manual labor, will do this.

<b>Student(s)</b> Mammen, Jon Syverson, Kurt	<b>Sponsor(s)</b> Bekkala, Andrew
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<b>Title and Abstract</b>	<b>Presentation ID</b>	<b>Time</b>	<b>Room</b>
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<b>Robotic Thermal Mastic Application Cell</b>	H4	11:45	North Voyageurs
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Thermal mastic is crucial for heat dissipation and energy efficiency for refrigerators. Finding a way to consistently apply the proper amount of mastic in an efficient and precise manner while reducing overall costs was the main objective of this project. Utilizing the repeatability of robotic and other automated equipment did this. Spraying mastic onto the outer fridge shell was a method that worked well as it dramatically reduced cost, cycle time, and quality degradation, while increasing product efficiency. Some project obstacles included finding a way to spray this very viscous material, and defining work piece orientation for the robot. This presentation will tackle questions like; “What does it take to complete a project from start to finish in an industrial setting?” and “How do companies justify major projects such as automated robotic cells?”

<b>Student(s)</b> McKay, Chad Thean Ping, Ang	<b>Sponsor(s)</b> Bekkala, Andrew Wince, Richard
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<b>Student Research in Technology Education</b>	H5	12:00	North Voyageurs
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This presentation will summarize the results of research conducted by three students and a faculty member of the Environmental and Technological Studies Department. The study was a result of attending an undergraduate research symposium centering on technology education. The symposium titled “Growing the Research Base in Technology Education” was designed to help meet the need for long-term, sustainable research in technology education, starting with teachers-in-training at the college level. Goals were to (1) introduce students to research at an early stage in their academic careers, and (2) to give each student a jump-start for post-baccalaureate education as it pertains to the study of technology education and student learning. Symposium participants also included Ball State University, Eastern Michigan University, Illinois State University, and Purdue University. The symposium was held at Illinois State University with funding from the Technical Foundation of America. As part of the symposium, each university will be involved in two action research projects. During the 2002-2003 school year each team of researchers will participate in an overall study that asks practicing teachers for their opinions on the best way to prepare teachers for their roles, recruitment of women into technology education, and gain information on the promotion of technology education programs in k-12 schools. The SCSU group studied technology education learning environments in k-12 programs in central Minnesota (e.g., labs, research support, and equipment) and determine whether there is a correlation between the learning environments and the strength of a program.

<b>Student(s)</b> Brummer, Mark R. Klingensmith, Ryan D. Paulson, Andrew J.	<b>Sponsor(s)</b> Helgeson, Kurt
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<b>Title and Abstract</b>	<b>Presentation ID</b>	<b>Time</b>	<b>Room</b>
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**McDonald's Transition into the Global Market**

I1

11:00

South  
Voyagers

This paper explores the mechanisms that enable the American giant McDonald's to infiltrate and thrive in the global market. By studiously adapting its menu to conform to religious and cultural practices in 120 countries, the fast food chain has been remarkably successful. With restaurants designed to accommodate Kashrut laws, Vedic scripture, Jainism, Orthodox fasts, Muslim cleanliness laws and Buddhist beliefs; Mc Donald's boasts a remarkably flexible menu including the Maharaja mac, McSpaghetti, McHuevo, McRye, McKrocket, Kiwiburger, Tukbul Burger, Bulgogi Burgers, McNífica and Kofteburger. It is small wonder, then, that McDonlad's has served as the official restaurant of the Olympic Games.

**Student(s)**

Schuck, Holly

**Sponsor(s)**

Splittgerber, Lisa

**Longevity and Lifestyle: Selected Centenarian Perspectives**

I2

11:15

South  
Voyagers

Many researchers are now studying what relationship exists between longevity and lifestyle, because never before have so many people lived 100 years and longer. With the increasing potential for people to live longer, the purpose of this study was to further examine some of those 70 percent of characteristics found in centenarians that could be modified. This instrumental study investigated what was the relationship between longevity and lifestyle and specifically how the most commonly found lifestyle factors of attitude, diet, exercise, stress management, preventative strategies and faith practices could contribute to healthy aging. The research involved the data collection methods of participant observation and interviewing. The qualitative analysis sought patterns of expected as well as unanticipated relationships in an effort to obtain all relevant informational pieces. Because of the sociology of centenarians, an interview guide served as the primary model to collect data. The data was reduced to a manageable format, through a clustered matrix. The selection of qualified centenarians for this study involved finding centenarians who were cognitive, communicative and mentally alert. Much of the findings could offer no more than anecdotal evidence to the characteristics of the 70 percent of the lifestyle factors that affect healthy aging. In conclusion, the lifestyle factors of exercise and faith practice had the most conclusive evidence of longevity. The attitude and stress management results only offered anecdotal evidence of a relationship between longevity and lifestyle. The lifestyle factors that were found to have no discernible impact upon longevity were preventative strategies and diet. No matter how inconclusive many of the collective results were, centenarians had common personalities, lifestyle habits and characteristics that have served as a pillar of strength throughout their lives.

**Student(s)**

Johnson, Linda

**Sponsor(s)**

Hill, Fred

<b>Title and Abstract</b>	<b>Presentation ID</b>	<b>Time</b>	<b>Room</b>
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<b>Bubble Gum through the Ages</b>	I3	11:45	South Voyageurs
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The practice of chewing gum has been around for centuries and spans the globe. Groups as diverse as the Ancient Greeks, Mayans, and Native Americans knew the pleasures of the practice. This paper explores the major changes gum has undergone and the various guises in which it has appeared. Studies of gum's use by millions of people and their current practices have given rise to some interesting theories, which also fall within the scope of this paper.

<b>Student(s)</b> Kustritz, Katie	<b>Sponsor(s)</b> Splittgerber, Lisa
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<b>Process Improvement: Assembly of Freezer Hinges</b>	I4	12:00	South Voyageurs
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Electrolux, a large freezer manufacturer based in St. Cloud, is focused on improving manufacturing efficiency. The objective of this project is to improve the freezer hinge assembly operations. Currently the process suffers from low productivity and high Work-In-Process (WIP). The project uses lean manufacturing philosophy and uses such tools as plant layout design, jigs and fixtures design, and assembly line balancing to optimize the freezer hinge assembly operations.

<b>Student(s)</b> Padnos, Eric Shamla, Paul	<b>Sponsor(s)</b> Baliga, Bantwal
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<b>Criminal Justice Curriculum: What Do Students Think?</b>	K1	2:00	Ballroom B
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The object of the study has been to examine the nature of the criminal justice curriculum offered at different universities in the United States by focusing on how they meet the needs and aspiration of students and prepares them for careers in the criminal justice system. The study provides an opportunity for educators to examine and improve their curriculum to best meet the needs of students.

<b>Student(s)</b> Chichosz, Jeff Fritza, Sarah Lawrence, Tanash Myamba, Flora	<b>Sponsor(s)</b> Andzenge, Dick
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Title and Abstract	Presentation ID	Time	Room
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**Contemporary Counseling Approaches**

L1

2:00

Ballroom C

This panel will present information on four current counseling approaches. The presentations will include key concepts, applications, strengths and weakness of the approach. Specifically, organizational development, adventure therapy, eating disorder therapy and desensitization will be explored.

**Student(s)**

Dolence, Nicole  
 Morris, Necole  
 Pitts, Josie  
 Rosenberg, Carrie

**Sponsor(s)**

Jorgensen, Leeann

**The Correlation between the Use of “There’re” and the Social Variables of Age, Education, and Gender**

M1

2:00

North Glacier

In standard English, the subject of a sentence determines whether the verb that follows is in singular or plural. However, when the non-referential “there” is used as the subject it is the noun-phrase (NP) following the verb which determines whether the verb is singular or plural. However, some speakers of English don’t regularly observe this rule of prescriptive grammar. The rule seems to be more frequently ignored when the non-referential “there” is contracted with a form of the verb “be” as in “there’s” and “there’re”. Speakers of English have a tendency to use “there’s” in place of “there’re”. Some possible reasons for this include ease of pronunciation and lack of familiarity with the prescriptive rule. For this study, we were interested in learning whether a correlation exists between the prescriptively correct use of “there” and certain social variables. Questionnaires were used to gather data from 32 respondents of 19 females and 15 males with ages ranging from 17 to 93. Nine respondents were high school graduates, eleven were undergraduates, and the rest were graduate students. Results showed that most respondents had the tendency to use “there’s” in place of “there’re”. And more specifically:

1. Younger respondents show a preference for using the grammatically correct form of “there’re”.
2. Females outperformed males in the use of the prescriptive “there’re”.
3. Younger females use “there’re” more frequently than younger males.

This study also supports the theory that women are more conservative in their use of language. Perhaps, more significantly, the results support the notion that education, particularly higher education, provides greater access and exposure to the standard language, in this case, standard English.

**Student(s)**

Darwanto, Agus  
 Davis, Harry

**Sponsor(s)**

Koffi, Ettien

Title and Abstract	Presentation ID	Time	Room
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**Examining Textual Gaps**

M2

2:15

North Glacier

Something is inevitably missing in every essay or story you read; there is a gap--or in some cases, many gaps--where information, examples, or details have been excluded. Often, these gaps are used to create clarity (by simplifying a text), emphasis (by focusing on one detail, rather than another), and even style (by manipulating the tone and delivery). But, textual gaps also have a more dramatic purpose. Texts are shaped as much by what is included in them as by what is not included. The omission of information shifts the text from written to implied, allowing readers to fill the gaps in their minds—a process known as closure in art—to create a more personalized, engaging, and believable text. This presentation will break textual gaps into five main categories (syntax, necessary, ambiguous, dramatic, and cropped gaps). It will highlight the characteristics of each, offer published examples, and discuss the possible effects on readers. Participants will be able to better identify textual gaps, as well as discuss how gaps can shape our perceptions as readers and our decisions as writers. The presentation will also include a handout with brief examples and noteworthy quotes for future reference.

**Student(s)**  
Towner, Emil

**Sponsor(s)**  
Gorrell, Donna

**Women in Weather**

M3

2:30

North Glacier

Everyday, people take time out of their busy schedule to look at the local forecast, but only a few take the extra time to think about who made this daily ritual possible. In the United States, women have been part of the meteorological community for the better half of the past century; however, their presence and accomplishments have been scarcely documented. Who are these women in weather and what accomplishments did they make? In this paper, I addressed who the important women in meteorology have been over the past century, why they are important in the field of meteorology, the significant events that have helped women gain a place in the world of weather, and the difficulties I faced finding information about women in meteorology.

**Student(s)**  
Johnson, Laura

**Sponsor(s)**  
Subrahmanyam, Lalita

Title and Abstract	Presentation ID	Time	Room
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**Expectations and Complaints in Gender Differences**

M4

2:45

North Glacier

The purpose of this study was to examine the role of biology, interpersonal differences and culture influences on patterns of communication between males and females, which had been discussed among communication researchers. In this study, I used questionnaires with eight questions about the communication expectations and complaints in romantic relationships between males and females. Participants were both American and Japanese students of St. Cloud State University. As the result of analyzing participants' answers, it was found out that gender differences in communication expectations and complaints were influenced by all three (biological, individual aspects, and cultural background). However, biology was the most influential on gender differences. In fact, there were many common expectations and complaints between American males and Japanese males as well as between American females and Japanese females even though they had different cultural background.

**Student(s)**  
Yoshida, Chie

**Sponsor(s)**  
Rehling, Diana

**The Right to Privacy, Vibrators, and Obscenity Jurisprudence in the United States**

M5

3:00

North Glacier

The constitutionally based Right to Privacy is one that has been fought through the courts from issues as diverse and far reaching as access to contraception to the right of two consenting adults to engage in homosexual activity in the privacy of their own residence. While it may be argued that the courts have yet to grant the full scope of the Right to Privacy in all cases, the fact remains that through the cases brought before the United States Supreme Court, the American citizens' rights to engage in activities that define their most personal and intimate parts of their lives have been affirmed and upheld through many topics and cases...Some, like the right to free access to contraception, are accepted as inalienable to the modern generations, but others, like abortion, will remain flash points in American politics for years to come. One of the rights, which many feminists consider critical to the overall success of the Women's Movement, is the free expression of sexuality, specifically women's sexuality. Though many of the limitations applied to women's sexuality come from stifling social norms, some have arisen from statutes and court decisions. While it may be that women enjoy more freedom and legal equity now than they ever have before, many of the laws enacted to 'protect' them have, in reality, hindered women's freedom of sexual expression....laws dealing with...access to sex toys are unduly burdensome to the free expression of women's sexuality. This comment will explore the laws that have been created, and subsequently been embroiled in controversy, surrounding the issue of the sale and possession of sexual devices used primarily for the stimulation of human genital organs: namely vibrators and dildos.

**Student(s)**  
Dwyer, Cecelia

**Sponsor(s)**  
Samuel, Patricia

Title and Abstract	Presentation ID	Time	Room
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<b>Idealization and Degradation of Women in the Print Media</b>	M6	3:15	North Glacier
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Historically, women’s sexuality has been a commodity, protected, tended, and then sold to the highest bidder. Women who are not virgins are labeled whores, if there is no known marriage contract; women who have not yet had sex or who do not like sex are prudes or frigid. Women’s sexuality has been a subject of misunderstanding and unmentionables for hundreds of years. Until 1952, most women suffered a mysterious disease known as hysteria, which the only cure was massage, by a doctor, to create a hysterical paroxysm. Basically, the doctor rubbed the woman’s clitoris until she reached orgasm. So little was known of women’s sexuality and sex organs, that this treatment was proliferant for several hundred years, and led directly to the creation of the vibrator. Eighty percent of women are not able to reach orgasm through vaginal intercourse alone, yet the cultural norm insists we are just not trying hard enough. In this hostile climate of women’s sexuality is it any wonder that many of the most harmful images of women’s sexuality are bought and sold in publications created for women? Magazines, namely the women’s magazines, like Cosmopolitan, Glamour, Family Circle, Good Housekeeping, and others, are replete with images and descriptions of what a “real woman” should be, do, look like, and feel. Women’s sexuality has been stripped of its glorious diversity and airbrushed to be the two-dimensional, male-centered, pop-culture creation that it is said to be in American culture today. This paper will discuss the images of women’s bodies, self-images, and sexuality found in magazines, both women’s magazines, and those catering to men, and the detrimental effects these images have on women and their sex lives and self worth.

<b>Student(s)</b> Dwyer, Cecelia	<b>Sponsor(s)</b> Flynn, Karen
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<b>Forecasting Enrollment for SCSU</b>	N1	2:00	South Glacier
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The purpose of this project is to forecast the tenth day enrollment for spring and fall of 2003 at St. Cloud State University. A SAS program is used to implement a Bayesian method that uses discrete prior distributions for the number of new entering freshmen, transfers, and others as well as their respective yield rates. A prior distribution is also used for the percent of previous semester students who return. The SAS program has been converted from a similar Visual Basic program written by David Robinson. The program utilizes weekly admission figures for new entering freshmen and transfers. Daily readings for the number of students preregistered are compared with last year’s daily preregistration data. The program outputs the enrollment forecast, in the form of the mean and 95% confidence limits for the posterior distribution of the number of students to be enrolled by the tenth day of the following semester.

<b>Student(s)</b> Schneider, Daniel	<b>Sponsor(s)</b> Robinson, David
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Title and Abstract	Presentation ID	Time	Room
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<b>A Return to Normalcy Through Sport</b>	N2	2:20	South Glacier
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Sport is a large part of American culture. Television as especially benefited, with major sporting events consistently drawing the largest television audiences. Shot choices and commentary, among other things, play an ideological role in constructing a ‘common sense’ for the viewer. After September 11th, the return of sports to television signaled an attempt to return to a normal life. For my research, I conducted a textual analysis of major sporting events televised from September 11th up to the one year anniversary. I found that the nature of the content did more than just memorialize the victims. The words and images helped the audience make sense of the attacks in specific ways. The images attempted to unify the audience and distracted the viewer from questioning the actions of September 11th. The benefit of my study is to encourage critical thought about the construction of ‘common sense’ surrounding the events of 9/11/01 as represented in televised sport.

<b>Student(s)</b> Curtis, Nicholas	<b>Sponsor(s)</b> Johnson, Katherine
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<b>Creating and Maintaining Public Goods</b>	N3	2:40	South Glacier
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Contributions to a public good may take many forms. A person can contribute time, effort, or money in order to create a public good, while another person could contribute by avoiding such actions that lead to the degradation or destruction of an existing public good, (i.e. polluting). The first instance constitutes positive actions, while the second constitutes positive inaction. Economic Reasoning would suggest that if you were inclined to do one you would be inclined to do the other, with as much effort. However, research does not support this suggestion. Researchers such as Andreoni (1995), Sonnemans, Schram, and Offerman (1998), Grossman and Shanley (2001) have shown that the framing of the experiments affects the results in voluntary contribution mechanism games (VCM). The researchers discovered that subjects are more willing to take action (positively-framed VCM), at some cost to themselves, to create benefits for the group, than they are to be inactive (negatively-framed VCM), at some cost to themselves, to create benefits for the group. The significant drawback to these studies is that the positively-framed and negatively framed VCM’s are independent experiments; subjects participated in either one treatment or the other, but not both. For this reason, we’ve tested the hypothesis that subjects will be more inclined to act in ways that maintain an existing public good if the public good were of their own creation than if they had no hand in the public good’s creation.

<b>Student(s)</b> Crumpler, Heidi	<b>Sponsor(s)</b> Grossman, Phillip
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Title and Abstract	Presentation ID	Time	Room
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**Relational Maintenance Behaviors of Siblings in Geographical Locations**

N4

3:00

South Glacier

This study examined the use of Relational Maintenance Behaviors (positivity, openness, assurances, networks, and sharing tasks) in the sibling relationship, with a specific focus on the siblings' geographical location. Participants were 25 individuals who reported on their relationship with a sibling. Results indicate that (a) siblings living less than 1 hour distance report assurances relational maintenance behavior used more frequently than positivity, (b) siblings living between 1-3 hours distance report network relational maintenance behavior used more frequently than positivity, and (c) siblings living more than 5 hours report positivity relational maintenance behavior used more frequently than openness.

**Student(s)**  
Normand, Michelle

**Sponsor(s)**  
Rehling, Diana

**Teaching and Learning Multicultural Competencies: Finding the Key Within (originally published in the Journal of Critical Inquiry Into Curriculum and Instruction 4(3), Fall 2002)**

O1

2:00

Lady's Slipper

The instructor and four graduate students in a multicultural counseling class will describe the course work and how it impacted the students' journey toward becoming culturally competent counselors and effective social change agents. Course work helped students to explore their cultural identities, to learn about the world-views of others and to actively engage with culturally different populations. Excerpts from student identity papers and service learning projects and the students' application and interpretation of course activities will be presented. Students will share how they learned that the key to multiculturalism and the power to change themselves and others is found inside each one of them.

**Student(s)**  
Aysta, Alaine  
Furzland, Michelle  
Molitor, Maggie  
Turk, Beth

**Sponsor(s)**  
Merchant, Niloufer



Title and Abstract	Presentation ID	Time	Room
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<b>The Holocaust: Yesterday, Today, and Tomorrow</b>	P1	2:00	Mississippi
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The purpose of this paper was to analyze and summarize historical data regarding the plight of Jews during the World War II Holocaust, with the goal of helping contemporary audiences understand numbers and images and what they represented in individual human terms. Interviews with leading Holocaust scholars and document analysis of a variety of online and print sources, photographs, and other media resources were the methods used to ascertain and confirm Holocaust statistics. Death camp murder statistics were summarized to make them more digestible, meaningful and powerful on a personal level. The various methods of murder and exploitation of Polish Jews during the Holocaust were also investigated. The data collected will be used in a student-produced video documentary about the Holocaust in Poland. The aim of this video production is to make the experience of the Holocaust something that everyone can learn from and understand. In particular, the video will focus on intolerance, racism, bigotry, anti-Semitism and discrimination of all forms as processes of dehumanization of people who are portrayed as the “other” and as fundamentally different from other members of the human family.

<b>Student(s)</b> Wolf, Melissa	<b>Sponsor(s)</b> Martin, Gregory
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<b>The Wilford Homestead Site: An Inventory and Interpretation of Collected Artifacts</b>	P2	2:15	Mississippi
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“The Wilford Site: An Inventory and Analysis of Collected Artifacts” is a student lead research project completed in Spring 2001. Analysis of the artifacts allowed a partial reconstruction of the lifeways of homesteaders at this site in Mille Lacs Kathio State Park, Minnesota. Artifacts (i.e. the homesteader's trash) were examined and interpreted, and historical sources, such as regional newspapers, were used to fill gaps in the archaeological record. The importance of this project is that it examines the seemingly mundane in a scholarly fashion: this 1930's site is too young to be considered any “real” historical or archaeological value, yet many that lived during this time period were children who do not clearly remember their parent’s subsistence patterns. This knowledge is in danger of being lost, and homesteader's lives were often markedly different than commonly held assumptions. Additionally, this project accurately dates the years of Wilford Site occupation, illustrates the homesteaders' subsistence patterns, hypothesizes what genders might have been present, and infers a length of occupation.

<b>Student(s)</b> Meissner, Nathan	<b>Sponsor(s)</b> Rothaus, Richard
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<b>Inside Look at Education in South Africa</b>	P3	2:30	Mississippi
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Take a journey through a vividly colored photographic series of South Africa. Even though apartheid was abolished, it is so interwoven in the social construct that people are still living with it today. Experience the conditions and effects that apartheid continues to have on the children in the education system.

<b>Student(s)</b> Beniek, Stefanie	<b>Sponsor(s)</b> Johnson, Robert
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Title and Abstract	Presentation ID	Time	Room
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<b>William Carlos Williams: Pictures from Brueghel and the Invocation</b>	P4	2:45	Mississippi
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There were two special goals American poet William Carlos Williams had when invoking other artists in his writing. His first was to seek out past artists with similar philosophies to his in order to justify his artistic practices. His second was to create for himself a sense of artistic companionship, even mentorship. As Williams came into his last decade, he was still largely unknown to the public, and his traditional goals for invoking artistic allies combined with a fear that he would leave no artistic legacy. One of his latest poems, "Pictures from Brueghel," is a product of this tension. The art of 16th century Flemish painter Peiter Brueghel reflects many of the key underpinnings of Williams's poetry. "Pictures from Breughel" celebrates Brueghel's paintings and in doing so functions as a significant final statement of Williams's theories. The research presented here will elaborate on the above information and explain the early 20th century artistic issues at the heart of Williams's need to invoke artistic allies. Finally, it will demonstrate specific commonalties between the poetics of "Pictures from Breughel" and Breughel's actual paintings.

<b>Student(s)</b> Quijano, Jonathan	<b>Sponsor(s)</b> Dorn, Judith
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<b>Honor the Aged and the Wise: The Importance of Zun Jing in Chinese Culture</b>	P5	3:00	Mississippi
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Whenever a person goes to a foreign country, he or she must overcome many barriers, notably language as well as cultural barriers. Understanding the foreign culture ahead of time can lessen the shock of entering the foreign country and reduce misunderstanding. Chinese culture differs from American culture in several important aspects. A central concept in Chinese culture is Zun Jing, simply translated as "to respect" or "to honor." Literally, Zun means "senior generation," or "to respect, to honor" while Jing means "to bow" or "to hold in reverence." Confucian philosophy emphasizes Zun Jing toward elders, parents, and teachers. In all these areas, Chinese students may find themselves at odds with their American counterparts, as well as with American instructors, who stress equality, freedom, individuality, and creativity in the classroom, best expressed by Jefferson in his frame phase "All men are created equal". On the other hand, for Chinese instructors, hierarchy to rules, loyalty to the group, and gaining of factual knowledge hold sway. American teachers, many of whom are unaccustomed to cultural differences, can have an especially difficult time, when they have Chinese students or particularly if they are teaching in Taiwan and China. Therefore, an understanding of the concept of Zun Jing or "respect" is crucial for American teachers who are interested in understanding Chinese culture.

<b>Student(s)</b> Chien, Shu-Fen Larson, Brett	<b>Sponsor(s)</b> Robinson, James
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Title and Abstract	Presentation ID	Time	Room
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<b>Latino/Hispanic Identity</b>	Q1	2:00	St. Croix
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What are the defining elements of Latin American identity? What characteristic feature, if any, distinguishes Latin Americans from other peoples of the world? We shall ask these questions, which have often preoccupied Latin Americans, and examine how thinkers of various periods and traditions have attempted to answer them.

**Student(s)**

Atkinson, Travis  
 Buchman, Heather  
 Dordal, William  
 Eggebrech, Jennifer  
 Frie, Lisa  
 Fry, Lindsay  
 Georgoff, Paul  
 Hedlund, Stefanie  
 Hiebert, Jesse  
 Hoch, Carly  
 Horvat, Susan  
 Kallstrom, Amy  
 Otterson, Kristin  
 Ramsay, Catherine  
 Smith, Tiffany  
 Vue, Kou  
 Wicker, Jennifer  
 Xiong, Ka Zoua

**Sponsor(s)**

Nuccetelli, Susana

Title and Abstract	Presentation ID	Time	Room
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**An Exploration of the Relationship Between Personality and Values**

Q2

3:00

St. Croix

Researchers have long been interested in the relationships between personality and values. Personality refers to consistent patterns of thoughts, behaviors, and feelings that distinguish people from each other. Values are considered “cognitive representations of desirable abstract goals” (Roccas, Sagiv, Schwartz, Knafo, 2002, p. 789). One recent investigation of the relationship between personality and values is presented by Roccas et. al. (2002). In their study, students at an Israeli university completed measures of personality and values. The purpose of the current study is to examine whether the patterns found in Israel replicate in a sample of Midwestern college students. A sample of 235 undergraduates completed measures of personality and values. Specifically, participants completed a personality inventory that yielded measures of Neuroticism, Extraversion, Openness, Agreeableness, and Conscientiousness. In addition, participants completed a value inventory, which yielded scores for 10 different values. Analyses indicate that personality was meaningfully related to the self-reported values of the participants. Examples of these relationships include the following: Extraversion was positively related to Security, Stimulation, Self-directed, Hedonism, Power, Achievement, and Benevolence; Agreeableness was positively related to Tradition, Conformity, Achievement, Universalism, Benevolence; Openness was negatively related to Tradition, Conformity, Power and was positively related to Stimulation, Self-directed and Universalism. Interestingly, Conscientiousness and Neuroticism were unrelated to the 10 values. On the whole, we replicated many of the relationships that were documented by Roccas et. al. (2002). Of the 22 significant relationships between the personality traits and values in our data, 16 replicate the findings of Roccas et al. (2002). In both data sets, Neuroticism was not associated with any of the 10 values. This suggests that relationships between personality and values have some cross-cultural generalizability, at least in terms of making comparisons between Israeli and American undergraduates.

**Student(s)**

Matros, Nicole  
Streefland, Lisa

**Sponsor(s)**

Kling, Kristen

<b>Title and Abstract</b>	<b>Presentation ID</b>	<b>Time</b>	<b>Room</b>
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**Religious Syncretism in the Americas -  
Sincretismo religioso en las Américas**

R1

2:00

North  
Voyagers

Indigenous beliefs of Latin America have intermixed with traditional Catholicism brought from Spain and Portugal to create a faith unique to the southern 2/3 of the Western Hemisphere. Because this fusion has been both church-sanctioned and underground in its development, this syncretism is not monolithic. Some facets of this expression are a standard, "Roman" Catholicism with a few native trappings such as saints dressed in native costume. Other manifestations, however, are traditional, native beliefs with borrowings from Catholic ideas and practices that, while under the big tent of the Catholic Church, are foreign to worldwide Catholic expression.

Las creencias indígenas de la América Latina se han mezclado con el catolicismo tradicional español/portugués para crear una fe única a la mayoría del hemisferio occidental. Como dicha fusión viene apoyada en parte por la iglesia católica y en parte por un movimiento popular clandestino, el sincretismo resultante no es monolítico. Algunas facetas incluyen una expresión católica tradicional mezclada con unos rasgos nativos, como el ejemplo de santos vestidos de ropa indígena. Otras manifestaciones, sin embargo, representan creencias nativas tradicionales mezcladas con ideas y prácticas prestadas del catolicismo que, mientras sigan siendo "católicos" en nombre, son esencialmente ajenas a las creencias de la iglesia católica mundial.

**Student(s)**

Fiskness, Carl

**Sponsor(s)**

Spittgerber, Lisa

**The many colors of German life - Die vielen  
Farben des deutschen Lebens**

R2

2:20

North  
Voyagers

This paper deals with issues of minorities in Germany by exploring the experiences of Jewish, Turkish and African people who immigrated there after 1945.

Mit den Jahren sind viele Leute, die nicht deutscher Abstammung sind, nach Deutschland gegangen. Hier haben viele versucht, ein neues Leben anzufangen. Was viele erfahren haben, konnte nicht vorhergesehen werden. Mit diesem Aufsatz will ich die Erfahrungen von Minderheiten in Deutschland zeigen. Meine Absicht ist es, das Leben einer jüdischen, einer türkischen und einer afrikanischen Person aus Deutschland zu erklären, so dass man mehr Einfühlungsvermögen entwickelt. Wenn wir vielleicht die Erfahrung und das Leben eines anderen Menschen verstehen, dann schaffen wir es auch, in Frieden zusammen zu leben.

**Student(s)**

Bosak, Holly

**Sponsor(s)**

Mueller, Isolde

**German Culture II**

R3

2:40

North  
Voyagers

Abstract not available at this time.

**Student(s)**

Carlson, Josh

**Sponsor(s)**

Mueller, Isolde

Title and Abstract	Presentation ID	Time	Room
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**Reading Achievement of American Indian and White Students Using Accelerated Reader: Correlations with Gender, Word Count, Classroom Practice, and Library Circulation**

S1

2:00

South  
Voyageurs

The purpose of this study was to examine Accelerated Reader records, library circulation records, and reading test scores of 43 students who completed five consecutive years (grades 1-5) at Lincoln Elementary School, and to identify correlations between reading achievement test scores and gender, race, word count, classroom teacher methods, and library circulation. The Standardized Test for Assessment of Reading, a computer-adaptive, norm-referenced and criterion-referenced test, was used to determine reading levels. The Winnebago Spectrum library program was used to obtain library circulation records. Scaled scores, grade equivalent reading levels, and the normal curve equivalent were used to make comparisons. After five years of using Accelerated Reader, both boys and girls were reading above grade level. Boys were reading at an average GE of 6.8 and girls at 7.0. White students finished fifth grade with an average GE of 7.1 and American Indian students averaged 5.8, right at grade level. Students who had the highest word count, or number of words per book read, had higher reading levels. Classroom practice comparisons showed that the highest NCE gains were in the classrooms that devoted the greatest amount of time to reading practice. Library circulation records showed that boys checked out an average of 97 materials per year and girls checked out an average of 117 materials per year. American Indian students checked out more materials per year (116), than White students (103). Some implications of the findings are that when Accelerated Reader is used consistently throughout all grades in elementary school, with 30-60 minutes per day for in-school reading practice, both American Indian and White students will show reading achievement at, or above, grade level.

**Student(s)**  
Siegert, Joyce

**Sponsor(s)**  
Rodgers, Judith

Title and Abstract	Presentation ID	Time	Room
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<b>Integrated Learning Systems, By Any Other Name: Their Impact On Education</b>	S2	2:15	South Voyageurs
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Computer technology has evolved in every aspect imaginable in a short amount of time compared to other inventions. The computer and its accompanying software applications have emerged as working tools to provide assistance in both business and educational environments. While using a computer to instruct has long been referred to as computer-assisted instruction, (CAI) the terminology is changing as well as the level of computer involvement. As the role of computer technology in the learning environment has increased from a fixed and sequential program to an individualized tutor responsive to the unique needs of each learner, the terms have evolved as well. In many situations, CAI has given way to ILS, the integrated learning system. This new terminology reflects a shift as to the role of computer technology in the learning environment, from a competing tutor to a tool under control of the teacher. Integrated learning systems can be a powerful tool when used as an enhancement to teacher-led instruction and existing curriculum. Research has shown a direct correlation between the use of computer programs and an increase in student achievement (Kulik, 1994). The effort to convince educators and decision makers that computer technology, specifically integrated learning systems which could enhance individual and group-paced learning, may seem insurmountable but in my opinion worth the time and money. Computer technology should provide an enhancement to existing curriculum and another resource for learning in an educational environment. A lack of understanding, as it relates to computer technology and student achievement, might inhibit decisions that would promote the use of technology in education. Research specific to this area needs to be communicated and presented so that responsible decisions can be made.

<b>Student(s)</b> Bruestle, Beth	<b>Sponsor(s)</b> Rodgers, Judith
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<b>Lean Manufacturing</b>	S3	2:30	South Voyageurs
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How long did it take you to find your car keys this morning? Does it take you longer to find the right tool than it does to complete the project? Or do you just use a crescent wrench and duct tape? Do you have to park in the driveway because your garage is full of “stuff”? Henry Ford developed a solution to these and similar manufacturing problems over 70 years ago. Taiichi Ohno then took the initiative 50 years ago by developing the Toyota Production System. Although the name may change, Lean Manufacturing has remained the way to do more with less. So, get organized by learning about Lean Manufacturing and how world-class manufacturers use the 5S’s to create a clean, orderly, safe, and productive environment.

<b>Student(s)</b> Motl, Allen Werner, Joseph	<b>Sponsor(s)</b> Yu, Warren
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Title and Abstract	Presentation ID	Time	Room
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**Increasing Tolerance to Toothbrushing in a Child with Autism**

S4

2:45

South  
Voyageurs

The effects of tolerance training on toothbrushing were examined for a child with autism. Tolerance to toothbrushing was identified as the target behavior using a modified functional assessment, including direct observation and in vivo probes. Due to the aversiveness of toothbrushing, tolerance was determined to be a prerequisite skill of independent toothbrushing. The child displayed protestful behaviors during his current toothbrushing process and was unable to perform independent toothbrushing skills. Discrete trial training was used to teach tolerance to toothbrushing. Trial by trial data were collected during each session. A X2 ratio of performance improvement was utilized as a criterion measure of improvement. Results indicate an increase in tolerance to toothbrushing, including spontaneous independent use of pre-toothbrushing skills.

**Student(s)**

Furzland, Matthew

**Sponsor(s)**

Schulze, Kimberly

**Utilization of Nursing Research by Senior Nursing Students**

S5

3:00

South  
Voyageurs

Utilization of research in nursing clinical care has been shown to decrease pain without the use of narcotics, to decrease anxiety, to improve the quality of life, and to promote a trusting relationship between the nurse and the patient. Each week, nursing students are required to search the literature for pertinent nursing research that can be directly applied to patients in the clinical setting. Students then critique the nursing research and apply the research to the patients that they are caring for that week. Research also promotes more knowledgeable and well-rounded care provided by nursing students. Utilizing research-based information in the clinical setting provides the students with increased confidence in performing skills and fulfilling responsibilities both in their scholarly and in their future professional role. Research-based information that has been implemented into patient care include some of the following - spirituality, massage therapy, music therapy, teaching, healthier lifestyles, and psychosocial concerns. With increased knowledge applied to their illness, treatments, procedure, lifestyle changes, or coping abilities, the patient is better able to adapt to their diagnosis.

**Student(s)**

Annett, Angelene  
Nett, Sarah

**Sponsor(s)**

Simones, Joyce



Title and Abstract	Presentation ID	Time	Room
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<b>PC Based Ram Tester</b>	T1	3:00	Ballroom
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Memory is a very common product in today’s electronics world. Not only do we have memory in our computers, we also have it in cell phones, calculators, digital cameras, disc drives and even our cars. The purpose of our project is to design and build a simple Dynamic Random Access Memory (DRAM) tester for Micron Technology. Micron is the world's leading manufacturer of high quality memory products. The DRAM tester has been designed to be an easy to use device that can be incorporated into a workstation, thus eliminating the need for an expensive centralized unit. The research presented in this work illustrates the development, design and use of this tester.

**Student(s)**  
 Moores, Donald  
 Shaft, Kathy  
 Super, Mark

**Sponsor(s)**  
 George, Peter

<b>An Examination of Gender Effects in the Evaluation of Student Applicants</b>	T2	3:00	Ballroom
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Throughout their academic and professional careers, individuals are evaluated in many different ways in many different circumstances. Because such evaluations can have important implications, it is imperative that we understand whether such evaluations are contaminated by bias. In particular, we were interested in the ways that gender can influence such evaluations. We studied the evaluation process by providing 113 student raters (47 male, 66 female) with 111 fictional profiles of potential applicants for admission to a four-year university. They were provided with the applicant’s name (indicating the gender of the target applicant), their hometown, High School GPA and rank, extracurricular activities, and ACT score. Each of the 113 raters worked for 20 minutes, rating each student profile on the following dimensions: whether the applicants should be admitted, what their projected GPA would be the first semester, whether they would graduate in four years, and what kinds of financial aid should be offered. Analysis of the 4,068 ratings indicated that the gender of the target applicant being evaluated did not influence the ratings. The gender of the participant, however, did significantly influence the evaluations. Specifically, female participant evaluated the identical profiles more positively than the male participants. This finding, that females rate others more positively than males, is consistent with previous literature documenting that females rate people more positively in face-to-face interpersonal situations.

**Student(s)**  
 St. Clair, Michelle

**Sponsor(s)**  
 Kling, Kristen

<b>Title and Abstract</b>	<b>Presentation ID</b>	<b>Time</b>	<b>Room</b>
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<b>Electrical Resistance Used to Detect Rat's Estrus Cycle</b>	T3	3:00	Ballroom
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It's been known that the ovarian cycle of most mammals can be categorized in various stages using vaginal smears. Recently, an inexpensive meter was developed to measure the electrical resistance of the rat vaginal wall to detect the estrus cycle. This is done by inserting the probe to the rat's vagina and making sure that the probe is fully in contact with the wall of the vagina. In this experiment we see the correlation between the smear results and the electrical resistance.

<b>Student(s)</b> Chandramala, Selvarajah	<b>Sponsor(s)</b> Tubbiola, Maureen
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<b>Addiction Problems among Native Americans</b>	T4	3:00	Ballroom
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This presentation has to do with the relationship of Ntive Americans and chemical addictions. The presentation will examine some of the causes of abuse among Native Americans and possible ways to reduce the numbers of chemically dependent. I will also look at statistics for causes and numbers of afflicted. I will look at genetics and environment as possible aspects that may contribute to addiction. Another area that I want to look at is the effect that the displacement of American Indians by Europeans has had on the substance abuse habits of some tribes. In conclusion I want to look at treatment options for this ethnic group.

<b>Student(s)</b> Franseen, Chris	<b>Sponsor(s)</b> Vesely, Barbara
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<b>Activism in Japan</b>	T5	3:00	Ballroom
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The posters will answer some intriguing questions, such as “Did the uprising of anti-globalization reach Japanese society?” “What are the ways to involve Japanese people in the social justice movement?” and “Are the Japanese becoming more assertive?” It will include publications, publishers, groups, and individuals in Japan that work for social justice. Fast economic growth since the 1950’s overwhelmed the people’s lives in many ways; yet, anti-war, human rights, feminist, environmental, labor, and indigenous (Ainu) movements have supported oppressed people and the environment in Japanese society. Peace and nuclear disarmament movements hold a lot of weight with Japanese people since most of us desperately hope we do not repeat the horrible experience of aggressive nationalism, war, and nuclear genocide. Currently, movements in animal rights and multicultural education are developing. In the past, little attention was paid to Japanese activism. However, new information technology is making it possible to develop links to worldwide movements and organizations. Japanese activism would affect world policies more than ever if these movements grow successfully. The Japanese Activism event involves an assortment of posters that focus on past and current situations regarding activism in Japan.

<b>Student(s)</b> Mochizuki, Ayako	<b>Sponsor(s)</b> Andrzejewski, Julie
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Title and Abstract	Presentation ID	Time	Room
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**An Investigation into the Occurrence of Ice Jams on The Kankakee River in Northern Illinois**

T6

3:00

Ballroom

This research project was an investigation into the occurrence, severity, and likelihood of ice jams on the Kankakee River near Wilmington, Illinois. The main objective was to develop threshold indicators to act as a tool in forecasting devastating floods caused by ice build up. It was discovered that certain values of the accumulated freezing degree days, flow statistics, and rate of rise of the river are promising ice jam predictors, along with the mean flow being a reasonable predictor of flood stage. Ice jam flooding is a serious problem causing over \$100 million in damages annually in the United States. A river ice jam is a stationary accumulation of ice, which restricts the normal flow of water in a river. Ice jams may form during winter freeze up or mid-winter spring thaws and often cause rapid rises in water levels and significant flooding. Unfortunately, many National Weather Service (NWS) River Forecast Centers (RFC) can only react to ice jams in their service areas each winter, because the NWS has no procedures in place for forecasting ice jam occurrence. This research will greatly impact the effected NWS and RFC offices, along with the emergency management and disaster relief teams in the nearby communities. Not only will these findings allow the NWS to better monitor the areas that are at high risk for ice jams, these offices will be able to offer advanced lead time for flood watches and warnings, allow additional opportunities for physical controlled break up of ice, and ultimately reduce flood damages by increasing the preparedness for the community.

**Student(s)**

Brandt, Amanda

**Sponsor(s)**

Nelson, Charles

**An Enantioselective Approach Toward the Synthesis of Poison Frog Skin Alkaloid 275A'**

T7

3:00

Ballroom

Poison frog skin alkaloids are well known for providing a wide range of biological activity. Some of these alkaloids include the histrionicotoxins, which are potent noncompetitive blockers of nicotinic receptor-gated channels, the batrachotoxins, which are selective activators of sodium channels, and the pumiliotoxins, which exhibit myotonic and cardiotoxic activity due to effects on sodium channels. The poison frog skin alkaloid targeted in this research project is alkaloid 275A'. Alkaloid 275A' was isolated in 2001 from the skin extracts of a red and black-banded dendrobatid frog, *Dendrobates lehmanni*. This compound is interesting for a variety of reasons. First, it has a unique 1-azabicyclo[5.3.0]decane structural framework, called a "5,7-izidine." Compounds with this ring structure are rare, and have only been isolated from the skin extracts of dendrobatid frogs. Second, the absolute stereochemistry of alkaloid 275A' is unknown. An enantioselective synthesis would prove the absolute stereochemistry of the three chiral centers found in this molecule. Finally, only five milligrams of the alkaloid were isolated per every one hundred frog skins extracted, making a synthetic approach to this molecule essential if studies on its biological activity are to be performed. Preliminary studies toward the enantioselective synthesis of alkaloid 275A' will be presented. A chiral bicyclic lactam approach is employed toward the preparation of the natural product's unique "5,7-izidine" structural framework. All of the synthetic intermediates were purified using silica gel column chromatography and characterized by <sup>1</sup>H NMR, <sup>13</sup>C NMR, and/or GC/MS.

**Student(s)**

Fligge, Pastel

**Sponsor(s)**

Mechelke, Mark

Title and Abstract	Presentation ID	Time	Room
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**A Climatology of Nocturnal Severe Weather Events in Eastern South Dakota**

T8

3:00

Ballroom

A climatology of nocturnal severe weather events from the warm seasons (April-September) of the years 1990-2002 has been constructed to quantify the time of occurrence of severe weather in east central South Dakota through eastern Minnesota. The lightning studies of Zajac and Rutledge (2000), and Riley et al. (1987) show that the time of maximum thunderstorm activity in South Dakota and Minnesota might be broader than was found by Wallace (1975). If the nocturnal thunderstorm distribution is broader, what does the severe weather distribution look like? This study helps to answer this question by examining hourly distributions of severe weather in the county warning areas of the National Weather Service offices in Chanhassen, Minnesota and Aberdeen, South Dakota. The goal of this study is to show secondary peaks of severe weather during the night. Temporal distributions of hail, damaging winds, and tornadoes have been constructed using statistical analysis. Results will be presented and compared with other studies, with emphasis on the secondary peaks in nocturnal severe weather.

**Student(s)**

Koll, Jakin

**Sponsor(s)**

Weisman, Robert

**Changes on Neuropsychological Test Performance in Students with a History of Concussion**

T9

3:00

Ballroom

A concussion is a temporary change in cognitive status which can include a loss of consciousness. The changes are hypothesized to be caused by a crisis in which there is an increased demand for glucose, but a decrease in blood flow (Hovda et al., 1999). In the past, these changes were believed to be temporary, but recent research has suggested that a concussion in athletes can result in permanent changes in brain functioning in student athletes (Lovell and Collins, 1998). In the present study, the changes in neuropsychological functioning of undergraduate psychology students who sustained one or more concussions were evaluated. Based upon a health-screening questionnaire, male and female psychology students were divided into two groups. The control group (n=40) had no history of concussion, no current medication, and no history of mental health or medical diagnosis. The concussion group (n=36) was not on medication and had no history of mental health or medical diagnosis, but had a history of a sports related concussion incident in their past. Both groups completed two neuropsychological tests called the Immediate Post-Concussion Assessment and Cognitive Testing Task (ImPACT) and the Neuropsychological Impairment Scale (NIS). Their cumulative GPA was obtained at the end of the semester. The performance of the groups will be compared in the data analysis. These results will include a discussion of changes in neuropsychological functioning and GPA after a concussion.

**Student(s)**

Hines, Lindsay

**Sponsor(s)**

Tinius, Tim

<b>Title and Abstract</b>	<b>Presentation ID</b>	<b>Time</b>	<b>Room</b>
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**Alcohol Use by Students at St. Cloud State University**

T10

3:00

Ballroom

Students from the Sociology Department surveyed over 400 St. Cloud State University students about their drinking behavior as well as their opinions on university policies and reputations. Students answered questions on binge drinking, unprotected sex, and high school drinking. The data were gathered by surveying classes from each college using a 20 question survey. The data show that SCSU's rates of binge drinking are comparable to nationwide rates found in prior studies. The percentages of binge drinkers may be low because of the small number of freshmen in the sample. The data are currently being used by ADAPT at SCSU as part of their mission to make students more aware of the negative consequences of alcohol usage.

**Student(s)**  
Schapira, Craig

**Sponsor(s)**  
Havir, Linda

**Response of Helianthus Annuus Roots to Changes in Soil Density**

T11

3:00

Ballroom

Roots are a plant's main method of obtaining nutrients and water from the earth. Therefore, understanding root responses to differences in soil helps explain why some plant species succeed in a given environment while others do not. This knowledge is also practical; in agriculture, for instance, plant varieties with superior root systems can be selectively bred to increase a crop's resistance to drought (Trump 1977). The purpose of this project was to measure Helianthus annuus root response to changes in soil density. In order to do so, we planted seeds in media of differing density. We completed three replicates of four treatments each: entirely soft soil material (vermiculate); entirely hard soil material (coarse sand); top layer soft, bottom layer hard; and top layer hard, bottom layer soft. The seedlings were harvested after ten days; the roots were cleaned, digitized, and analyzed for vertical growth, total root length, secondary roots, and root width using Image-J software. In addition, time lapse movies were made of root growth in each type of medium. The results from this experiment will be presented.

**Student(s)**  
Viegas, Katrina

**Sponsor(s)**  
Saupe, Stephen

**Medication Minder**

T12

3:00

Ballroom

This project entails creating a device that will assist patients taking multiple medications with the task of organizing and remembering the dosages and times. We have created a fully programmable device that holds twenty-eight separate doses of medication and stores the schedule for dispensing each dose. At a designated time, the medication is dropped into a tray for retrieval by the user. Upon dispensing a dose, the unit activates an audio and visual alarm to notify a user in the immediate vicinity. If the user is beyond the range of the audio alarm, the device notifies the user with a text message via a subscription wireless service.

**Student(s)**  
Alexander, Carlos  
Dinham, William

**Sponsor(s)**  
Glazos, Michael

Title and Abstract	Presentation ID	Time	Room
<p><b>Relapse Prevention in Substance Abuse Recovery Programs</b></p> <p>A focus on relapse prevention (RP) with substance abuse treatment. The current trend to reduce the duration of substance abuse recovery programs is placing increased pressure on effective relapse prevention techniques to support successful outcomes. Strategic, individualized RP programs provide patients with skills to recognize high-risk situations and increase the probability of consistently choosing appropriate options that will support better health and/or sobriety.</p> <p><b>Student(s)</b> Wood, Terryjo</p> <p><b>Sponsor(s)</b> Vesely, Barbara</p>	T13	3:00	Ballroom
<p><b>Self-Assembled Monolayers as Substrates for Surface Initiated Polymerization</b></p> <p>Due to difficulties of attaching large molecules to a surface while still achieving high surface coverage, a surface initiation technique was employed. A monolayer was attached to the surface via both self-assembly and chemical vapor deposition. The subsequent monolayer was functionalized for the polymerization reaction. The monolayer was polymerized using ethylene oxide to create a poly ethylene glycol surface. The surface was created for further study of protein adherence.</p> <p><b>Student(s)</b> Esselman, Michael Jensen, Jennifer</p> <p><b>Sponsor(s)</b> Neu, Donald</p>	T14	3:00	Ballroom
<p><b>A Comparison Study of Natural and Restored Wetlands Using the Nitrogen, Phosphorus and Sulfur Cycles</b></p> <p>Wetland communities are important habitats because they stabilize water supplies, cleanse polluted water, protect shorelines and recharge underground aquifers. They are also valuable sources, sinks and transformers of chemical and biological materials. Three important elements that cycle through wetlands are nitrogen, phosphorus and sulfur. Through a literature study, a comparison was made between natural and restored wetlands using these three cycles. Based on the current literature, the nitrogen, phosphorus and sulfur cycles are different. Natural riparian wetlands have higher rates of nitrate reduction than restored wetlands. Without the accumulated levels of organic material, restored wetlands cannot achieve the same levels of denitrification as natural wetlands. This lack of organic material also reduces the amount of immobilization and mineralization of phosphorus in restored wetlands. Natural wetlands can store more phosphorus, not only because of the accumulated organic material, but also because of the diversity of their plant communities. The sulfur cycle is dependent on the amount of nitrogen available in the wetlands, and the quantity of nitrogen found can vary in both types of wetlands. In conclusion, the literature search has found that the nitrogen, phosphorus and sulfur cycles do show differences when comparing natural and restored wetlands.</p> <p><b>Student(s)</b> Watson, Sherri</p> <p><b>Sponsor(s)</b> Bender, Mitch</p>	T15	3:00	Ballroom

Title and Abstract	Presentation ID	Time	Room
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**Hmong Immigration and Education in Wausau, Wisconsin**

T16

3:00

Ballroom

My project focuses on the difficulties with de facto segregation in the Central Wisconsin community of Wausau. For almost thirty years, this formerly homogenous community saw a great influx of refugees from Southeast Asia, mainly from an ethnic group called the Hmong. At first, the community welcomed the newcomers; however, problems began to rise when the immigrant population soared to numbers too big for the educational and social welfare systems to handle. In fact, the population became so large that in some elementary schools, the Hmong children outnumbered native-born children. This was problematic because most of these children did not speak English and the school system could not find any teachers that could speak Hmong. The school board at the time saw the need to end this de facto segregation and decided to implement bussing. Unfortunately, many in the community, native and Hmong alike, were not pleased with this policy, creating upheaval in this once calm community. My project will focus on the methods used to integrate the schools and how the school district deals with the heterogeneity. I will use interviews of former school board members, leaders of the Hmong community as well as the people that went through the controversy as students in these schools. I will also observe current practices in the schools for dealing with non-English speaking children and how these students are treated in the classroom by their teachers and peers.

**Student(s)**  
Arnold, Ursula

**Sponsor(s)**  
Johnson, Robert

**Relationship Between GPA and TOEFL Score for International Students at SCSU**

T17

3:00

Ballroom

With more than 3,000 colleges and universities across the country, the United States opens its doors to thousands of international students whose participation creates unity in diversity. The benefits are mutual. The campus gets international diversity and recognition, and for the students, it is an opportunity of a life time to experience world cultures and get a higher education. Educational institutions in the United States have set minimum requirements for international students for admission. These requirements are believed to be necessary to meet their educational challenges. The Test of English as a Foreign Language (TOEFL) is one of the primary requirements that international students need to meet for admission. Although the criterion for minimum TOEFL score varies from one institution to another, it has been observed that the minimum TOEFL score, which is 150 out of 300, for admission at SCSU is lower than most other colleges. It is believed that higher TOEFL scores are predictors of a better GPA and success at a US institution of higher learning. This project examines the correlation between the TOEFL score and GPA for international students at SCSU. SCSU suspects that raising the minimum TOEFL score will enable students to be more successful. In this research I concentrated on the statistical analysis to describe the relationship between GPA and TOEFL score. I found a small but significant relationship between TOEFL scores and GPA.

**Student(s)**  
Akhunji, Bakhtiar

**Sponsor(s)**  
Havir, Linda

Title and Abstract	Presentation ID	Time	Room
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**Using Self Assembled Monolayers to Probe the Boron-Nitrogen Dative Bond**

T18

3:00

Ballroom

The dative bond, in which an electron rich atom interacts with an electron poor atom, has long been of interest to chemists whose goal is to gain insight into chemical bonding. The classic Boron-Nitrogen bond has been extensively studied in crystalline solids, solutions, and gas phase environments. In crystalline adducts of B-N containing species a 1.6 Å bond distance with tetrahedral-like geometry about the Boron is found. Gas phase studies show B-N bond distances around 2.7 Å with a planar geometry about the Boron. Current interest in the N-B bond arises from previous work that demonstrated a quasi-covalent B-N bond in CH<sub>3</sub>CN-BF<sub>3</sub> of 2.011 Å with the BF<sub>3</sub> bent 6.68° back from planarity. Determining accurate B-N bond lengths in solution phase studies has been problematic due in large measure to complications involving the solvent phase. It is known that the local ‘solvating’ environment around the bonding partners dictates the extent of the bonding. Our goal was to create a dative bond within a quasi dielectric environment as would be found on a surface. As part of a recent Research Site for Educators in Chemistry (RSEC) collaborative project, we have employed self-assembled monolayer (SAMs) thin films incorporating exposed nitrile (-CN) functional groups. We demonstrate the formation of a nitrile containing monolayer on gold via thiol anchoring and subsequent characterization of the film via grazing angle infrared spectroscopy. We have also demonstrated the addition of a Boron containing species that bonds with the respective nitrile group on the SAM. Observation of changes in the stretching frequency of the nitrile group is reported.

**Student(s)**  
Kron, Steve

**Sponsor(s)**  
Dvorak, Michael

**Smallpox Vaccine**

T19

3:00

Ballroom

The intent of this study was to poll St. Cloud State University students regarding their knowledge, beliefs, and actions they would take, concerning the smallpox vaccine. I additionally used the gender of the student polled to see if a difference of knowledge, beliefs, and actions existed between males and females. An eight-question instrument was utilized to collect the participants’ knowledge, beliefs, and actions. The instrument was read over the phone to the students who were contacted. A random sample was used to select the students to which the survey was administered. Although the answers did not vary due to gender, interesting results were found.

**Student(s)**  
Ferrell, Marie

**Sponsor(s)**  
Minger, Mark



<b>Title and Abstract</b>	<b>Presentation ID</b>	<b>Time</b>	<b>Room</b>
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**Chemical Dependency Issues in the Hearing Impaired**

T20

3:00

Ballroom

The hearing impaired people of society have many challenges in their everyday life. When it comes to a hearing impaired person going through a substance abuse treatment program, it is no different. They have special needs that must be met in order for them to participate in a treatment program. Stemming from a person to sign to them in order for the patient to understand what is being said in a group meeting, individual meeting, or any other aspect of treatment that is being verbally explained. And that is just the beginning of the problems that they experience going through a treatment program. So my poster presentation will document all of the specific needs that they need in order to make it in everyday life which need to be made available for them in a treatment setting in order to achieve the goal of sobriety. I believe that this is a very important aspect of treatment that people do not think about, mainly because when people think of a disabled person they do not think of a person that is hard of hearing or deaf.

**Student(s)**

Kortan, Ryan

**Sponsor(s)**

Vesely, Barbara

**Effect of Growth and Light/Dark Cycles on Diatom Lipid Content and Composition**

T21

3:00

Ballroom

Total extractable lipid (TEL) and chlorophyll A composition will be studied throughout the growth cycle of four freshwater diatoms – *Aulacoseira granulata*, *Cyclotella meneghiniana*, *Melosira varians* and *Stephanodiscus niagarae* – under two light regimes (12/12 h LD and 8/16 h LD) at 20° C and 4° C. Chlorophyll A to TEL ratio will be used to identify the health of individual cells to identify if high growth rate truly indicates optimal growth conditions.

**Student(s)**

Howell, Zoe

**Sponsor(s)**

Julius, Matthew

**Evidence of Polyploidy in Endemic Diatoms Using Classical and Modern Methods**

T22

3:00

Ballroom

This study will determine the number of alleles found in the diatom species *Stephanodiscus niagarae*, *Stephanodiscus superiorenensis*, and *Stephanodiscus reimerii* and the total chromosome count for each species. Knowledge of chromosome number and ploidy level in diatoms will give insight on how cell division occurs, either by mitosis or meiosis. This knowledge may also explain a mechanism of speciation in diatoms. This will be done by light starving the cultures for a period of 2 days to ensure the cells have arrested into a G0, then exposing the cultures to a light cycle of 16:8 (light: dark) to allow the cells to enter into a synchronized growth cycle. Chromosomes will then be extracted using cell lysis techniques and centrifugation. The chromosome numbers will then be counted after preparing slides. The genetic material will be isolated and heated to ensure that the DNA strands have annealed and the rate of re-annealing will then be measured spectrophotometrically at a wavelength of 280nm. This curve will be compared to control curves made with polyploid and diploid strains of *Sacchomyces cervisiae*.

**Student(s)**

Seabloom, Kristine

**Sponsor(s)**

Julius, Matthew

Title and Abstract	Presentation ID	Time	Room
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<b>Speech Recognition and Composition Quality</b>	T23	3:00	Ballroom
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Speech recognizing word processors are already here and students will soon begin to commonly use them for everyday academic projects. The goal of this research is to determine how using speech recognition may affect the quality of undergraduate composition. In this study, participants learned to use a speech recognizing word processor. They then wrote two short (500-1,000 word) expository essays. They wrote an outline for each. In the Standard condition, the essay was typed in a word processor. In the Experimental condition, they composed the essay using speech recognition. The essays were evaluated in several ways, including: Vocabulary, Flesch reading ease and grade level, sentence length, total length, use of passive voice, etc. The essays will also (later) be rated on six quality dimensions by trained readers who are blind to the condition under which they were written. This is exploratory research, so we did not have strong predictions about whether speech recognition technology may increase or decrease writing quality. We will be presenting preliminary results.

**Student(s)**  
 Hoefer, Robert  
 Jacobsson, Amy

**Sponsor(s)**  
 Melcher, Joe

<b>Speech Language Pathology: The Unknown Field</b>	T24	3:00	Ballroom
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Among professionals in a particular occupation there are ideas about what others outside the field know and believe about their job responsibilities. On the other hand, there are the actual perceptions of the professionals outside the field. Whether these two perceptions match is questionable. Speech Language Pathologists (SLPs) commonly believe that other related professionals are misinformed as to the variety of services this field provides. Yet there is little actual information available about the situation. The purpose of this study was to address this belief by answering the following questions: 1) What are the perceptions of allied professionals of the field of speech language pathology and how did they get them? 2) What do SLPs believe about the knowledge other professionals have of the field? 3) How are the different perceptions related to each other? Fourteen SLPs and eighteen various allied professionals served as participants in the study. Allied professionals included teachers, social workers, physicians, nurses, an audiologist, a behavior therapist, and an orthodontist. Open-ended questions were developed for both the SLPs and allied professionals, and each was interviewed about her/his perceptions. Results of study showed: allied professionals valued the contribution of SLPs, but lacked knowledge about their scope of practice and the SLPs believed an increase in professional self-advocacy would help in making the field better known.

**Student(s)**  
 Anderson, Meggann  
 Angerhofer, Kristan  
 Casey, Annie  
 Jordan, Florence  
 Paumen, Anna  
 Serie, Annah  
 Sholund, Amy  
 Thell, Janie

**Sponsor(s)**  
 Whites, Margery M.

Title and Abstract	Presentation ID	Time	Room
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**Sociology in Social Services in Disaster Situations**

T25

3:00

Ballroom

This project is the direct product of a recent internship in which I worked with the Emergency Services Department of the St Cloud Chapter of the America Red Cross. I worked at the chapter level in creating and updating the chapter's disaster preparation plan. This process involved numerous facets of strategic planning and will be approved by the national organization. The plan will be used not only in regular operation as a reference manual for volunteers responding to single-family disasters, but also may come to be used for disasters of higher levels and scope. The project presented here deals with the creation of the protocols as well as some of the direct disaster experiences I observed. My internship experience relates to contemporary research and to the sociological background and skills I have gained throughout my academic sociology program.

**Student(s)**  
Boyd, Travis

**Sponsor(s)**  
Havir, Linda  
Ore, Tracy

**A Global Chemometric Analysis Integrating Chromatographic Parameters and Fluorescence 'Lifetime' Decays for Resolving Co-eluting Analytes from Planar Chromatographic Methods**

T26

3:00

Ballroom

We have developed and tested a self-modeling chemometric algorithm for spectroscopic resolution of multiple, highly overlapped analytes that are otherwise insufficiently separated using planar chromatographic methods. This algorithm operates on a series of data arrays that represent fluorescence decay profiles that have been recorded on a 2D grid-work overlaying the planar chromatographic surface. Our algorithm is based on globally fitting these decay profiles to spectroscopic and chromatographic parameters including fluorescence lifetimes, 2D peak positions, widths, and relative amplitudes. These parameters in turn can provide information about the number and identity of highly overlapped analytes present in a segment of the 2D chromatogram of an unresolved chemical mixture. Our approach is demonstrated on a series of synthetic data sets that portrait a set of binary fluorophores with respective lifetimes of 10 and 25 nanoseconds and whose peak positions progressively overlap in space.

**Student(s)**  
Frigo, Ben

**Sponsor(s)**  
Dvorak, Michael

Title and Abstract	Presentation ID	Time	Room
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**Social Response to Negative Sexual Experiences**

T27

3:00

Ballroom

According to the Uniform Crime Report in the year 2000 sixty-four out of every one hundred thousand females became victims of rape. This statistic only represents those rapes reported to officials and is also misleading considering sexual assault is the most under reported crime. Studies show that non-report rates of sexual assault correlates strongly with acquaintance rapes as opposed to stranger sexual assaults. Growing recognition of rape has led to improvements in laws and services in the past years however fewer than 10 to 20 percent utilize these services. One of the main influences on the victim is the response of the social support systems around them. The social network that surrounds the victim greatly influences the way they deal with the crime and their decision to report. Over 600 males and females were given a survey with a vignette of a negative sexual experience and asked to give their response to the situation. The survey also asked for the level of helpfulness of different responses to the situation such as seeking services from the criminal justice system. The use of this informal survey is helpful in determining how social support influences of peers on sexual assault victims as well as influencing whether the crime gets reported to authorities. In an ideal scenario the criminal justice system is designed to punish criminals for their behaviors however when crimes go unreported this is not possible. There are several reasons that crimes such as sexual assault go unreported and the response by the victims social support system has been proven to be an influential factor in this decision.

**Student(s)**

Hansen, Nicole

**Sponsor(s)**

Scheel, Elizabeth

**Detoxification of Chloroacetaldehyde by Aldehyde Dehydrogenase**

T28

3:00

Ballroom

Chloroacetaldehyde, a metabolic by-product of many antineoplastic agents, i.e. alkylating agents, causes nephrotoxicity (kidney toxicity) in 10% of the patients administered these drugs. Chloroacetaldehyde can further be reduced to chloroacetate, a compound that is much less toxic. Recent studies show that patients able to oxidize chloroacetaldehyde to chloroacetate do not suffer from nephrotoxicity. Aldehyde dehydrogenase, which is implicated in oxidation of chloroacetaldehyde was studied to whether aldehyde dehydrogenases are present in human kidney, if so whether they are responsible for oxidation of chloroacetaldehyde. Three major classes of aldehyde dehydrogenases, ALDH1A1, ALDH2 and ALDH3A1, are present in human kidney. Their relative Km values were found to be 300µM, 10mM, and 80mM respectively. This shows that ALDH1A1 is responsible in detoxifying most of chloroacetaldehyde, although the latter two classes of ALDH also exhibit the same behavior. Detoxification of chloroacetaldehyde is therefore highly dependent on the presence of ALDH1A1 in the kidneys. Patients lacking ALDH1A1 are therefore more susceptible to suffer from nephrotoxicity.

**Student(s)**

Chan, Wen How  
Ong, Su Sien

**Sponsor(s)**

Sreerama, Ram

Title and Abstract	Presentation ID	Time	Room
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<b>Individual Variation in the Decrease of VO<sub>2</sub> While Skiing at 1800m in Elite Female Cross-Country Skiers</b>	T29	3:00	Ballroom
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Recently, the International Ski Federation raised the altitude limit for World Cup competition, allowing the 2002 Olympic races to be held at 1800m. In a previous study, fifteen female college runners each completed 3000m time trials both at sea level and 1800m. A decrease in performance was shown. PURPOSE: To characterize the individual differences of elite female cross-country skiers at moderate altitude. METHODS: Eight elite female cross-country skiers exercised at maximal steady state intensity in normoxia followed by exercise at the same absolute workload in hypoxia. Each athlete exercised for 5 minutes under each condition using V1 skating technique on rollerskis at 2.75 m/sec up a 5.1 degree incline. Athletes inspired and expired through a respiratory valve where the hypoxic condition was achieved by inhaling 16.5% oxygen, balance nitrogen (est. altitude of 1800m). Inspired and expired gas concentrations, ventilations and exercise arterial saturations (SpO<sub>2</sub>) were measured. Oxygen uptake was calculated from those variables for each condition. RESULTS: While the group mean VO<sub>2</sub> was significantly decreased in hypoxia, there was a large individual variation in the decrease of oxygen uptake and in the decrease of oxygen saturation in the blood. CONCLUSIONS: The results display a trend in the correlation between the individual decline in oxygen uptake and saturation of oxygen in the blood. Therefore, we speculate that very modest hypoxia associated with altitudes of 1800m is sufficient to produce a pulmonary limitation in endurance athletes with high aerobic power. Since we observed similar range of impairment in collegiate runners' performance at 1800m, we also speculate that the acute decrease in oxygen uptake observed in this study will impair Olympic performance and impair some athletes to a greater extent than others.

**Student(s)**  
Schouweiler, Calisa

**Sponsor(s)**  
Stray-Gundersen, Jim  
Street, Glenn

Title and Abstract	Presentation ID	Time	Room
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**Knowledge and Opinions About the Ozone Hole**

T30

3:00

Ballroom

The decrease in area of the annual Southern Hemisphere ozone hole has raised the question "Should we continue to be concerned about the condition of the ozone hole?" In order to evaluate their knowledge and opinions about the ozone hole, a survey was administered to 200 (total population of 224) 7th and 8th graders at a Central Minnesota middle school. Students were surveyed simultaneously in 18 classrooms by homeroom teachers, and were told the survey was for a St. Cloud State University student's research project regarding the southern hemisphere ozone hole. The survey was anonymous and students were not required to participate. The eleven-question survey was based on three research questions

1. To what extent are 7th and 8th grade students knowledgeable about the Southern hemisphere ozone hole?
2. To what extent are these students knowledgeable about factors influencing the Southern hemisphere ozone hole?
3. What are the beliefs of these students concerning the future of the Southern hemisphere ozone hole?

Of 182 respondents, a majority knew the atmospheric and geographic location of the hole but few knew how large it had grown. Just over 60% correctly identified 6 of 8 items that influence the ozone hole. When asked their opinion, most students believed that the ozone hole would grow larger or had no opinion. When asked if the ozone hole would grow smaller when the atmosphere is cleaner 43% agreed, 35% had no opinion, and 21% disagreed.

**Student(s)**  
Tollefson, Bryan

**Sponsor(s)**  
Hoff, Jean  
Simpson, Patricia

**Significant Severe Thunderstorm Proximity Soundings**

T31

3:00

Ballroom

Four hundred and sixty-eight 0000 UTC proximity soundings were examined in an attempt to find parameters that may discriminate between significant tornadic and significant non-tornadic environments. Significant severe weather is defined as a storm having an F2 or greater tornado, 2.00" hail or greater, and/or 65 knot wind speeds or greater. The data set was constructed between the dates of September of 1993 through December of 1996 for the contiguous United States region. In this study, proximity is defined as a significant severe weather event that occurred within 100 nm of a United States rawinsonde site, and between 2100 UTC and 0300 UTC (six hour time period centered on 0000 UTC launch). It was shown that low-level shear and mean layer lifting condensation level heights were the best discriminators between these two types of environments.

**Student(s)**  
Nordin, Stephanie

**Sponsor(s)**  
Hansen, Anthony

Title and Abstract	Presentation ID	Time	Room
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<b>Medicinal Plants of Bagaces, Costa Rica</b>	T32	3:00	Ballroom
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An ethnobotanical survey of medicinal plant use was conducted in Bagaces, a small town located in Guanacaste, Costa Rica. We interviewed 23 individuals to determine the plants most commonly used for medicinal purposes, the conditions for which they are used and their preparation. Approximately 50 plants were used by the community. All plants were noted in previous medicine literature. Women used medicinal plants more commonly than men. The individuals with less education used medicinal plants more frequently than individuals with more education. Most knowledge about medicinal plants was received from older family members. Plants were utilized mainly to treat common conditions, such as digestive problems, colds, headaches and pain. Results from this study add to our understanding of medicinal plants, and show that the Bagaces community uses traditional plant-based medicines as much as modern medicine.

**Student(s)**  
McIntyre, Trisha  
Scott, Sara

**Sponsor(s)**  
Saupe, Stephen

<b>Should United States Citizens Be Vaccinated Against Smallpox?</b>	T33	3:00	Ballroom
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In the events following September 11th bioterrorism has moved to the forefront of public discussion. Once a scourge upon humanity, smallpox has lied dormant since its global eradication in 1980, but now is of the greatest concern with regards to this new age of terrorism. Currently, a national program has been initiated to vaccinate first responders against smallpox. Will there be enough vaccine for the general public in case of an attack? What are the costs and risks associated with such a program? What are people attitudes towards bioterrorism and smallpox? Using students at North Hennepin Community College, this research tries to answer these questions.

**Student(s)**  
Hancock, Jay

**Sponsor(s)**  
Minger, Mark  
Simpson, Patricia

Title and Abstract	Presentation ID	Time	Room
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**Ethical Decision Making**

T34

3:00

Ballroom

The recent increase in corporate fraud has highlighted the need to look further into unethical decision making in corporate America. Business leaders today face many difficult decisions, most of which are ill-defined and involve ethical implications. These leaders will not always make the best decisions for their companies and/or their employees. Both situational characteristics and personal characteristics will influence them. This research explored how individual differences relate to unethical or destructive decision-making in various ill-defined organizational situations. Unethical decision making was defined as those decisions that hurt the employee or the long-term growth or profitability of the company. Several individual differences were assessed: (a) personal values, (b) preference for intuitive or rational thinking, and (c) destructive personality. Demographic information was also collected. Participants were undergraduate college students. Results of this study further the understanding of how personal and situational characteristics affect an individual’s willingness to make unethical decisions. By exploring these relationships, we eventually hope to gain a better understanding of the motivations behind unethical corporate behavior.

**Student(s)**

Fischer, Mollie  
Ziegler, Michael

**Sponsor(s)**

Illies, Jody

**Chemical Dependency and Adolescents**

T35

3:00

Ballroom

This study was designed to further understand adolescents and their drinking habits. There is an understanding that adolescents have a problem, but no real help for them. “The younger a child is when experimenting begins, the more likely it is a dependency will develop later” (Stevens & Smith, 238). If we help them when they are young, we will reduce the number of dependent adults. Most of the study focused around the causes of adolescent drinking and what can be done to stop it.

**Student(s)**

Rakow, Vanessa

**Sponsor(s)**

Vesely, Barbara



Title and Abstract	Presentation ID	Time	Room
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<b>Recall Performance as a Product of Practiced or Non-practiced Exemplars</b>	T36	3:00	Ballroom
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It has long been thought that people remember associated items better than non-associated items. Researchers have examined this by conducting studies where subjects are given a list of words, some of which are related to each other while the remaining are random. They are then tested for retrieval abilities and generally, it is found that the associated words are remembered more frequently. In the current study, researchers will take into account common gender stereotypes as it relates to personality characteristics. Participants will be undergraduates at SCSU, who are enrolled in various introductory psychology classes. They will view a PowerPoint presentation containing two individual's names and the personality traits of each. Then subjects will be guided through practice sessions for half of the traits. The final step will be a measure of recall performance where participants will be asked to write down each trait they remember for each individual. Researchers hypothesize that traits coherent with gender stereotypes will be recalled more frequently in same-gender conditions than in mixed-gender conditions. Researchers also hypothesize that gender-neutral traits will be the least frequently recalled.

**Student(s)**  
Hess, Jenilee  
Streefland, Lisa

**Sponsor(s)**  
Valdes, Leslie

<b>Precipitation Verification of the LAPS Storm Total Precipitation Estimates</b>	T37	3:00	Ballroom
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A statistical error analysis is performed in order to verify the accuracy of the Local Analysis and Prediction System (LAPS) storm total precipitation (STP) estimates. The analyzed STP estimates from LAPS were compared to cooperative observer and automated precipitation reports throughout the Minneapolis (MPX) county warning area (CWA) at the National Weather Service office located in Chanhassen, Minnesota. LAPS integrates WSR-88D Doppler radar data, aircraft observations, satellite data, and surface observations to produce its analyzed precipitation accumulations. LAPS images, and cooperative observer and automated reports were collected for precipitation cases throughout the winter of 2002 to 2003 for the MPX CWA. With the results of the statistical error analysis, forecasters at the National Weather Service office in Chanhassen, Minnesota will be able to determine if the LAPS STP is a reliable source to use for their forecasts during the winter season.

**Student(s)**  
Henry, Amy

**Sponsor(s)**  
Hansen, Anthony

Title and Abstract	Presentation ID	Time	Room
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<b>Effects of Blue Cohosh on Serum Oxytocin Concentrations in Virgin Female Rats</b>	T38	3:00	Ballroom
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Tea made from the root of blue cohosh (*Caulophyllum thalictroides*) is commonly used by midwives to induce uterine contractions during labor. The posterior pituitary hormone oxytocin is involved in a positive feedback loop during labor that also results in uterine smooth muscle contraction. Thus, blue cohosh may induce its oxytocic effects by increasing oxytocin levels. The goal of this study was to determine if a single dose of blue cohosh tea equivalent to the highest recommended human dose would raise serum oxytocin levels in virgin female rats. In this study, either water, used as a control, or blue cohosh tea were administered orally to virgin female rats in the diestrus phase of their cycle. Blood samples were obtained via cardiac puncture before administration, 30 minutes after administration, and 90 minutes after administration of either water or tea. Oxytocin serum levels from the blood samples were detected using a competitive immunoassay. No significant increase in oxytocin serum levels were detected in animals fed tea as compared to animals that received water at any of the time intervals that were tested. Furthermore, cohosh did not affect estrous cycles. Further studies are needed to determine if there may be a mechanism present in pregnant rats that makes them more sensitive to blue cohosh than non-pregnant rats.

**Student(s)**  
Gerads, Melissa

**Sponsor(s)**  
Tubbiola, Maureen

<b>Adjustable Knife Sharpener</b>	T39	3:00	Ballroom
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Synthetic composites are structures manufactured by using fiber materials held together in a polymer matrix. The end product results in a composite material that possesses superior qualities to those of its constituents. The fibers provide stiffness and strength, and the matrix binds the fibers together. Synthetic composites are classified as anisotropic, which means their structural or mechanical properties vary with the orientation of the fibers. A successful finished product is dependent on several factors: fiber placement along required orientations, impregnation of fibers with a resin, the removal of excess resin and air, curing, extraction of part from mold, and final machining. A combination of processes was used to design and manufacture an adjustable knife sharpener. The design was based on the concept of using carbide triangular cutting bits mounted in a fashion where the cutting angle they formed could be infinitely adjustable between approximately 8 to 30 degrees. A fiber-reinforced material was appropriate for this application because the amount of force used to sharpen a blade is intense enough to require enough structural integrity to withstand bending and twisting forces exerted while sharpening a blade. Additionally, it required enough rigidity for separate parts to revolve on an axis bolt, which insures the accuracy and stability of the cutting angle created by the carbide bits. These requirements could have been met with a metal structure, but composites are much lighter and inexpensive. Since this was a hand held sharpener, weight was a key issue. The goal of this study is to illustrate knowledge of the technical properties of composites, fiber materials, matrices (epoxies and polyesters), structural integrity, machining properties, forming properties, bonding fibers to matrices, insert molding, mold design, and mold release.

**Student(s)**  
Weimer, Mark

**Sponsor(s)**  
Nicholson, James

Title and Abstract	Presentation ID	Time	Room
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**Are American White Pelicans Breeding in Northern Montana Responsible for Catfish Depredations in the Southeastern U.S.?**

T40

3:00

Ballroom

Wildlife cause billions of dollars in damage each year. For example, the aquaculture industry in the southeastern US alone suffers millions of dollars in losses to fish-eating birds annually. American white pelicans (*Pelecanus erythrorhynchos*) are responsible for much of the damage to catfish farms. Management of the problem can occur either locally (at catfish farms) or regionally (at pelican colonies). However, the source of nuisance pelicans is unknown, which makes lethal control at colonies unjustified. The fifth largest pelican colony in the US occurs at Medicine Lake National Wildlife Refuge (MLNWR). The purpose of this study is to determine if pelicans from MLNWR contribute to damage at catfish farms in the southeastern US. I analyzed band recoveries (n=252), movements of satellite-tagged pelicans (n=5), and distribution of catfish farms to evaluate the potential for conflict involving MLNWR pelicans. Most band recoveries occurred in Montana (19%), Mexico (17%), and Texas (12%). Only 10 (4%) recoveries occurred in the primary catfish-producing states of Alabama, Arkansas, Louisiana, and Mississippi. Four of five tagged pelicans migrated south in the central flyway, whereas one used the Mississippi flyway. Only one pelican wintered in the primary catfish producing state, the others in Texas and Mexico. There is little overlap between distribution of MLNWR pelicans and southeastern states with a high density of catfish farms. Research needs to be conducted at large colonies east of Montana to determine the source of problem pelicans.

**Student(s)**  
Assenmacher, Mike

**Sponsor(s)**  
Restani, Marco

**Changes in Characteristics of US Snowfall Over the Last Half of the 20th Century**

T41

3:00

Ballroom

Several recent studies have reported that large portions of the mid-and high-latitude land areas of the northern hemisphere (including much of the United States) have experienced increasing precipitation over the last half of the 20th century. From a relatively small number of studies of snowfall trends, the characteristics of northern hemisphere wintertime precipitation over this period have been found to vary over space and time. Over the United States, some specific findings from these studies include: increasing snowfall in parts of the Great Plains and Northeastern states; increasing inter-annual variability in nationally averaged snowfall; and, as recently reported by the IPCC, a reduction in a directly related variable - spring snow cover area. In our current study, daily snowfall amounts from 1948 through 2001 are examined in several ways. We analyze records over the whole year and also over an October through May 'snow season' to study trends and variations in variables such as total snowfall, number of snow days, average magnitude of snowfall events, number of events exceeding a specific threshold, near-surface air temperature on snow days, and the contribution of snowfall liquid water equivalent to total annual precipitation. Preliminary results indicate interesting regional changes in many of these variables.

**Student(s)**  
Scott, Daria

**Sponsor(s)**  
Hansen, Anthony

<b>Title and Abstract</b>	<b>Presentation ID</b>	<b>Time</b>	<b>Room</b>
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<b>Paleolimnology of Sullivan Lake</b>	T42	3:00	Ballroom
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The purpose of this study was to determine the water quality changes through time of Sullivan Lake. A core was taken from Sullivan Lake in January 2002 and was divided into 1 cm intervals. Each interval was cleaned with hydrogen peroxide and nitric acid. The samples were plated out and *Stephanodiscus nigrae*, *S. minutulus*, *Cyclotella bodanica* and *Aulacoseira granulata* were counted on each slide until a count of 500 was reached. These numbers were used to determine the overall trophic state of the lake at those various points and inferred human impact based on local history of the area. Pre-settlement Sullivan Lake was not very eutrophic, but through time, became more eutrophic. This suggests that humans have had a very negative impact on this system.

<b>Student(s)</b> Kapushinski, Tiffany	<b>Sponsor(s)</b> Julius, Matthew
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<b>Studies using the eosinophil model cell line AML 14.3D10</b>	T43	3:00	Ballroom
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The AML 14.3D10 human myeloid leukemic cell line was established at Wright State University in 1992 from a 68-year-old man who had presented with acute myeloid leukemia. AML 14.3D10 displays an eosinophilic phenotype and proliferates vigorously in culture medium. This cell line is thus a good candidate for our current studies in which we are seeking to identify an eosinophilic model cell line that expresses two molecules of interest, namely CD9 and beta 7 integrin. We are testing AML 14.3D10 for expression of cell surface molecules, including CD9 and beta 7 integrin, when stimulated with n-butyric acid (BA) and phorbol 12-myristate 13-acetate (PMA) for varying time periods. Cell adhesion assays are being used to monitor expression of these molecules.

<b>Student(s)</b> Nkhata, Katai	<b>Sponsor(s)</b> Meerschaert, JoAnn
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<b>Preliminary Crystallization Methods of Aldehyde dehydrogenase</b>	T44	3:00	Ballroom
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The ultimate goal of this project is to crystallize recombinant human Class 1 Aldehyde Dehydrogenase (ALDH-1A1) and to use x-ray diffraction to determine the 3-D structure of this protein. This is the preliminary work, isolating and purifying large quantities of ALDH-1A1, to obtain enough protein to begin the crystallization trials. The ALDH-1A1 is isolated from E.coli expressing the human recombinant ALDH-1A1.

<b>Student(s)</b> Lawrence, Rachel	<b>Sponsor(s)</b> Winter, Nathan
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Title and Abstract	Presentation ID	Time	Room
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<b>Synthesis and Spectroscopic Studies of Vanadium Complex with Insulin Like Properties</b>	T45	3:00	Ballroom
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Vanadium complexes have been shown to have insulin-like effects on glucose metabolism. Studies have shown that vanadium counteracts the hyperglycemia associated with streptozocin-induced diabetes in the rat. Vanadium may also have promising therapeutic value in the treatment of cancer. The interest in vanadium has led to our studies in the synthesis and characterization of a potential antidiabetic vanadium complex in its +4 oxidation state with  $\beta$ -diketonate ligand system. The complex of  $VO^{2+}$  with pbd ligand (pbd = 1-phenyl-1,3-butanedione) was synthesized and characterized by using several spectroscopic techniques. The solid state mass spectral analysis showed the mass peak at 389, which corresponds to the stoichiometry of  $VO(pbd)_2$ . In the IR spectrum,  $VO(pbd)_2$  exhibits a C=O peak at  $1703\text{ cm}^{-1}$ , a C=C peak at  $1587\text{ cm}^{-1}$ , and a V=O peak at  $995\text{ cm}^{-1}$ . The UV-VIS spectrum in methylene chloride showed peaks at 260 nm, 329 nm, 460 nm, 598 nm, and 690 nm. This spectral behavior of this complex corresponds well to other related complexes. The electronic properties of this complex in other coordinating solvents like DMF and DMSO will also be presented. These studies may further demonstrate the effects of ligands on vanadium complexes, which may then lead to better understanding of their antidiabetic and anticancer properties.

**Student(s)**  
Otremba, Jessica  
Sitzman, Amber

**Sponsor(s)**  
Mahroof-Tahir, Mohammad

<b>Community Psychology Club: An Evolving Project</b>	T46	3:00	Ballroom
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This project presents the activities of the Community Psychology Club at SCSU during the last year from the perspective of a GA and co-presidents. The Club started three years ago. The Mission Statement of the Community Psychology Club is to assist students to volunteer in the community and to educate members about the graduate school application process and the skills necessary to succeed in careers. The Community Psychology Club has accomplished this by being involved in several activities and is currently working on more projects during fall semester. It has been involved in many volunteer projects over the year. Some of these include a fundraiser for Catholic Charities - Life Transitions, volunteering at Place of Hope Ministries and New Beginnings, and Read-Across-America at Mississippi Heights Middle School located in Sauk Rapids. The Community Psychology Club has worked together with many on and off campus organizations. Activities with these organizations gave insight to members about career volunteer opportunities, and they also helped the members to set up resumes. Examples of organizations include: Volunteer Link and Career Services. The Club also organized a graduate school tour to Minneapolis, which gave the members a chance to get a better understanding of the differences of graduate schools, and order to get students involved in the activities representatives of the Club have kept the bulletin board up-to-date. E-mail, posters, and instructor encouragement have helped build membership. As the Club continues to go we learn more about activities that assist student learning about graduate schools, contributing to community, and finding employment. This information will continue to be evaluated as the Club evolves.

**Student(s)**  
Anderson, Hiliary  
Hanson, Bianca  
Hjalmervik, Scott

**Sponsor(s)**  
Jorgensen, Leeann

Title and Abstract	Presentation ID	Time	Room
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**Synthesis and Characterization of Vanadium Complex with Bidentate Ligand: Potential Antidiabetic Properties**

T47

3:00

Ballroom

Medicinal Chemistry has recently brought an increased awareness to vanadium coordination chemistry. Vanadium complexes with organic ligands have shown promising antidiabetic properties and may have potential anti-tumor activity. In continuation of our studies on the synthesis and characterization of antidiabetic vanadium complexes with bidentate ligands, we have synthesized and characterized a complex with beta-diketonate coordinating ligand. As per mass spectral analysis the composition of the synthesized complex was found to be VO(dbm)<sub>2</sub> (dbm=dibenzoylmethane) in which vanadium is in +4 oxidation state. This complex exhibits a  $\nu_{V=O}$  stretching frequency at 993 cm<sup>-1</sup>, which is expected range for the complexes with square pyramidal vanadyl (VO<sup>2+</sup>) complexes. In methylene chloride it exhibits five charge transfer and d-d transitions in Uv-vis spectrum. These peaks are shifted in other coordinating solvents like DMF and DMSO. A comparison of the structures of this complex in solid and solution state will be presented in this poster. Future toxicity and bioactivity studies of this and other related complexes synthesized in our lab will give important information regarding the structure activity relationship of these complexes to their medicinal value.

**Student(s)**

Cleland, Megan  
Mills, Travis

**Sponsor(s)**

Mahroof-Tahir, Mohammad

**Differential Display of Proteins in Tumor Cells**

T48

3:00

Ballroom

Differential expression of proteins is responsible for differences in cellular function, including drug resistance in certain cancer cells. The determination of protein differences among cancer cells that are resistant a certain antineoplastic drug as compared to its non-resistant counterpart may lend insight into why the different cell lines have differences in their responses to treatment. In this regard our laboratory has developed a human breast carcinoma MCF-7/0 sub-line, viz., MCF-7/UCN-01 resistant to UCN-01, a drug that is being developed to treat metastatic breast cancer. To determine the difference in protein expression, the above two cell lines were cultured, allowed to replicate, and their proteins extracted. Preparation and separation of proteins from the two cell lines involved the use of pH precipitation technique, sodium dodecylsulfate polyacrylamide gel electrophoresis (SDS-PAGE), and Matrix assisted laser desorption ionisation time-of-flight mass spectrometry (MALDI-TOF MS). The first two techniques allow for separation of proteins and MALDI-TOF-MS allows for identification of proteins via mass quantification and bioinformatic analysis. Proteins analyzed this way in MCF-7/0 and MCF-7/UCN-01 cells will be compared to identify the differences in protein expression. Thus identified differences may then be exploited to reverse the resistance to UCN-01.

**Student(s)**

Winters, Valerie

**Sponsor(s)**

Sreerama, Ram

Title and Abstract	Presentation ID	Time	Room
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<b>Statistical Analysis of the Healthy Start Progress Report: Is a Good Parenting Construct Measurable</b>	T49	3:00	Ballroom
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This research was completed in order to study information pertinent to Healthy Start, a collaborative, community-wide universal screening and intervention program. The agency provides short- and long-term home visiting, family mentors, and community to family resources. Healthy Start uses a Quarterly Progress Report that evaluates and documents progress in parent/child interactions, records referral, background information, and documents home visits by collaborative agencies. Statistical analysis was completed to measure a construct of good parenting and determine predictive qualities of the instrument. Sum principal component analysis determined the domains assuring: parent's knowledge of child development, parent's response patterns to child's cues (responsivity), parent's acceptance/affection of the child (expressivity) and parent's discipline methods, are valid measurements (as demonstrated by all measures tapping into a single underlying construct) of the intended "good parenting." In addition, a review of the literature determined a congruency with the aforementioned domains. T-test analysis determined that the length of the program was statistically significant for predicting improvement in scores for domains measuring parental knowledge and parental discipline. Additional t-test analysis indicated that whether or not families received prenatal home visits was statistically insignificant for predicting improvement in domains measuring a good parenting construct. Further t-test analysis was statistically insignificant when risk factors at entry were examined for predicting improvement in domains measuring good parenting skills. In addition, access to crisis related or preventative support systems were insignificant for predicting scores for the construct of "good parenting." A pattern of improvement was established on the progress report for families in the sections measuring good parenting when comparing Quarter 1 and Quarter 4 results. This study has relevance for agencies that use intervention strategies to promote good parenting.

**Student(s)**  
Exsted, Robin

**Sponsor(s)**  
DeVoe, Marlene

Title and Abstract	Presentation ID	Time	Room
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<b>Listening in Noise: A Study of Backward Masking for Speech and Tones</b>	T50	3:00	Ballroom
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Listening to speech, music, or other sounds while another noise is occurring may be challenging for everyone, but especially for persons with language disorders. The amount of noise interference in various listening situations can be studied using a paradigm called “masking”. Masking is defined as the amount by which the threshold of audibility for one sound (signal) is raised by the presence of an interfering (masking) sound. Three types of masking are seen in everyday situations depending on when the interfering sound is introduced in relation to the other sound: simultaneous, forward, and backward masking. Backward masking occurs when the signal is presented and then ended prior to the presentation of the masker. For example, if your friend utters a word just prior to the presentation of a musical note, backward masking may occur. The purpose of this research was to determine if listeners who have difficulty with backward masking for tones in noise will also have difficulty recognizing speech sounds in noise that are presented in a backward masking paradigm. To achieve this goal, we measured backward masking for tones and for speech in a sample of children and adults. Participants included four adults and five children ranging in age from eight to 13 years. Results show a significant correlation between tonal thresholds and speech recognition performance in the presence of a backward masker. There is a trend for persons with a history of language impairment to perform worse on these backward masking tasks compared to persons without any history of language problems. If this trend holds in a larger sample it has implications for treatment of persons with language problems.

**Student(s)**  
Paumen, Allison

**Sponsor(s)**  
Schlauch, Robert  
Whites, Margery M.

<b>Knowledge and Opinions about Drilling in the Arctic National Wildlife Refuge</b>	T51	3:00	Ballroom
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The debate on whether to drill for oil in the Arctic National Wildlife Refuge (ANWR), an issue for many years, has increased in intensity due to new energy proposals from the Bush Administration. Advocates believe that this essential resource should be used and environmentalists believe the refuge is too fragile for oil rigs. Central Minnesota 8th grade Earth Science students were given a questionnaire/opinionare based on this issue. The main purpose of the research was to see what middle school students understood about the issue and what opinions they had toward drilling in ANWR. Out of 150 students, approximately 30 were absent on the day the survey was administered. On seven of eight knowledge questions, 60% or more of the students correctly identified what is at risk if drilling occurs in ANWR. Their opinions about the issue were evenly distributed, however a majority thought we should be looking to alternative resources for energy. Students were knowledgeable of the risks of drilling despite the fact that they did not have a clear opinion nor willingness to take action based on their personal opinions and knowledge.

**Student(s)**  
Telander, Eric

**Sponsor(s)**  
Hoff, Jean  
Simpson, Patricia



<b>Title and Abstract</b>	<b>Presentation ID</b>	<b>Time</b>	<b>Room</b>
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<b>State Anxiety and Visual Memory</b>	T52	3:00	Ballroom
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This study investigates how anxiety that threatens the self impacts the recall of visual memories. Participants include undergraduate psychology students. Participants are asked to write a short critical thinking essay individually or as part of a group. Some participants are led to believe that their essay will be critiqued in front of peers in order to provoke personalized (individual essays) or depersonalized anxiety (group essays). Personalized anxiety is anxiety that threatens the self. Depersonalized anxiety does not threaten the self. After writing the essay, participants take a visual memory test and an anxiety assessment. The hypothesis is that visual memory will be more impaired by personalized anxiety than by depersonalized anxiety.

**Student(s)**  
Mitchell, Katherine  
Wyman, Jamie

**Sponsor(s)**  
Valdes, Leslie

<b>Chronic Wasting Disease</b>	T53	3:00	Ballroom
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Chronic Wasting Disease (CWD) is quickly becoming one of the greatest concerns for wildlife throughout the United States. Not only does it threaten the deer and elk herds, but it is also a human health concern. Although the testing that has been done to date indicates that there is no way for humans to contract the disease it still remains a fearful possibility. A random survey was conducted to ascertain the knowledge about CWD, the beliefs and feeling towards eating meat of deer infected with CWD and how knowledge effects the beliefs of 100 St. Cloud State students. As indicated by the survey, the greatest problem, however, is the fact that the general public knows very little about the disease and its implications. In order to make quality decisions with respect to the disease the general public must be informed and aware of CWD, only then can the disease be controlled and hopefully eradicated from the deer and elk populations of North America.

**Student(s)**  
Koch, Jason

**Sponsor(s)**  
Simpson, Patricia

<b>Photochemistry of Phenethyl Isothiocyanate</b>	T54	3:00	Ballroom
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The purpose of this research is to develop an enhanced understanding of the photochemistry of phenethyl isothiocyanate (PEITC). Isothiocyanates are a class of molecules which are very important in biological systems. Thus far it has been determined that when PEITC is exposed to ultraviolet radiation, there is a desulfurization reaction that occurs. Research has included varying the solvent polarities and the use of different sulfur “quenchers.” It has been determined by measuring the quantum yields (F) that the rate of desulfurization is faster in the environment that contains the sulfur “quencher.” For example the rate of desulfurization of a environment that contained dichloromethane as the solvent indicated a F=0.027 and a environment with the same solvent with the added cyclohexene “quencher” demonstrated a F=0.080. From prior photochemical experiments of similar molecules desulfurization was not reported and for the first time research has indicated the desulfurization reaction of PEITC has been occurring.

**Student(s)**  
Roskop, Luke

**Sponsor(s)**  
Gregory, Daniel

<b>Title and Abstract</b>	<b>Presentation ID</b>	<b>Time</b>	<b>Room</b>
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**Molecular Determinants of Cellular Sensitivity to Oteliones**

T55

3:00

Ballroom

Two diastereomeric 4-methylene-2-cyclohexanones, viz., Oteliones A and B, have been isolated from a freshwater plant *Ottelia alismoides*, and found to inhibit cell growth at nanomolar concentrations (Ayyad, et al., *J. Org. Chem.*, 63:8102-06, 1998; Combeau, et al., *Mol Pharmacol.*, 57:553-63, 2000). Otelione A has been shown to inhibit tubulin polymerization, accordingly, oteliones are believed to exert their cytotoxicity via committing the actively dividing cells to apoptosis. In addition to the isolation oteliones A and B, several analogues of otelione A have been prepared via chemical modifications and their cytotoxicity are reported herein. Cytotoxicity was tested using a panel of 8 human breast carcinoma cell lines (24 hr continuous exposure test) and a colony-forming assay. The cell lines exhibit differential cellular sensitivity, e.g., the LC50 values for Otelione A were 25-50 nM; O-methyl Otelione A were 50-200 nM and hydroxyotelione A were 75-3000 nM. Among the compounds tested, otelione A was found to be the most toxic compound. The modifications introduced on otelione A lead to decreased cellular sensitivity irrespective of the cell line tested. Supported by NSF 0113894.

**Student(s)**

Dechaine, Jennifer

**Sponsor(s)**

Sreerama, Ram

**Qi Gong: Chinese technique**

T56

3:00

Ballroom

This session presents the Chinese medical treatment Qi Gong. Presentation will include basic types of Qi Gong, techniques used, and benefits offered. A history will be offered as will as criticisms and controversy that currently are considered. Instructional charts will be included and presenters will be available for demonstration.

**Student(s)**

Pow, Guey Lin  
Wang, Chi Po

**Sponsor(s)**

Jorgensen, Leeann

**Is Spring Coming Earlier? An Analysis of Flowering Data from *Hepatica Americana***

T57

3:00

Ballroom

Over the past century the average mean surface temperature across the globe has increased between 0.5 and 0.7 degrees C. One of the impacts of this temperature change may be the earlier blooming of spring wildflowers. A recent study (Root et al., 2003) showed that there has been a shift of 5 days per decade over the past fifty years to earlier flowering. We analyzed herbarium specimens of *Hepatica americana* to determine if this trend is apparent to central Minnesota. Specimens from the herbaria of Saint Cloud State University, College of Saint Benedict/Saint John's University and the University of Minnesota were examined. Flowering data was collected and then statistically analyzed. Preliminary results show that during the past 80 years there is a trend for *H. americana* to flower earlier. Results from statistical analysis of these data are in progress.

**Student(s)**

Wollack, James

**Sponsor(s)**

Saupe, Stephen

Title and Abstract	Presentation ID	Time	Room
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**Synthesis of 2-propoxyethanal**

T58

3:00

Ballroom

Ethylene glycol ethers are a class of compounds with a variety of commercial uses. For example, they are found in paints, cleaners, and inks as solvents. They are also used in industrial applications. These chemicals have been assessed for toxicity in animals, and it has been found that they may cause health problems. In our bodies, ethylene glycol ethers are oxidized to form acetic acid with an aldehyde intermediate occurring in the process. It is thought that these aldehydes are causing the problems. The aldehyde that will be studied is 2-propoxyethanal. 2-propoxyethanal is synthesized from 2-propoxyethanol via the Swern oxidation reaction. Swern oxidation is an effective method to convert primary alcohols into their corresponding aldehydes via the reaction of dimethyl sulfoxide and oxalyl chloride. The synthesis, purification, and characterization of 2-propoxyethanal will be discussed. The product will be used in biological studies to assess mutagenic and toxic properties.

**Student(s)**

Hesch, Jennifer  
Jewell, Michael

**Sponsor(s)**

Gregory, Daniel

**Knowledge and Opinions on Global Warming Issues**

T59

3:00

Ballroom

It is well known that Global Warming is a hot topic in today's society. In our American society, do we ignore the topic? The Kyoto Agreement of the 1990's was aimed at curbing global emissions worldwide, the U.S., looking out for its own interests, decided to ignore it. Using a survey consisting of eleven questions, seven questions evaluating their opinion and four questions evaluating their knowledge, I was able to gain insight into the level of knowledge students have on global warming; its causes and its consequences. I was also able to gain insight into their opinions on who should be blamed and what should be done about it. The purpose of this study was to gain perspective of St. Cloud State students' opinions and knowledge of global warming. I found that 9% of responding students show knowledge of greenhouse gasses, 46% of responding students know long term impacts of rising global temperatures of global warming, and over 50% of students think the American Government should restrict and penalize corporate polluters.

**Student(s)**

Fitze, Timothy

**Sponsor(s)**

Hoff, Jean  
Simpson, Patricia

Title and Abstract	Presentation ID	Time	Room
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**Chemical Dependency and Native Americans**

T60

3:00

Ballroom

American Indians have the highest frequency of drinking problems of any ethnic group, and it was found in some populations that alcoholism is about 80% in men and about 50% in women. Why does this population of people have such staggering numbers of alcoholics and why aren't the treatment programs working very well to help them? Today there are many different models that are able to help understand the reasons. Many models were proposed by researchers to explore the various pathways to explain the high rates. Among them are the Indigenist Stress Coping model, The Sociodemographics of American Indians, and the Traumatic Life Stressors and Substance Use. The treatment process is very important to all of these issues and involves five different ways of approaching alcoholism in American Indians. One specific example that will be highlighted is The Alkali Lake Band of the Shuswap Tribe.

**Student(s)**

Hupke, Janesa

**Sponsor(s)**

Vesely, Barbara

**Induction of Aldehyde Dehydrogenase in Human Saliva by Tea**

T61

3:00

Ballroom

One of the mechanisms by which nutritional supplements, food substances and pharmaceuticals effect their cancer chemopreventive action is via induction of detoxification enzymes such as class-3 aldehyde dehydrogenase (ALDH3A1) and glutathione S-transferase (GST). These enzymes are known to detoxify carcinogens and procarcinogens. Previously we have shown induction of the above enzymes in human subjects consuming relatively large amounts of coffee and broccoli. We now report induction of ALDH3A1 in human saliva by Tea. Regular tea purchased locally (Lipton Tea) was used for the study. Consumption of relatively large quantities of tea (1000ml/day) resulted in significantly increased concentrations of ALDH3A1 in human saliva. The mechanism by which this induction occurs is not known. However, it is know that tea has polyphenols capable of inducing detoxification enzymes. Most likely, polyphenols are responsible for the induction of ALDH3A1 in human saliva. The study described herein suggests that ALDH3A1 may be used to as maker to determine the chemopreventive ability of tea.

**Student(s)**

Schaubhut, Jayne

**Sponsor(s)**

Sreerama, Ram

Title and Abstract	Presentation ID	Time	Room
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**Temperature Effects on the Lifetime of the Phi Particle**

T62

3:00

Ballroom

In my research, I explored the potential changes in the lifetime of the phi particle in a hot, dense medium. In our model, the lifetime of the phi particle decreases as the temperature of the medium increases. This result might be important for current experiments in high-energy nuclear physics, in which heavy ions are collided. These collisions create a system of subatomic particles approaching a trillion degrees Kelvin. This system lasts for a very short time, and it cannot be viewed directly. Only by examining the particle “debris” can the collision dynamics be interpreted, and the phi particle plays an important role in the overall dynamics. If the phi decay is probable in the immediate aftermath of the collision, as my research suggests, observable signals would be modified in identifiable ways.

**Student(s)**

Kakuk, Michael

**Sponsor(s)**

Haglin, Kevin

**Synthesis of Nonoxyethanal**

T63

3:00

Ballroom

Ethylene glycol ethers are colorless organic solvents with a slight sweet odor. They are completely soluble in water and have high solvent activities. The vapor pressures and rate of evaporation are generally low and decrease with increasing length of the alkyl chain. The unique properties of glycol ethers are responsible for their wide spread use as industrial and household products such as paints, inks, liquid soaps, fuels, and plastics. The target aldehyde to be synthesized and studied is nonoxyethanal. This was synthesized by treating ethylene glycol with sodium hydride and 1-bromononane. Swern oxidation was then used to convert the nonoxyethanol to nonoxyethanal. The product was characterized by 1H NMR, 13C NMR, and GC/MS. Absorption of ethylene glycol ethers into the human body is dangerous, due to the major pathway by which glycol ethers are metabolized. This includes oxidation to an alkoxyacetaldehyde by (ADH) and then to the alkoxyacetic acid by (ALDH). The pharmacokinetic and mutagenic properties along with the relative toxicological effects of nonoxyethanal will be studied further.

**Student(s)**

Hanson, Ken  
Salo, David

**Sponsor(s)**

Mechelke, Mark

Title and Abstract	Presentation ID	Time	Room
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**Identification and Characterization of Differentially Expressed Proteins in Human Breast Carcinoma MCF-7 and Its Drug-Resistant Counterpart MCF-7/UCN01**

T64

3:00

Ballroom

The differential expression of proteins found in different cell types is an important feature for cellular function. This differential expression is also a possible mechanism by which various carcinoma cells, when exposed to constant treatments of a chemotherapeutic drug, develop resistance to the drug. Mutations that allow for a carcinoma cell to differentially express a protein to counteract the chemotherapeutic drug, or which can provide an alternate metabolic pathway to the one targeted by the drug, are possible explanations as to why resistance can arise. By better understanding this process, it may be possible to prevent and reverse resistance to current chemotherapeutic drugs in various carcinoma cell lines. Our laboratory has developed a human breast carcinoma MCF-7/0 sub-line, MCF-7/UCN-01, which is resistant to UCN-01. This drug is currently being developed to treat metastatic breast carcinomas. To evaluate any protein expression differences, these two cell lines were cultured and the line perpetuated over the course of several months. Cell pellets were collected weekly and their proteins extracted. Preparation and separation of proteins from the two cell lines involved the use of gel permeation chromatography, sodium dodecylsulfate polyacrylamide gel electrophoresis (SDS-PAGE), and Matrix assisted laser desorption ionisation time-of-flight mass spectrometry (MALDI-TOF MS). Gel permeation and SDS-PAGE allow for separation of proteins based on molecular size and charge. MALDI-TOF-MS allows for identification of proteins via mass quantification and bioinformatic analysis. Proteins analyzed this way in MCF-7/0 and MCF-7/UCN-01 cells will be compared to identify the differences in protein expression. Proteins will also be compared to current protein databases for further identification. By identifying these differences, it may be possible to prevent and reverse resistance in the MCF-7/UCN01 cell line.

**Student(s)**  
Blonigen, Nicholas

**Sponsor(s)**  
Sreerama, Ram

Title and Abstract	Presentation ID	Time	Room
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**Chemical Dependency Treatment among the Homeless/Elderly**

T65

3:00

Ballroom

The rate of substance abuse among the elderly is growing at a very rapid rate. This is due to the increasing number of people that are living longer because of better health care and other factors like good food. There are also more records and research being done among the older adult. Alcohol abuse can be both genetic and environmentally determined. According to 1995 census, 12.5% of the U.S population is 65 years of age or older. 17% of adults aged 60 and older are estimated to abuse alcohol and other drugs (Stevens, 2001). The elderly are generally defined as those people who are 55 years of age or older. This poster will cover statistics on substance abuse, most reasons for abuse and the different abuse subgroups according to age of onset. Research is showing that gambling is becoming the number one addiction among the elderly even those in nursing homes. There are several reasons why adults abuse substances all of which will be covered extensively in the poster. These are depression due to old age and the implications that come with it, loneliness, for social interaction, Terminal illness and other diseases, Divorce, retirement, helplessness, loss of Jobs, death of spouse or children and their ultimate death. This study will explain in depth these reasons, the health and social risks involved in this habit and how it affects other family members and the community. The conclusion will try and focus on the different treatment methods and the role of spirituality among the elderly.

**Student(s)**  
Chege, Polly

**Sponsor(s)**  
Vesely, Barbara

**An Investigation Into the Knowledge, Opinions, and Habits of SCSU Biology 202 Students Regarding Antibiotics and Livestock**

T66

3:00

Ballroom

Antibiotic resistance is an important STS issue that must be addressed. One can look to two possible sources of producing bacterial strains that are resistant to conventional antibiotics; antibiotic abuse in human medicine and agricultural use, most importantly promoted through manufactured feed. Recent studies have discovered resistant bacterial strains of Campylobacter and Salmonella in chickens fed antibiotics. The objectives of this study are to discover the knowledge, opinions, and habits of SCSU students on livestock being fed antibiotics. In total, 127 surveys were distributed and 91 were completed. Knowledge about why livestock are being fed antibiotics, the habits of consumers related to meat purchasing and consumption, and beliefs about banning antibiotics were all defined by an eight question combination instrument. The majority of the population were female pursuing nursing and, through data collected, was well aware of the reasons antibiotics were fed to livestock; however, the significant majority had no opinion on whether the Federal Drug Administration should ban antibiotic feeding to livestock. These and other findings will be presented during the session.

**Student(s)**  
McSorley, Angela

**Sponsor(s)**  
Simpson, Patricia

Title and Abstract	Presentation ID	Time	Room
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**The Inquiry Process for K-8: Japanese and American Relations During World War Two**

T67

3:00

Ballroom

As future teachers, we have learned that in order to teach a process we must experience this process first ourselves. Inquiry is one such important learning process for students of all ages. In our presentation, we will explain what we learned through inquiry on Japanese and American relations during World War II from two perspectives: as learners and as teachers. As learners, we learned content, and as teachers, we learned the pedagogy of the inquiry process. We began by choosing a topic and narrowing our focus to four main questions of interest. We then designed our project plan, which included a timeline for our inquiry, a list of possible resources, and our research questions. We then began researching and prepared for our presentation. One of our main foci in our research was to present the lesser-known facts about the overall topic of Japanese-US relations. These included life in Japanese-American internment camps, the use of nuclear weapons in Nagasaki and Hiroshima, social actions taken against the development and use of nuclear weapons in the United States and around the world, and knowledge, if any, that the U.S. government had prior to the Pearl Harbor attack. An interesting fact that we found was that although the law stated that all people considered a “threat to national security” could be held in a military area, only people of Japanese ancestry were actually held. As prospective teachers, we learned, among other things, that we must guide students through the process of selecting questions to ensure that the questions are relevant and answers are obtainable. In summary, we learned a great deal about our topic as well as the inquiry process and how to implement it into the K-8 classroom.

**Student(s)**  
Bannister, Michelle  
Speckien, Emily

**Sponsor(s)**  
Subrahmanyam, Lalita

**The Expression of ABCG1 Transporter Proteins in Human Breast Cancer Cells**

T68

3:00

Ballroom

The ABCG1 transport protein is one of many in the ATP-Binding Cassette Transporter Superfamily. This protein is capable of the translocation of various substances, generally cholesterol, across intra- and extra-cellular membranes in a unidirectional manner. There is also a possibility of ABCG1 capacity to assist in the export of cancer chemotherapeutic agents out of cancerous cells, reducing the efficacy of the drugs, making research into the expression of ABCG1 transporter proteins in breast cancer cells relevant. To accomplish such investigation, a protein fraction from MCF7/0 cancer cells was obtained and separated by SDS-PAGE. Subsequent identification of the ABCG1 transport protein was accomplished using Western blot techniques, in which the immobilized ABCG1 proteins were detected using specific antibodies directed towards them. Detection of the presence of ABCG1 transport proteins in cancerous cells may be the first step into further studies of the role of this protein in the efflux of cancer therapy agents.

**Student(s)**  
Walker, Lindsay

**Sponsor(s)**  
Sreerama, Ram



Title and Abstract	Presentation ID	Time	Room
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**Effects of Environmental Estrogens on Fathead Minnows**

T69

3:00

Ballroom

In recent years, environmental estrogens, chemicals that mimic actions of the female hormone estrogen, have been detected in many Minnesota waters, especially below sewage treatment plant outfalls. Feminization of male fish can be a consequence of exposure to these environmental estrogens. In this study we focused on two objectives: (1) to determine the effect of environmental estrogens on male fathead minnows through histology and scoring secondary sexual characteristics and (2) to determine whether the effects of environmental estrogens can be eliminated through chemically activated filtration of contaminated waters. Male fathead minnows were exposed to six treatments: blank well water control; well water filtered through an XAD-8 column; sewage effluent; sewage effluent filtered through an XAD-8 column; 50 ng/l estradiol (positive control); and 200 micrograms per liter alkylphenol (positive control). After a 21 day exposure period, fish were sacrificed and processed for histology. Secondary sexual characteristics, tubercles and dorsal pads, were also scored and found to be similar among treatments. No intersex (gonadal tissues within the testes) was found in any of the male fish. None of the treatments exhibited gross abnormalities, however a detailed analysis of the histological sections is under way and complete results will be presented. This is the first study to provide a detailed assessment of the effects of environmentally relevant concentrations of a mixture of environmental estrogens on the reproductive health of fish.

**Student(s)**  
Larson, Jana

**Sponsor(s)**  
Schoenfuss, Heiko

**Memory & Directed Forgetting**

T70

3:00

Ballroom

Directed forgetting is when people intentionally forget something. For example, when a judge in a trial instructs juries to disregard certain testimony, the jurors have to forget that information. This project consists of two experiments. The first experiment will use the directed-forgetting paradigm to test participants' ability to purposefully forget actions. Participants will either be asked to perform the action presented by the verb-noun pair or simply read the pair. Participants will then be instructed after each pair to either remember or forget the pair. However, participants will eventually be asked to recall all words regardless of previous instructions. It is hypothesized that performing an action will make it harder to purposefully forget as opposed to just reading the action. The second experiment deals with directed forgetting for pictures of animals (that are either threatening or non-threatening). Instead of informing participants to remember or forget after each stimulus, the memory instruction (remember or forget) will be given after 12 pictures have been studied. The hypothesis is that the subjects in the directed forgetting condition will remember less of the first list than those in the control condition. Implications for directed forgetting for daily living will be discussed.

**Student(s)**  
Rimstad, Grace  
Vogt, Vincent

**Sponsor(s)**  
Valdes, Leslie

Title and Abstract	Presentation ID	Time	Room
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<b>The Effects of Human Activity on the Water Quality and Diatom Populations in the St. Cloud, MN Granite Quarries</b>	T71	3:00	Ballroom
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Eutrophication is the successive change of an aquatic ecosystem towards greater productivity as a result of outside influences. A major concern is that this productivity can cause the ecosystem to eventually crash in diversity and stability. St. Cloud Minnesota has many deep ponds left behind by the mining industry which long supported the local economy. Some of these quarry lakes are used for recreational purposes, and there is a concern that this is affecting their ecosystems. The purpose of this experiment was to see if the human influence on these quarries was notable in changes in productivity of the lakes over time, as measured by various tests on the sediment deposits in the lakes. Our hypothesis was that there would be a notable change in productivity in recent sediments from a quarry receiving heavy recreational use, a swimming quarry, when compared to a control quarry, one not opened for swimming, as similar in size as available. The results showed much increased levels of productivity in recent sediments in the swimming quarry, likely due to human impacts. However, it appears that physical features of a quarry are more indicative of eutrophication, due to the borderline eutrophic conditions sustained in the non-swimming quarry, the next largest in the park, but still one-quarter the size of the other.

**Student(s)**  
 Assenmacher, Mike  
 Benham, Mike  
 Howard, Erin

**Sponsor(s)**  
 Julius, Matthew  
 Turner, Sandra

<b>Cranial Anatomy of <i>Sicyopterus Stimpsoni</i></b>	T72	3:00	Ballroom
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*Sicyopterus stimpsoni* is a unique species of the Hawaiian freshwater goby in undergoing a dramatic cranial metamorphosis prior to acquiring the ability to climb large waterfalls (up to 100 m tall) on the Hawaiian islands. The need for climbing waterfalls is the result of the amphidromous life cycle with the adults living and reproducing in the mid to upper Hawaiian streams and the larvae being swept into the ocean by the strong currents prevalent in these steep gradient of the streams. After a six-month of larval period in the ocean, postlarvae return back into freshwaters following flash flood events. Upon arrival in the stream estuaries, *S. stimpsoni* undergoes a metamorphosis that results in a greatly enlarged upper lip and ventral mouth position. As a result of the metamorphosis this species acquires the ability to use the mouth as a secondary locomotory organ in climbing vertical waterfall surfaces. The purpose of this research was to provide a detailed description of the cranial anatomy of *S. stimpsoni*, which will serve as a baseline to investigate the anatomical changes occurring during the metamorphosis.

**Student(s)**  
 Maie, Takashi

**Sponsor(s)**  
 Schoenfuss, Heiko

Title and Abstract	Presentation ID	Time	Room
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**Construction of a Low-Cost, Homemade Analog to Digital Converter for Incorporation into the Undergraduate Chemistry Curriculum**

T73

3:00

Ballroom

We demonstrate efforts at the design and construction of a programmable microchip based, Analog to Digital (A/D) circuit for recording of voltages in the 0-5 V range. These efforts are aimed at providing a method by which we can mass produce these devices in-house at reduced cost for eventual use in the Chemistry Department's curriculum. We envision these devices to include service to the General Chemistry laboratory setting, along with integration into existing analytical instrumentation including several gas chromatographs and a high performance liquid chromatograph (HPLC) system all of which currently use older strip chart devices. We provide our circuit layout, associated microchip programming and the Visual Basic computer interface, along with a manifest of key electronic parts that constitute the A/D circuit.

**Student(s)**

Henderson, Adam

**Sponsor(s)**

Dvorak, Michael

**The Effect of Duration Control on Prospective Time Estimation**

T74

3:00

Ballroom

Perceived control may regulate the attention paid to an internal clock, altering the accuracy of time estimates. Duration length also affects estimation accuracy (Ryan & Robey, 2002). Two groups of undergraduate students viewed six abstract computer graphics. In one group (26 Ss), viewing times were self-paced. Viewing times were divided into long and short durations via a median split. In a second group (24 Ss), viewing time lengths were predetermined as either long (M = 5.90 seconds) or short (M = 28.0 seconds). Viewing times were estimated verbally under prospective conditions, where subjects were forewarned that temporal judgments were needed. Self-pacing did not affect the accuracy of time estimation, and no interactions between variables were observed. In the self-paced group, long durations were estimated significantly less accurately than short ones ( $F(1,24) = 9.558, p < 0.005$ ). Implications regarding attention and an internal clock are discussed.

**Student(s)**

Lunsman, Melissa

**Sponsor(s)**

Illies, Jody

Title and Abstract	Presentation ID	Time	Room
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**Synthesis of Ethylene Glycol Ether Aldehydes**

T75

3:00

Ballroom

Ethylene glycol ethers are used in a variety of industrial and household products including paints, varnishes, cosmetics, and cleaning agents. Absorption of these compounds may be harmful to humans due to the toxic nature of the aldehyde metabolite. The aldehyde selected to study was 2-phenylmethoxyethanal, which was synthesized in a two-step sequence. Commercially available ethylene glycol was treated with sodium hydride and benzyl bromide to prepare 2-phenylmethoxyethanol. A Swern oxidation was then performed to convert the mono-substituted ethylene glycol ether into its corresponding aldehyde, 2-phenylmethoxyethanal. All of the products were purified using silica gel column chromatography and characterized by <sup>1</sup>H NMR, <sup>13</sup>C NMR, and GC/MS. With the synthesis phase complete, the pharmacokinetic and mutagenic properties along with the relative toxicological effects of this aldehyde will be studied.

**Student(s)**  
LaMourea, Jennifer  
Wessel, Emily

**Sponsor(s)**  
Mechelke, Mark

**Do Hate Crimes Deserve Longer Sentences?**

T76

3:00

Ballroom

People have made attributions whenever they have tried to determine the causes of others' behaviors. Many studies have used mock juries or jury-like situations to examine the attributions of criminal liability, which is assigning punishments to criminal offenders (e.g. Sanderson, Zanna, & Darley, 2000). These researchers found that high-severity crimes were given longer sentences by participants than low-severity crimes. Iganski (2001) found that hate crimes were seen as more damaging to society and the victims, and harsher punishments were therefore justified. This study looked at whether a hate crime was viewed as deserving of a longer sentence than a comparable crime not motivated by hate. Participants suggested a significantly longer sentence for the hate crime, indicating that this type of crime is deserving of a harsher punishment. Based on these results, convicted hate crime offenders should be sentenced to longer periods of incarceration than offenders convicted of similar crimes not motivated by hate.

**Student(s)**  
Leslie, Denise

**Sponsor(s)**  
Valdes, Leslie

Title and Abstract	Presentation ID	Time	Room
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<b>Comparison of Scheduled and Non Scheduled Tests on Student WebCT Access</b>	T77	3:00	Ballroom
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A variety of studies looking at student performance on computer based courses (Crosbie and Kelly, 1993; Kritch and Bostow, 1998; Kritch and Bostow, 1999; Pear and Novak, 1996; and Wooyong and Reiser, 2000) have shown that students often procrastinate in accessing materials and completing assignments. Student procrastination has been attributed to many factors including course design and personality. Rather than personality, Rudrud and Rudrud (2001) reported that undergraduate students access WebCT on a fixed interval pattern of responding, with high level of access preceding the administration of a bi-weekly test. The purpose of this paper is to exam the differences in patterns of responding between students who are on a fixed bi-weekly test schedule and students who take tests on a non-scheduled basis. Students who took tests on a fixed schedule accessed material on a more regular basis than students who had non-scheduled tests. Students on the non-scheduled basis exhibited characteristic bursts of responding.

**Student(s)**  
Fouquette, Charryse  
Rudrud, Emily

**Sponsor(s)**  
Rudrud, Eric

<b>Synthesis of 2-phenoxyethanal</b>	T78	3:00	Ballroom
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Millions of pounds of ethylene glycol ethers are produced in the United States each year. They are commonly found in household products including aerosols and cleaning agents. Certain ethylene glycol ethers have shown adverse side effects in animal studies such as hemolytic anemia, liver and kidney damage. It is proposed that these side effects are a result of the aldehydes formed in the biological degradation of these ethylene glycol ethers. This research is focused on the preparation and identification of 2-phenoxyethanal. This will be accomplished via a Swern Oxidation of 2-phenoxyethanol. The Swern Oxidation is a very mild oxidation procedure that uses dimethyl sulfoxide and oxalyl chloride to convert primary alcohols into their corresponding aldehyde. The 2-phenoxyethanal will be used to study the metabolism of the aldehyde to the corresponding carboxylic acid in the body. The specific techniques used to synthesize, purify and characterize the 2-phenoxyethanal will be discussed.

**Student(s)**  
Kuyomba, Uchoti  
Smith, Nancy

**Sponsor(s)**  
Gregory, Daniel

Title and Abstract	Presentation ID	Time	Room
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**Monitoring the Expression of Class 3-Aldehyde Dehydrogenase (ALDH-3) Under Oxidative Stress Induced By Cadmium**

T79

3:00

Ballroom

Environmental contamination by Cadmium (Cd) has been shown to cause oxidative stress and tissue damage in aquatic and soil organisms. The counter protective mechanisms used to alleviate this stress by these organisms include the overexpression of various detoxification genes including Class 3-Aldehyde Dehydrogenase (ALDH-3). Whether such a phenomenon occurs in humans is not known. Accordingly, this study monitors the toxicity of cadmium, and the expression of detoxification genes [ALDH-3 and Glutathione S-Transferase (GST)] in human breast carcinoma MCF-7 model cell line. The cells were grown in monolayer cultures in the presence of 1 - 20  $\mu$ M of CdCl<sub>2</sub> for a period of 96 hours and then harvested and analyzed. Cd inhibited growth of MCF-7 cells and growth inhibition was concentration dependant. Reverse transcription-polymerase chain reaction analysis showed a dramatic increase in the expression of ALDH-3 and this too was concentration dependant. Kinetic assays indicated an increase in GST activity in a concentration dependant manner. These results indicate that Cd is toxic to cells and it induces the expression of detoxification genes (ALDH-3 and GST).

**Student(s)**  
Lee, Eu Han

**Sponsor(s)**  
Sreerama, Ram

**Orographic Flash Floods**

T80

3:00

Ballroom

Flash floods are the leading cause of severe weather related deaths in the United States. A large number of these floods are created due to forcing by local topography. Lin et al. (2001) identifies four of the common ingredients in orographic flash floods based on eleven case studies. This small sample size makes drawing broad generalizations difficult. Therefore, the purpose of this research was to perform additional case studies to either extend the basis of Lin's ingredients or to determine that some of them are unnecessary. Case studies were performed for three cases of orographically induced flash floods: the Las Vegas, NV flood of July 8, 1999; the Oroville, WA flood of July 12, 2001; and the El Paso, TX flood of August 2, 2002. For each case, surface and upper-air maps were plotted from raw observational data and subjectively analyzed. Atmospheric soundings were plotted from raw data, while station time-series were computer-generated. Radar and satellite imagery were also obtained from historical archives. Preliminary results showed that three of Lin's ingredients clearly appear in each case: (1) a steep mountain, (2) an unstable airmass, and (3) a quasi-stationary, large-scale system that slows the storm over the threat area. The fourth ingredient, a very moist, low-level jet, was difficult to identify in two of the three cases. Further investigation, along with better observations, could determine how important this feature is to the formation of orographic flash floods.

**Student(s)**  
Billings, Brian

**Sponsor(s)**  
Hansen, Anthony

Title and Abstract	Presentation ID	Time	Room
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**The Late Wisconsinan History of the Upper Mississippi River and its Tributaries between Brainerd and St. Cloud, Minnesota**

T81

3:00

Ballroom

The average gradient of the modern Mississippi river between Brainerd and St. Cloud, Minnesota is 2.6 feet per mile, the gradient on the associated depositional terrace is 2.5 feet per mile and the gradient of the ancient channel, now occupied by the depositional terrace, is 2.5 feet per mile. The gradients of the tributary streams joining the Mississippi river in the study area ranges from 7.6 feet per mile to 2.9 feet per mile. Four major glacial lobes were responsible for the alteration of the ancient Mississippi River channel-way and filling that channel-way with outwash derived from the Wadena, Superior, Rainy and Des Moines lobes. Many sublobes were involved as well including the Pierz and Brainerd sublobes. Precambrian structural elements appear to play a significant role in the location of some of the tributary streams and on the gradient of the terrace surface. The depositional terrace following the modern Mississippi River is on average three miles wide, has sediments up to eighty feet in thickness and extends down to the Precambrian bedrock surface in several localities and may have occupied a location to the east of the current channel just north of St. Cloud. The modern channel is entrenched an average of 42.5 feet below the depositional river terrace. An analysis of the gradient of the Crow Wing River suggests that it was the primary source of melt-water during the development of the modern Mississippi channel. The Nokasippi River, a tributary stream to the east of the Mississippi, may represent a tunnel valley that was formed beneath the ice sheet, later occupied by a prominent melt-water drainage-way from the Mille Lac moraine, which follows two prominently mapped Precambrian thrust faults along a significant part of its pathway.

**Student(s)**  
Reisinger, Mellissa  
Thompson, Kirsten

**Sponsor(s)**  
Pekarek, Al

**Prescription Drug Abuse**

T82

3:00

Ballroom

At least half of all the Americans with mental illness abuse illicit drugs. Some people with certain mental illnesses such as Schizophrenia, Borderline Personality Disorder and other AXIS II personality disorders are more likely to develop a chemical dependency. There is a severe negative effect interaction between drug and alcohol abuse and the vulnerable brain, as well as the brain which has already become disordered in its functioning due to mental illness. It is also proven that using/abusing illicit chemical actually can cause the onset of mental illness. Many advancements have been made on the knowledge about dual diagnosis. Treatment for persons with dual diagnosis is complex. The treatment focuses on not one diagnosis over the other, but integrates the treatment to be more effective. There has been much research on MICA (mental ill chemical abuser addicted) which has created phases and steps to maximize treatment efforts. Phase one starts by getting the client to realize they need help, then once treatment has begun the second phase is having the client recognize they have a problem and hopefully they become motivated to take action, and the last phase is taking movement toward abstinence. These programs are cost effective: they unite service systems and referral sources; train and cross-train existing staff; and utilize existing facilities. As a result, the quality and availability of care for persons with dual diagnosis is greatly improving.

**Student(s)**  
Richter, Devon

**Sponsor(s)**  
Vesely, Barbara

Title and Abstract	Presentation ID	Time	Room
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**Knowledge and Opinions of Arsenic in Drinking Water**

T84

3:00

Ballroom

A survey was used to determine the knowledge and opinions of earth science and psychology students at St. Cloud State University in regards to arsenic in drinking water. The two groups were selected to determine whether earth science students were more knowledgeable about this issue than psychology students. A combination questionnaire/opinionnaire was given to each group. Out of a possible 24 correct answers on the knowledge portion, 104 psychology student respondents scored an average score of 10.41; 126 earth science student respondents scored an average score of 10.68. No significant difference was found in the compared averages. When asked what the maximum that they are willing to do or spend to assure their drinking water has a safe level of arsenic, 46% of the psychology students and 48% of earth science students answered that they would buy a water filter. When asked if their community proposed a bill to increase their taxes by 8% to provide funding to reduce their public drinking water system's arsenic level below the national standard, 42% of 106 psychology student respondents answered they would vote yes, 39% answered they would vote no, and 19% answered that they do not vote; of the 126 earth science student respondents 34% answered that they would vote yes, 48% answered that they would vote no, and 18% answered that they do not vote. I expected the earth science students to score significantly higher on the knowledge portion than the psychology students. However, the percent difference of 2.5% was far lower than expected.

**Student(s)**  
Sundin, Paul

**Sponsor(s)**  
Hoff, Jean  
Simpson, Patricia

**The Relationship Between Experience and Computer Anxiety**

T85

3:00

Ballroom

The main interest of this study was to explore computer anxiety among undergraduate students. The two predictors of openness to experience and openness to modern technology, along with the demographic variables of age and gender were used for this purpose. Data were collected from undergraduate psychology students. It was expected that openness to modern technology would predict the amount of anxiety felt around technology, in this case computers, better than just openness to experience. Openness to experience and openness to modern technology were negatively correlated with computer anxiety. Thus, students who are more open to new experiences in general and more open to modern technology specifically feel less computer anxiety. Openness to modern technology was more related, as would be expected. In general, females felt significantly more computer anxiety than males. Older students were less open to modern technology than younger students; however, despite this, older students did not feel more computer anxiety.

**Student(s)**  
Madland, Nick

**Sponsor(s)**  
Illies, Jody



Title and Abstract	Presentation ID	Time	Room
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**Working Memory: The Effects of Mnemonics on Reading Comprehension**

T86

3:00

Ballroom

A mental list of items to purchase at the store, a phone number or directions to an acquaintance's house are a few examples of the information we store in our working memory (WM). WM is the brief, immediate memory for material we are currently processing. The ability to store more information would enhance our lives and eliminate anxiety and stresses associated with forgetting. Recall strategies called mnemonics can be implemented to help improve working memory. The mnemonic device, the method of loci associates items to be learned with a series of physical locations. Loci works best when a list of items in a specific order requires learning. This study investigates the effects of a mnemonic device, loci, on working memory capacity. Theory suggests that the use of mnemonics will have benefits for people with shorter working memory capacity since mnemonics supplies cues that will allow the participants to better recall information.

**Student(s)**  
 Jadwinski, Victoria  
 Liska, Michelle

**Sponsor(s)**  
 Valdes, Leslie

**Comparison of Undergraduate and Graduate Student Access of WebCT Courses**

T87

3:00

Ballroom

A variety of studies regarding student performance on computer based courses (Crosbie and Kelly, 1993; Kritch and Bostow, 1998; Kritch and Bostow, 1999; Pear and Novak, 1996; and Wooyong and Reiser, 2000) have shown that students often procrastinate in accessing materials and completing assignments. Student procrastination has been attributed to many factors including course design and personality. Rather than personality, Rudrud and Rudrud (2001) reported that undergraduate students access WebCT on a fixed interval pattern of responding, with high level of access preceding the administration of a bi-weekly test. The purpose of this paper is to examine the differences in patterns of responding between graduate students and undergraduate students. Graduate students access course material earlier than undergraduate students.

**Student(s)**  
 Rudrud, Emily  
 Fouquette, Charryse

**Sponsor(s)**  
 Rudrud, Eric

Title and Abstract	Presentation ID	Time	Room
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<b>Effects of False Memory on Source Monitoring and Wishful Thinking</b>	T88	3:00	Ballroom
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Memories are a part of everyone’s lives. People tend to see or remember the more positive aspects of life (Boucher & Osgood, 1969). This is called wishful thinking. Also individuals' memory include information about how they know certain things. This is called source monitoring. Our study examines the effects of wishful thinking and source monitoring on false recall. Weather predictions that were either consistent or inconsistent with one’s goals were used. The weather predictions were also related to a source that was considered either reliable or unreliable. The scenarios either included words associated to a non-presented critical word such as snow. Participants were then given a recognition test, and filled out a questionnaire. In the experimental group scenarios, the critical word was left out in order to assess false recall. It is hypothesized that more false recognition will occur with in the scenarios that are goal consistent, because people more often remember positive events. It is also believed that the more positive scenarios will be related to the more reliable source.

**Student(s)**  
 Crownover, Angie  
 Matros, Nicole

**Sponsor(s)**  
 Valdes, Leslie

<b>Depression and Chemical Dependency</b>	T89	3:00	Ballroom
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Hasen, Liu, Nunes, McCloud, Samet, and Endicott (2002) have concluded that the timing of depressive episodes relative to substance dependence served as an important factor in the remission and relapse of substance dependence and substance use. Observations were made on the effects of major depressive disorder (MDD) on the outcome of substance dependence under three circumstances: (1) lifetime onset of MDD prior to lifetime onset of dependence onset, (2) current MDD occurring during a period of abstinence, and (3) current MDD during substance use that exceeded the expected effects of intoxication or withdrawal (e.g., Hasen et al., 2002). With comparison to other research, their findings are supported with other evidence of a high correlation among individuals who suffer from MDD to also incurr, already have, or are in withdrawal from a substance abuse problem.

**Student(s)**  
 Rucks, Sarah

**Sponsor(s)**  
 Barbara Vesely

<b>Title and Abstract</b>	<b>Presentation ID</b>	<b>Time</b>	<b>Room</b>
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**Remote Controlled HAM Radio Repeater**

T91

3:00

Ballroom

Our project gives an operator the capability of remotely controlling the amateur radio repeater installed at Saint Cloud State University. A repeater amplifies weak signals and retransmits them over a wide area. The operator uses a handheld transmitter/receiver (transceiver) to send tones, to the repeater. (The tones are very similar to those used on a touch tone telephone.) A printed circuit board with a microcontroller integrated circuit, a firmware computer program and additional circuitry has been designed and installed in the repeater. The following repeater features can be controlled: transmission of an identifying signal in Morse code or voice, turn the transmitter on or off (the receiver stays on), turn tone access on or off, compile and report statistics of use. All of the features will be under password control.

**Student(s)**

Qureshi, Ali  
Vierzba, Joe

**Sponsor(s)**

Heneghan, Mike

**Metabolism of Ethylene Glycol Ethers**

T92

3:00

Ballroom

Ethylene glycol ethers are common industrial solvents as well as constituents of an array of household products. Environmental exposure to these compounds has been shown to cause teratogenic, spermatotoxic, and hematotoxic effects in animal as well as human studies. Alcohol dehydrogenases and ALDHs have been implicated in the conversion of ethylene glycol ethers to their respective aldehydes and acids, each of which is implicated in the above toxicities. My specific research interest is to determine whether polymorphic human class 1 and class 2 aldehyde dehydrogenase isozymes (ALDH1A1 and ALDH2) catalyze differential biotransformation of methoxy and ethoxy ethylene glycol ether aldehydes. Human ALDH1A1 and ALDH2 have been purified by chromatography procedures from clones expressing these enzymes in E. coli bacteria. The aldehydes are being synthesized to determine their preference as substrates for ALDH1A1 and ALDH2 via the determination of their kinetic constants.

**Student(s)**

Powless, Hadley

**Sponsor(s)**

Sreerama, Ram

**Effects of Vanadium Complexes on Human Carcinoma Cells**

T93

3:00

Ballroom

Modern chemotherapeutic drugs such as Cisplatin that are used for lung, colon, breast, and brain tumors induce resistance in the human body through the overexpression of the glutathione system. Various metal complexes are tested to discover treatments that circumvent resistance. These complexes, mainly Vanadium, show promise in this effect and also as alternative individualized treatments. A range of concentrations of various complexes are tested against human breast carcinoma cell models. The plot of log surviving fraction vs concentrations of drug used will be used to determine both the LC90 and the LC50 to determine effectiveness.

**Student(s)**

Wilcox, Lane

**Sponsor(s)**

Sreerama, Ram

Title and Abstract	Presentation ID	Time	Room
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**Medical Trends in Chemical Dependency Treatment**

T94

3:00

Ballroom

This paper will explore the current medical and pharmacological treatments available to alcoholics and drug addicts. In today's tightened economic times and the presence of managed care providers, traditional treatment programs no longer have the financial backing or luxury to maintain clients in long term treatment programs. Because of these issues the medical and chemical dependency professions are being forced to research, develop and utilize more effective pharmacological methods of maintaining long term abstinence. Disulfiram(Antabuse), Naltrexone(Revia) and Acamproscate are just a few of the medications being used in the United States and abroad to treat alcoholism and opiate addictions. (Journal of Family Practice, June 2002 v51:6pg.577) In addition both methadone and levd-alpha-acetyl-methadol(LAAM) are currently being dispensed by specially licensed free standing clinic throughout the United States and other countries. On the horizon, researchers, doctors and pharmacological companies are testing a variety of medications and methods to optimize the use of chemical dependency dollars. Approximately \$40 million dollars is spent annually to study the effects of these treatments on addiction (New Medical Therapies-Addiction, Summer 2001 (page1). Today there are seven drugs in the research pipeline for drug and alcohol addiction. There is also the possibility of utilizing gamma-hydroxybutyrate(GHB) for the treatment of alcoholism. One of the most interesting treatment approaches to arise over the past several years has been the use of rapid opiate detoxification (R.O.D.). While still in the infancy stages in the United States this procedure has been used in Austria, Israel, Spain and Great Britain since as early as 1988.

**Student(s)**  
Jorgenson, Sandra

**Sponsor(s)**  
Vesely, Barbara

**SIMBA (Semi-Intelligent Maze Breaking Automaton)**

T95

3:00

Ballroom

S.I.M.B.A. is a robot designed to assist a human operator in driving S.I.M.B.A. through a maze or to, without human interaction, "break" (solve) a given maze. The technology of today's robot is drifting away from the "unintelligent" robot programmed to perform a specific task (such as a robotic assembly line) to machines with decision making capabilities. One example of this new "intelligent" robot is the Mars Pathfinder. Due to the transmission delay between Mars and Earth instantaneous human interaction was impossible, therefore the robot required the ability to make simple yet smart decisions. S.I.M.B.A. uses external sensors and position feedback to prevent an operator from unintentionally driving the robot into a wall of the maze. This aspect is comparable to Pathfinder's safety feature that kept it from colliding with rocks or other surface inconsistencies. S.I.M.B.A.'s motor driving system is controlled by the user through a sophisticated, but intuitive graphical computer interface. The robot's position relative to the walls is visually represented within the computer interface. The combination of the discussed features enables a human to safely and efficiently guide S.I.M.B.A. through a maze.

**Student(s)**  
Hanson, Colin  
Khaled, Pervez  
Meemken, Mike

**Sponsor(s)**  
Hou, Ling

Title and Abstract	Presentation ID	Time	Room
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**Application of the First Law of Thermodynamics to Maximum Temperature Forecasting**

T97

3:00

Ballroom

Most often-maximum temperature forecasts are made in a qualitative rather than quantitative fashion. Rather than roughly estimate the effects of cloud cover and adjusting numerical model output, this research attempted to quantify the surface heat budget. This was done employing the First Law of Thermodynamics to the heating of the boundary layer of the atmosphere. The model was applied to real atmospheric data. The model forecast maximum temperatures were then compared to actual recorded maximum temperatures to study the validity of this model. A pilot study was also conducted accounting for variables, which induce much of the error. The results show that the model may be employed operationally under conditions where extremities of the atmosphere are absent.

**Student(s)**

Sundgaard, Sven

**Sponsor(s)**

Hansen, Anthony

**Multichannel CDMA Music Entertainment System**

T98

3:00

Ballroom

Music storage and playback is an important part of home entertainment system. The purpose of our project is to simplify the home entertainment system by using a single device to store all music. In our design, the music is stored in a computer and multiple different songs are selected for simultaneous playback. The songs are then transmitted from the computer throughout the house. Each receiver then selects which one of the transmitted songs to play. The number of songs transmitted is limited to the data rate of the wireless connection but the number of receivers is unlimited. The separation of songs is accomplished by using CDMA technology. Different songs are distinguished by Pseudo-Random Noise Codes (PN Codes). In the computer, the songs selected for playback are encoded with PN codes, one code for each song. The encoded songs are then summed together to form the transmitted bit stream. At the receiver, a song is extracted from the bit stream by the same PN code that was used to encode the song. Users can then choose different songs by selecting a different PN code at receiver. Our implementation of this system uses five main components: A computer to store the songs in MP3 format, to control the song selection, and to do encoding; A set of transceivers for wireless transmission; A Digital Signal Processing board on each receiver for recovering a selected song from the simultaneous song transmission; MP3 decoder devices and speakers.

**Student(s)**

Wuollet, Eric  
Xiaonan, Shen  
Yang, Ye

**Sponsor(s)**

Yao, Aiping

Title and Abstract	Presentation ID	Time	Room
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<b>Motility Test for Hawaiian Gobies</b>	T99	3:00	Ballroom
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Three species of Hawaiian freshwater gobies have evolved the ability to climb waterfalls up to 400 m tall. The need for climbing waterfalls is the result of the amphidromous life cycle of these species with adult fishes living and reproducing in the mid to upper stream reaches of Hawaiian streams and the larvae being swept into the ocean by the strong currents prevalent in these steep gradient streams. After an oceanic larval period, postlarvae return into freshwaters following flash flood events. Two different climbing styles have been described previously: (1) a “power burst climbing style employed by *Lentipes concolor* and *Awaous guamensis* which is characterized by rapid bouts of swimming interrupted by rest periods during which the animal clings to the waterfall surface using its pelvic sucking disk (a feature common to all gobies) and (2) “inching-up climbing”, the climbing style of *Sicyopterus stimpsoni* in which animals alternately attach to the waterfall surface using either their pelvic sucking disk or sucking mouth. The purpose of this research was to determine through high speed video recordings (1) whether climbing performance in each species varies with climbing substrate; and (2) whether the three species perform differently on the same surface. Results of this study will be relevant to conservation efforts in providing recommendations for surface structures of man-made obstacles within Hawaiian freshwater streams.

<b>Student(s)</b> Rai, Ruhi	<b>Sponsor(s)</b> Schoenfuss, Heiko
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<b>The Depleting Consciousness of Depleted Uranium</b>	T100	3:00	Ballroom
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The myth remains that the 1991 Persian Gulf War was a clean and easy war. The war was viewed on “mainstream” media as a conflict from 30,000 feet. The images of precision, laser guided munitions, “Smart” bombs and the “Patriot” missile filled our heads. The lack of American casualties during Desert Shield/Storm fed the myth of the clean and easy war. Our Gulf War Vets came home to enormous parades and ceremonies and with several medals on their chests. President George Bush Senior welcomed the troop’s home and stated that “we kicked the Vietnam syndrome”. Unfortunately, they also came back stricken with a disease, “Gulf War Syndrome”. One of the main causes of “Gulf War Syndrome” is their exposure to Depleted Uranium. Depleted Uranium was used in multiple calibers of ammunition during the Gulf War. The effect of this ammunition is being felt by not only our Gulf War Veterans, but also the citizens of Iraq.

<b>Student(s)</b> Kimball, Harold	<b>Sponsor(s)</b> Benjamin, Jesse
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Title and Abstract	Presentation ID	Time	Room
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**Spot Welding Machine Design**

U1

5:30

Mississippi

The ever increasing need of today’s manufacturing processes require industries to restructure their production processes to stay competitive. One such area is the chest freezer line at Electrolux Home Products. A current process includes manually spot welding a tapping plate into the chest freezer door shell. The function of this tapping plate is to provide rigidity and a medium for which hinges will be attached. Currently three operators manually apply a total of twelve spot welds to each door shell to complete the assembly. The objective of this project is to reduce cycle time and to eliminate unnecessary labor. This will be accomplished by designing a semi automated spot welding machine that will meet all the objectives while improving production. This machine will be designed to optimize the welding schedule to reduce the number of spot welds applied. The machine is free standing and is mechanized through pneumatic cylinders controlled by a welding unit interfaced to the operator.

**Student(s)**

Guggenberger, Joseph  
Tran, Long

**Sponsor(s)**

Miller, Kenneth

**Comparing the Performance of Heuristics for the Rectilinear Steiner Arborescence Problem**

U2

5:45

Mississippi

Given a set P of points, a Rectilinear Steiner Arborescence (RSA) is a directed tree rooted at the origin, containing all points in P, and composed only of horizontal and vertical edges oriented from left to right, or from bottom to top. The root represents the source of the signal and the points in P represent the sinks that have to receive the signal. A minimum Rectilinear Steiner Arborescence (MRSA) is an RSA with minimum length. It has been proven that finding the MRSA is an NP complete problem, implying that any algorithm that finds the MRSA will most probably take too much time to be practical. Several researchers have studied the problem. In 1988, Rao et. al. gave an algorithm that computed an RSA with length at most twice the maximum. However, no efficient algorithm is known that produces an RSA with bounded error in the presence of obstacles. Recently, an  $O(n \log n)$  algorithm has been proposed by Sarnath, which computes an RSA that is at most twice the length of the minimum RSA. Unlike other algorithms, this algorithm has been extended to deal with the presence of obstacles. Algorithms were tested with different sets of data (i.e. real data from industry, data from other researchers and randomly generated data) and the results were compared.

**Student(s)**

Ba, Mohamed  
Islam, Sardar  
Maiga, Aliou

**Sponsor(s)**

Ramnath, Sarnath

Title and Abstract	Presentation ID	Time	Room
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**The Native American Church's Peyote Ceremony: Its Enactment and Relationship to Other Religious Ceremonies**

V1

5:00

North  
Voyageurs

What is the Native American Church and what part does peyote play in its religious observance? How can rituals in the Native American Church be compared to rituals in other religions? These questions will be explored through the actual enactment of the ceremony with explanation at intervals. Come to this presentation prepared to participate.

**Student(s)**  
Lambert, Wanda  
Prom, Jason  
Ross, Stephanie  
Smith, Kathryn

**Sponsor(s)**  
Pryately, Margaret

**International Hot Spots and the Contact Model: Can We Solve World Conflict?**

W1

5:00

South  
Voyageurs

This panel will explore the long-term conflicts in Argentina, Northern Ireland and Israel and the beginnings of the current conflict between Arab nations and the U.S. Students will apply a contact model to these situations to examine if they can be improved through conflict resolution theory. Students will make recommendations for future directions.

**Student(s)**  
Edholm, Erin  
Gobler, Jodie  
Judd, Owais  
Lambert, Laura

**Sponsor(s)**  
Pryately, Margaret

**Visual Comparison of South African-U.S. Student Life**

X1

5:00

Lady's Slipper

How much do you really know about South Africa? Well, this is your chance to meet a group of students who had the chance to go to South Africa for spring break. Our panel will present a comparative perspective of student life at two universities: University of Port Elizabeth in South Africa and St. Cloud State University. Using video footage, pictures and other visual displays, we will show similarities and differences in student life, activities and interactions in the two institutions.

**Student(s)**  
Barnett, Rodriguez L  
Kwamin, Marian  
Nhim, Heang  
Tes, Chantha  
Yang, Eileen

**Sponsor(s)**  
Johnson, Robert



# Student Index

<b>Student</b>	<b>Presentation Number</b>	<b>Time</b>	<b>Room</b>
Ackerman, Melissa	C1	11:00	North Glacier
Akhunji, Bakhtiar	T17	3:00	Ballroom
Alexander, Carlos	T12	3:00	Ballroom
Anderson, Hiliary	T46	3:00	Ballroom
Anderson, Meggann	T24	3:00	Ballroom
Angerhofer, Kristan	T24	3:00	Ballroom
Annett, Angelene	S5	3:00	South Voyageurs
Arnold, Ursula	T16	3:00	Ballroom
Assenmacher, Mike	T71	3:00	Ballroom
	T40	3:00	Ballroom
Atkinson, Travis	Q1	2:00	St. Croix
Aysta, Alaine	O1	2:00	Lady's Slipper
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Babski, Jill	D1	11:00	South Glacier
Bannister, Michelle	T67	3:00	Ballroom
Barnett, Rodriguez L	X1	5:00	Lady's Slipper
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Benham, Mike	T71	3:00	Ballroom
Beniek, Stefanie	P3	2:30	Mississippi
Ben-Yehuda, Paul	C2	11:30	North Glacier
Billings, Brian	T80	3:00	Ballroom
Blonigen, Nicholas	T64	3:00	Ballroom
Bosak, Holly	R2	2:20	North Voyageurs
Bouvet, Nathan	G1	11:00	St. Croix
Boyd, Travis	T25	3:00	Ballroom
Brandt, Amanda	T6	3:00	Ballroom
Bruestle, Beth	S2	2:15	South Voyageurs
Brummer, Mark R.	H5	12:00	North Voyageurs
Buchman, Heather	Q1	2:00	St. Croix
Bushee, Scott	B1	11:00	Ballroom C
	B2	11:15	Ballroom C

<b>Student</b>	<b>Presentation Number</b>	<b>Time</b>	<b>Room</b>
Carlson, Josh	R3	2:40	North Voyageurs
Casey, Annie	T24	3:00	Ballroom
Chan, Wen How	T28	3:00	Ballroom
Chandramala, Selvarajah	T3	3:00	Ballroom
Chege, Polly	T65	3:00	Ballroom
Chichosz, Jeff	K1	2:00	Ballroom B
Chien, Shu-Fen	P5	3:00	Mississippi
Cleland, Megan	T47	3:00	Ballroom
Crownover, Angie	T88	3:00	Ballroom
Crumpler, Heidi	N3	2:40	South Glacier
Curtis, Nicholas	N2	2:20	South Glacier
Darwanto, Agus	M1	2:00	North Glacier
Davis, Harry	M1	2:00	North Glacier
Dechaine, Jennifer	T55	3:00	Ballroom
Dinham, William	T12	3:00	Ballroom
Dolan, Sean	B3	11:30	Ballroom C
Dolence, Nicole	L1	2:00	Ballroom C
Dordal, William	Q1	2:00	St. Croix
Dwyer, Cecelia	M5	3:00	North Glacier
	M6	3:15	North Glacier
Edholm, Erin	W1	5:00	South Voyageurs
Eggebrech, Jennifer	Q1	2:00	St. Croix
Esselman, Michael	T14	3:00	Ballroom
Exsted, Robin	T49	3:00	Ballroom
Ferrell, Marie	T19	3:00	Ballroom
Fischer, Mollie	T34	3:00	Ballroom
Fiskness, Carl	R1	2:00	North Voyageurs
Fitze, Timothy	T59	3:00	Ballroom
Fligge, Pastel	T7	3:00	Ballroom
Fouquette, Charryse	T77	3:00	Ballroom
	T87	3:00	Ballroom
Franseen, Chris	T4	3:00	Ballroom
Freitag, Alicia	A1	11:00	Ballroom B

<b>Student</b>	<b>Presentation Number</b>	<b>Time</b>	<b>Room</b>
Frie, Lisa	Q1	2:00	St. Croix
Frigo, Ben	T26	3:00	Ballroom
Fritza, Sarah	K1	2:00	Ballroom B
Fry, Lindsay	Q1	2:00	St. Croix
Furzland, Matthew	S4	2:45	South Voyageurs
	O1	2:00	Lady's Slipper
Georgoff, Paul	Q1	2:00	St. Croix
Gerads, Melissa	T38	3:00	Ballroom
Gobler, Jodie	W1	5:00	South Voyageurs
Goerz, Rebecca	A1	11:00	Ballroom B
Guggenberger, Joseph	U1	5:30	Mississippi
Hancock, Jay	T33	3:00	Ballroom
Hansen, Nicole	T27	3:00	Ballroom
Hanson, Bianca	T46	3:00	Ballroom
Hanson, Colin	T95	3:00	Ballroom
Hanson, Ken	T63	3:00	Ballroom
Hedlund, Stefanie	Q1	2:00	St. Croix
Henderson, Adam	T73	3:00	Ballroom
Henry, Amy	T37	3:00	Ballroom
Hesch, Jennifer	T58	3:00	Ballroom
Hess, Jenilee	T36	3:00	Ballroom
Hiebert, Jessee	Q1	2:00	St. Croix
Hines, Lindsay	T9	3:00	Ballroom
Hjalmervik, Scott	T46	3:00	Ballroom
Hoch, Carly	Q1	2:00	St. Croix
Hoefler, Robert	T23	3:00	Ballroom
Hoogeveen , Laurie	C3	12:00	North Glacier
Horvat, Susan	Q1	2:00	St. Croix
Howard, Erin	T71	3:00	Ballroom
Howell, Zoe	T21	3:00	Ballroom
Hupke, Janesa	T60	3:00	Ballroom
Iniguez, Paul	E5	12:00	Lady's Slipper
Islam, Sardar	U2	5:45	Mississippi

<b>Student</b>	<b>Presentation Number</b>	<b>Time</b>	<b>Room</b>
Jabs, Angela	C2	11:30	North Glacier
Jacobsson, Amy	T23	3:00	Ballroom
Jadwinski, Victoria	T86	3:00	Ballroom
Jensen, Derrick	G1	11:00	St. Croix
Jensen, Jennifer	T14	3:00	Ballroom
Jewell, Michael	T58	3:00	Ballroom
Johnson, Laura	M3	2:30	North Glacier
Johnson, Linda	I2	11:15	South Voyageurs
Jordan, Florence	T24	3:00	Ballroom
Jorgenson, Sandra	T94	3:00	Ballroom
Judd, Owais	W1	5:00	South Voyageurs
Kakuk, Michael	T62	3:00	Ballroom
Kallstrom, Amy	Q1	2:00	St. Croix
Kapushinski, Tiffany	T42	3:00	Ballroom
Khaled, Pervez	T95	3:00	Ballroom
Kimball, Harold	T100	3:00	Ballroom
Klingensmith, Ryan D.	H5	12:00	North Voyageurs
Koch, Jason	T53	3:00	Ballroom
Koll, Carissa	G1	11:00	St. Croix
Koll, Jakin	E1	11:00	Lady's Slipper
	T8	3:00	Ballroom
Kortan, Ryan	T20	3:00	Ballroom
Kron, Steve	T18	3:00	Ballroom
Kustritz, Katie	I3	11:45	South Voyageurs
Kuyomba, Uchoti	T78	3:00	Ballroom
Kwamin, Marian	X1	5:00	Lady's Slipper
Lambert, Laura	W1	5:00	South Voyageurs
Lambert, Wanda	V1	5:00	North Voyageurs
LaMourea, Jennifer	T75	3:00	Ballroom
Larson, Brett	P5	3:00	Mississippi
Larson, Jana	T69	3:00	Ballroom
Lawal, Iyabo	E6	12:15	Lady's Slipper
Lawrence, Rachel	T44	3:00	Ballroom

<b>Student</b>	<b>Presentation Number</b>	<b>Time</b>	<b>Room</b>
Lawrence, Tanash	K1	2:00	Ballroom B
Lee, Eu Han	T79	3:00	Ballroom
Legatt, Maria	D3	11:30	South Glacier
Leslie, Denise	T76	3:00	Ballroom
Liska, Michelle	T86	3:00	Ballroom
Lunser, Jason	C2	11:30	North Glacier
Lunsman, Melissa	T74	3:00	Ballroom
Madland, Nick	T85	3:00	Ballroom
Maie, Takashi	T72	3:00	Ballroom
Maiga, Aliou	U2	5:45	Mississippi
Mammen, Jon	H3	11:30	North Voyageurs
Marisol, Rodriguez	C1	11:00	North Glacier
Matros, Nicole	T88	3:00	Ballroom
	Q2	3:00	St. Croix
Maze, Lea	A1	11:00	Ballroom B
McIntyre, Trisha	T32	3:00	Ballroom
McKay, Chad	H4	11:45	North Voyageurs
McSorley, Angela	T66	3:00	Ballroom
Meemken, Mike	T95	3:00	Ballroom
Meissner, Nathan	P2	2:15	Mississippi
Mills, Travis	T47	3:00	Ballroom
Mitchell, Katherine	T52	3:00	Ballroom
Mochizuki, Ayako	T5	3:00	Ballroom
Molitor, Maggie	O1	2:00	Lady's Slipper
Moores, Donald	T1	3:00	Ballroom
Motl, Allen	S3	2:30	South Voyageurs
Morris, Necole	L1	2:00	Ballroom C
Myamba, Flora	K1	2:00	Ballroom B
Nett, Sarah	S5	3:00	South Voyageurs
Nhim, Heang	X1	5:00	Lady's Slipper
Nkhata, Katai	T43	3:00	Ballroom
Noerenberg, Jon	G1	11:00	St. Croix
Nordin, Stephanie	T31	3:00	Ballroom

<b>Student</b>	<b>Presentation Number</b>	<b>Time</b>	<b>Room</b>
Ong, Su Sien	T28	3:00	Ballroom
Otremba, Jessica	T45	3:00	Ballroom
Otterson, Kristin	Q1	2:00	St. Croix
Padrnos, Eric	I4	12:00	South Voyageurs
Paulson, Andrew J.	H5	12:00	North Voyageurs
Paumen, Allison	T50	3:00	Ballroom
Paumen, Anna	T24	3:00	Ballroom
Peters, Judith	E3	11:30	Lady's Slipper
Peterson, Tesha	C1	11:00	North Glacier
Pitts, Josie	L1	2:00	Ballroom C
Pow, Guey Lin	T56	3:00	Ballroom
Powless, Hadley	T92	3:00	Ballroom
Prom, Jason	V1	5:00	North Voyageurs
Pu, Chang	F1	11:00	Mississippi
Quijano, Jonathan	P4	2:45	Mississippi
Qureshi, Ali	T91	3:00	Ballroom
Rafferty, Jake	E4	11:45	Lady's Slipper
Rai, Ruhi	T99	3:00	Ballroom
Rakow, Vanessa	T35	3:00	Ballroom
Ramsay, Catherine	Q1	2:00	St. Croix
Reisinger, Mellissa	T81	3:00	Ballroom
Richter, Devon	T82	3:00	Ballroom
Rimstad, Grace	T70	3:00	Ballroom
Rosenberg, Carrie	L1	2:00	Ballroom C
Rosha, Gwen	F2	11:20	Mississippi
Roskop, Luke	T54	3:00	Ballroom
Ross, Stephanie	V1	5:00	North Voyageurs
Rucks, Sarah	T89	3:00	Ballroom
Rudrud, Emily	T77	3:00	Ballroom
	T87	3:00	Ballroom
Salo, David	T63	3:00	Ballroom
Schapira, Craig	T10	3:00	Ballroom
Schaubhut, Jayne	T61	3:00	Ballroom

<b>Student</b>	<b>Presentation Number</b>	<b>Time</b>	<b>Room</b>
Schneider, Daniel	N1	2:00	South Glacier
Schouweiler, Calisa	T29	3:00	Ballroom
Schuck, Holly	I1	11:00	South Voyageurs
Schultz, Emily	F3	11:40	Mississippi
Schultz, Renate	C2	11:30	North Glacier
Schwartz, Jenna	E2	11:15	Lady's Slipper
Schweiger, Paul	D4	12:00	South Glacier
Scott, Daria	T41	3:00	Ballroom
Scott, Sara	T32	3:00	Ballroom
Seabloom, Kristine	T22	3:00	Ballroom
Serie, Annah	T24	3:00	Ballroom
Shaft, Kathy	T1	3:00	Ballroom
Shamla, Paul	I4	12:00	South Voyageurs
Sholund, Amy	T24	3:00	Ballroom
Siegert, Joyce	S1	2:00	South Voyageurs
Sitzman, Amber	T45	3:00	Ballroom
Smith, Kathryn	V1	5:00	North Voyageurs
Smith, Nancy	T78	3:00	Ballroom
Smith, Tiffany	Q1	2:00	St. Croix
Speckien, Emily	T67	3:00	Ballroom
St. Clair, Michelle	T2	3:00	Ballroom
Streefland, Lisa	T36	3:00	Ballroom
	Q2	3:00	St. Croix
Sundgaard, Sven	T97	3:00	Ballroom
Sundin, Paul	T84	3:00	Ballroom
Super, Mark	T1	3:00	Ballroom
Syverson, Kurt	H3	11:30	North Voyageurs
Tedrow, O'Niell	D2	11:15	South Glacier
Telander, Eric	T51	3:00	Ballroom
Tes, Chantha	X1	5:00	Lady's Slipper
Thampi, Suraj	H1	11:00	North Voyageurs
	H2	11:15	North Voyageurs
Thean Ping, Ang	H4	11:45	North Voyageurs

<b>Student</b>	<b>Presentation Number</b>	<b>Time</b>	<b>Room</b>
Thell, Janie	T24	3:00	Ballroom
Thompson, Kirsten	T81	3:00	Ballroom
Tollefson, Bryan	T30	3:00	Ballroom
Towner, Emil	M2	2:15	North Glacier
Tran, Long	U1	5:30	Mississippi
Tsugama, Noriyoshi	B4	11:45	Ballroom C
Turk, Beth	O1	2:00	Lady's Slipper
Viegas, Katrina	T11	3:00	Ballroom
Vierzba, Joe	T91	3:00	Ballroom
Vogt, Vincent	T70	3:00	Ballroom
Vong, Chi Keong	F1	11:00	Mississippi
Vue, Kou	Q1	2:00	St. Croix
Walker, Lindsay	T68	3:00	Ballroom
Wang, Chi Po	T56	3:00	Ballroom
Watson, Sherri	T15	3:00	Ballroom
Weimer, Mark	T39	3:00	Ballroom
Werner, Joseph	S3	2:30	South Voyageurs
Wessel, Emily	T75	3:00	Ballroom
Wicker, Jennifer	Q1	2:00	St. Croix
Wilcox, Lane	T93	3:00	Ballroom
Winters, Valerie	T48	3:00	Ballroom
Wittman, Abbi	G1	11:00	St. Croix
Wolf, Melissa	P1	2:00	Mississippi
Wollack, James	T57	3:00	Ballroom
Wood, Terryjo	T13	3:00	Ballroom
Wuollet, Eric	T98	3:00	Ballroom
Wyman, Jamie	T52	3:00	Ballroom
Xiaonan, Shen	T98	3:00	Ballroom
Xiong, Ka Zoua	Q1	2:00	St. Croix
Yang, Eileen	X1	5:00	Lady's Slipper
Yang, Ye	T98	3:00	Ballroom
Yoshida, Chie	M4	2:45	North Glacier
Ziegler, Michael	T34	3:00	Ballroom



# Faculty Sponsor Index

<b>Sponsor</b>	<b>Department</b>	<b>Presentation Number</b>	<b>Time</b>	<b>Room</b>
Andrzejewski, Julie	Human Relations and Multicultural Education	T5	3:00	Ballroom
Andzenge, Dick	Criminal Justice	K1	2:00	Ballroom B
Arriagada, Jorge	Biological Sciences	D1	11:00	South Glacier
Baliga, Bantwal	Mechanical and Manufacturing Engineering	I4	12:00	South Voyageurs
Bekkala, Andrew	Mechanical and Manufacturing Engineering	H3 H4	11:30 11:45	North Voyageurs North Voyageurs
Bender, Mitch	Environmental & Technological Studies	H2 T15	11:15 3:00	North Voyageurs Ballroom
Benjamin, Jesse	Human Relations and Multicultural Education	T100	3:00	Ballroom
DeVoe, Marlene	Psychology	T49	3:00	Ballroom
Dorn, Judith	English	P4	2:45	Mississippi
Dvorak, Michael	Chemistry	T18 T26 T73	3:00 3:00 3:00	Ballroom Ballroom Ballroom
Flynn, Karen	Women's Studies	M6	3:15	North Glacier
Frank, Stephen	Political Science	C1	11:00	North Glacier
George, Peter	Electrical and Computing Engineering	T1	3:00	Ballroom
Glazos, Michael	Electrical and Computing Engineering	T12	3:00	Ballroom
Gorrell, Donna	English	M2	2:15	North Glacier
Gregory, Daniel	Chemistry	E4 T54 T58 T78	11:45 3:00 3:00 3:00	Lady's Slipper Ballroom Ballroom Ballroom
Grossman, Phillip	Economics	N3	2:40	South Glacier
Haglin, Kevin	Physics, Astronomy and Engineering Science	E3 T62	11:30 3:00	Lady's Slipper Ballroom

<b>Sponsor</b>	<b>Department</b>	<b>Presentation Number</b>	<b>Time</b>	<b>Room</b>
Kukoleca Hammes, Michelle	Political Science	C3	12:00	North Glacier
Hansen, Anthony	Earth and Atmospheric Sciences	E5	12:00	Lady's Slipper
		T31	3:00	Ballroom
		T37	3:00	Ballroom
		T41	3:00	Ballroom
		T80	3:00	Ballroom
		T97	3:00	Ballroom
Havir, Linda	Sociology and Anthropology	T10	3:00	Ballroom
		T17	3:00	Ballroom
		T25	3:00	Ballroom
Helgeson, Kurt	Environmental & Technological Studies	H5	12:00	North Voyageurs
Heneghan, Mike	Electrical and Computing Engineering	T91	3:00	Ballroom
Hill, Fred	Center for Information Media	I2	11:15	South Voyageurs
Hoff, Jean	Earth and Atmospheric Sciences	T30	3:00	Ballroom
		T51	3:00	Ballroom
		T59	3:00	Ballroom
		T84	3:00	Ballroom
Hou, Ling	Electrical and Computing Engineering	T95	3:00	Ballroom
Illies, Jody	Psychology	T34	3:00	Ballroom
		T74	3:00	Ballroom
		T85	3:00	Ballroom
Jeannot, Michael	Chemistry	E2	11:15	Lady's Slipper
Johnson, Katherine	Communication Studies	N2	2:20	South Glacier
Johnson, Robert	Ethnic Studies	P3	2:30	Mississippi
		T16	3:00	Ballroom
		X1	5:00	Lady's Slipper
Jorgensen, Leeann	Community Psychology	A1	11:00	Ballroom B
		L1	2:00	Ballroom C
		T46	3:00	Ballroom
		T56	3:00	Ballroom
Julius, Matthew	Biological Sciences	D2	11:15	South Glacier
		T21	3:00	Ballroom
		T22	3:00	Ballroom
		T42	3:00	Ballroom
		T71	3:00	Ballroom
Kasi, Balsy	Environmental & Technological Studies	H1	11:00	North Voyageurs

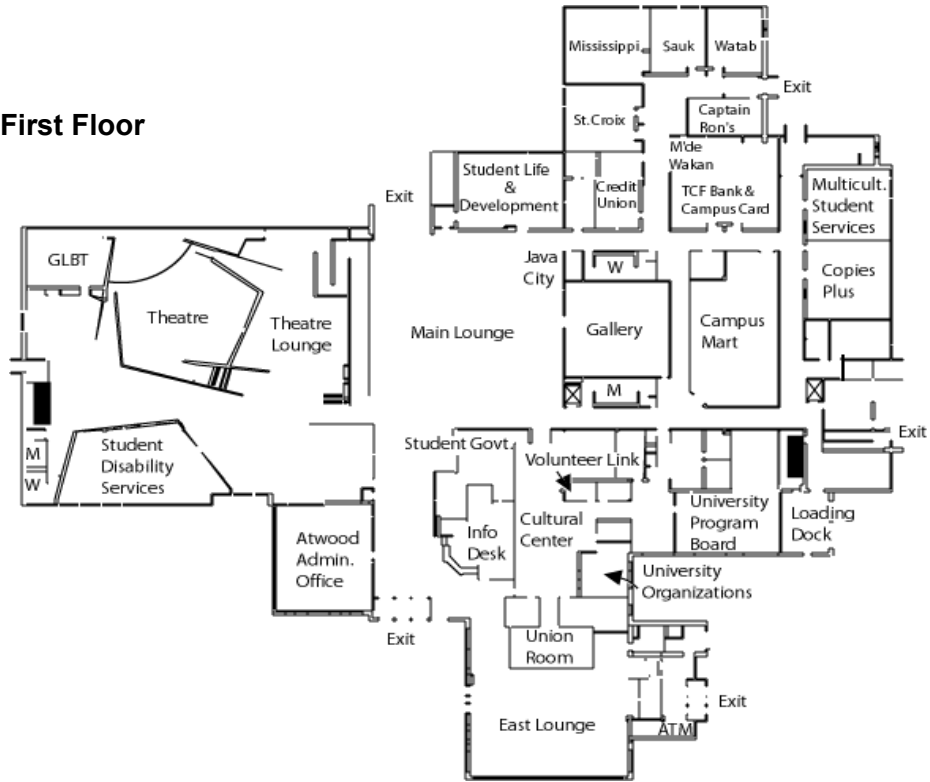
<b>Sponsor</b>	<b>Department</b>	<b>Presentation Number</b>	<b>Time</b>	<b>Room</b>
Kling, Kristen	Psychology	Q2	3:00	St. Croix
		T2	3:00	Ballroom
Koeppen, Kim	Teacher Development	F3	11:40	Mississippi
Koffi, Ettien	English	M1	2:00	North Glacier
Korde, Umesh	Mechanical and Manufacturing Engineering	E6	12:15	Lady's Slipper
Mahroof-Tahir, Mohammad	Chemistry	T45	3:00	Ballroom
		T47	3:00	Ballroom
Martin, Gregory	Mass Communication	P1	2:00	Mississippi
Mechelke, Mark	Chemistry	T63	3:00	Ballroom
		T7	3:00	Ballroom
		T75	3:00	Ballroom
Meerschaert, JoAnn	Biological Sciences	T43	3:00	Ballroom
Melcher, Joe	Psychology	T23	3:00	Ballroom
Merchant, Niloufer	Community Psychology	O1	2:00	Lady's Slipper
Miller, Kenneth	Mechanical and Manufacturing Engineering	U1	5:30	Mississippi
Minger, Mark	Biological Sciences	T19	3:00	Ballroom
		T33	3:00	Ballroom
Mueller, Isolde	Foreign Language and Literature	R2	2:20	North Voyageurs
		R3	2:40	North Voyageurs
Nelson, Charles	Earth and Atmospheric Sciences	T6	3:00	Ballroom
Neu, Donald	Chemistry	T14	3:00	Ballroom
Nicholson, James	Environmental & Technological Studies	T39	3:00	Ballroom
Nuccetelli, Susana	Philosophy	Q1	2:00	St. Croix
Ore, Tracy	Sociology and Anthropology	T25	3:00	Ballroom
Pekarek, Al	Earth and Atmospheric Sciences	T81	3:00	Ballroom
Pryately, Margaret	Communication Studies	V1	5:00	North Voyageurs
		W1	5:00	South Voyageurs
Ramnath, Sarnath	Computer Science	U2	5:45	Mississippi
Rehling, Diana	Communication Studies	M4	2:45	North Glacier
		N4	3:00	South Glacier
Restani, Marco	Biological Sciences	T40	3:00	Ballroom
Rigopoulou, Aspasia	Community Studies	G1	11:00	St. Croix
Robinson, David	Statistics	N1	2:00	South Glacier

<b>Sponsor</b>	<b>Department</b>	<b>Presentation Number</b>	<b>Time</b>	<b>Room</b>
Robinson, James	English	F1	11:00	Mississippi
		F3	11:40	Mississippi
		P5	3:00	Mississippi
Rodgers, Judith	Center for Information Media	S1	2:00	South Voyageurs
		S2	2:15	South Voyageurs
Rodriguez, Ilia	Mass Communication	B4	11:45	Ballroom C
Rothaus, Richard	History	P2	2:15	Mississippi
Rudrud, Eric	Community Psychology	T77	3:00	Ballroom
		T87	3:00	Ballroom
Samuel, Patricia	Women's Studies	M5	3:00	North Glacier
Saupe, Stephen	Biological Sciences	T11	3:00	Ballroom
		T32	3:00	Ballroom
		T57	3:00	Ballroom
Scheel, Elizabeth	Sociology and Anthropology	T27	3:00	Ballroom
Schlauch, Robert	Communication Disorders	T50	3:00	Ballroom
Schoenfuss, Heiko	Biological Sciences	D3	11:30	South Glacier
		D4	12:00	South Glacier
		T69	3:00	Ballroom
		T72	3:00	Ballroom
		T99	3:00	Ballroom
Schulze, Kimberly	Community Psychology	S4	2:45	South Voyageurs
Serrano, Ramon	Teacher Development	F2	11:20	Mississippi
Simones, Joyce	Nursing	S5	3:00	South Voyageurs
Simpson, Patricia	Biological Sciences	T30	3:00	Ballroom
		T33	3:00	Ballroom
		T51	3:00	Ballroom
		T53	3:00	Ballroom
		T59	3:00	Ballroom
		T66	3:00	Ballroom
Smith, Jeffery	Philosophy	B1	11:00	Ballroom C
		B2	11:15	Ballroom C
		B3	11:30	Ballroom C
Splittgerber, Lisa	Foreign Language and Literature	I1	11:00	South Voyageurs
		I3	11:45	South Voyageurs
		R1	2:00	North Voyageurs

<b>Sponsor</b>	<b>Department</b>	<b>Presentation Number</b>	<b>Time</b>	<b>Room</b>
Sreerama, Ram	Chemistry	T28	3:00	Ballroom
		T48	3:00	Ballroom
		T55	3:00	Ballroom
		T61	3:00	Ballroom
		T64	3:00	Ballroom
		T68	3:00	Ballroom
		T79	3:00	Ballroom
		T92	3:00	Ballroom
		T93	3:00	Ballroom
Stray-Gundersen, Jim	Health, Physical Education, Recreation and Sport Science	T29	3:00	Ballroom
Street, Glenn	Health, Physical Education, Recreation and Sport Science	T29	3:00	Ballroom
Subrahmanyam, Lalita	Teacher Development	M3	2:30	North Glacier
		T67	3:00	Ballroom
Tinius, Tim	Psychology	T9	3:00	Ballroom
Tubbiola, Maureen	Biological Sciences	T3	3:00	Ballroom
		T38	3:00	Ballroom
Turner, Sandra	Biological Sciences	T71	3:00	Ballroom
Valdes, Leslie	Psychology	T36	3:00	Ballroom
		T52	3:00	Ballroom
		T70	3:00	Ballroom
		T76	3:00	Ballroom
		T86	3:00	Ballroom
		T88	3:00	Ballroom
Vesely, Barbara	Community Psychology	T4	3:00	Ballroom
		T13	3:00	Ballroom
		T20	3:00	Ballroom
		T35	3:00	Ballroom
		T60	3:00	Ballroom
		T65	3:00	Ballroom
		T82	3:00	Ballroom
		T94	3:00	Ballroom
T89	3:00	Ballroom		
Wagner, Steven	Political Science	C2	11:30	North Glacier
Weisman, Robert	Earth and Atmospheric Sciences	E1	11:00	Lady's Slipper
		T8	3:00	Ballroom
Whites, Margery M.	Communication Disorders	T24	3:00	Ballroom
		T50	3:00	Ballroom
Wince, Richard	Mechanical and Manufacturing Engineering	H4	11:45	North Voyageurs

<b>Sponsor</b>	<b>Department</b>	<b>Presentation Number</b>	<b>Time</b>	<b>Room</b>
Winter, Nathan	Chemistry	T44	3:00	Ballroom
Yao, Aiping	Electrical and Computing Engineering	T98	3:00	Ballroom
Yu, Warren	Mechanical and Manufacturing Engineering	S3	2:30	South Voyageurs

**Atwood First Floor**



**Atwood Upper Level**

