

4-17-2012

# Student Research Colloquium Proceedings 2012

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GLOBALIZATION

Active Learning

Scholarship

Sustainability

Collaboration

Interdisciplinary

Community Engagement

# STUDENT RESEARCH COLLOQUIUM 2012

*Beyond the Books through Active Learning*



## PROCEEDINGS

**Tuesday, April 17, 2012**

Atwood Memorial Center  
8:00 a.m. – 8:00 p.m.

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EDUCATION FOR LIFE.

## WHAT TO DO WITH A “PASSPORT” AT THE STUDENT RESEARCH COLLOQUIUM

Receive a passport when you pick up your SRC Proceedings booklet.

Have your passport stamped at each presentation you attend.

Be sure to fill out your student information on the back side of the passport.

Present your filled passport (six stamps) at the registration table outside the Atwood Ballroom prior to the evening awards ceremony to become eligible for SCSU memorabilia to be given away. Passport prizes are limited to students only.

If you need your passport for class credit, you can exchange a fully stamped passport at the registration table for proof of attendance to give to your instructor.

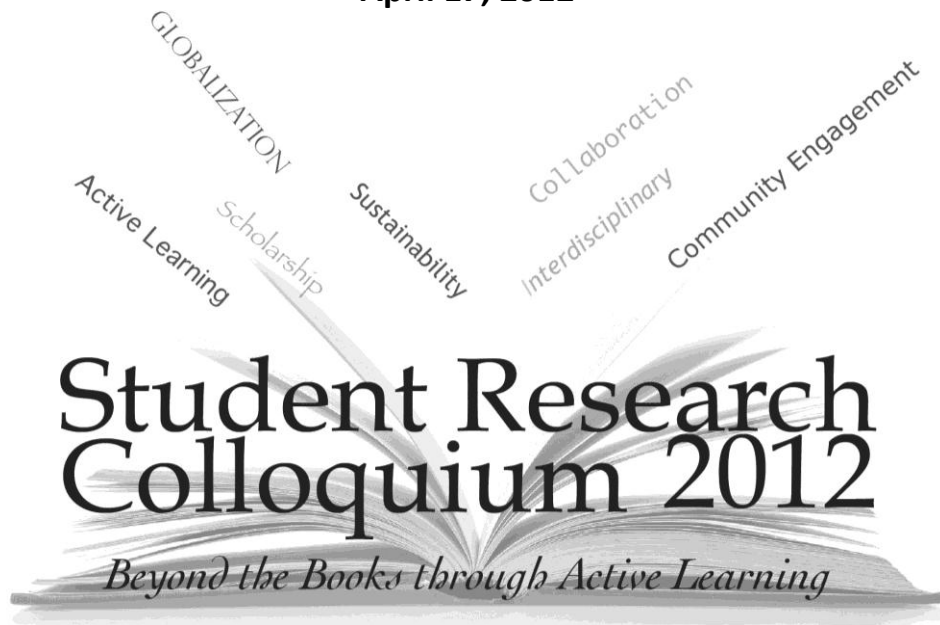
If you are part of the “opt-in” competition for a paper or poster:

- Each member of a group project must complete the competition opt-in requirements in order for that individual member to be eligible for the competition prizes.
- Students nominated for poster presentation awards are expected to be present with their faculty sponsor at the evening awards ceremony.
- All students competing in the paper presentation competition are expected to be present with their faculty sponsor at the evening awards ceremony.

*As a green initiative, the full Proceedings booklet, which includes project abstracts, is available on CD at the registration desk and on the Student Research Colloquium website at [www.stcloudstate.edu/src/proceedings](http://www.stcloudstate.edu/src/proceedings).*

# 15<sup>th</sup> Annual Student Research Colloquium

April 17, 2012



## **WORKSHOPS: 12:30 – 1:30 PM**

### ***MARKETING YOUR STUDENT RESEARCH TO FUTURE EMPLOYERS*** – Voyageurs North

Are you pleased with the research you performed but unsure how this will relate to your employability after graduation? Attend this session to learn from employers who hire SCSU students on how to articulate the skills gained from your research projects. Come prepared to share your research with the group.

### ***GRADUATE SCHOOL MYSTERY REVEALED*** – Voyageurs South

The who and how questions answered about graduate school.

### ***FULBRIGHT GRANTS FOR STUDENTS*** – Glacier North

This presentation will provide information about Fulbright grant opportunities, what students need to do to prepare for these grants, how to apply and what they will receive in an award.

## **RECEPTION AND CLOSING CEREMONY – CASCADE ROOM**

**6:30 – 7:00 p.m. Reception** – All are welcome to attend

**7:00 - 8:00 p.m. Closing Ceremony**

- Paper Presentation Awards
- Poster Presentation Awards
- Denise M. McGuire Student Research Awards

## SCHEDULE OF EVENTS

<b>Session</b>	<b>Event</b>	<b>Time</b>	<b>Room</b>
Session A-G	Communicating with Asia I	8:00 AM - 9:20 AM	Granite
Session A-GN	Educational Leadership and Higher Education	8:00 AM - 9:20 AM	Glacier North
Session A-GS	Stearns County Statistics	8:00 AM - 9:20 AM	Glacier South
Session A-VN	Spring SCSU Student Survey	8:00 AM - 9:20 AM	Voyageurs North
Session A-VS	Science and Engineering I	8:00 AM - 9:20 AM	Voyageurs South
Session B-B	Poster Presentations I	9:00 AM - 10:30 AM	Ballroom
Session C-G	Communicating with Asia II	9:30 AM - 10:50 AM	Granite
Session C-GN	Teaching English as a Second Language	9:30 AM - 10:50 AM	Glacier North
Session C-GS	Social and Behavioral Sciences I	9:30 AM - 10:50 AM	Glacier South
Session C-VN	Biological Sciences	9:30 AM - 10:50 AM	Voyageurs North
Session C-VS	Mechanical and Manufacturing Engineering I	9:30 AM - 10:50 AM	Voyageurs South
Session D-C	Paper Competition I	11:00 AM- 12:20 PM	Cascade
Session D-G	Higher Education	11:00 AM- 12:20 PM	Granite
Session D-GN	Humanities	11:00 AM- 12:20 PM	Glacier North
Session D-GS	The Student Perspective at Apollo High School	11:00 AM- 12:20 PM	Glacier South
Session D-VN	Social and Behavioral Sciences II	11:00 AM- 12:20 PM	Voyageurs North
Session D-VS	Mechanical and Manufacturing Engineering II	11:00 AM- 12:20 PM	Voyageurs South
Session E-C	Paper Competition II	12:30 PM- 1:50 PM	Cascade
Session E-GN	Fulbright Grants for Students	12:30 PM- 1:30 PM	Glacier North
Session E-VN	Marketing Your Student Research to Future Employers	12:30 PM- 1:30 PM	Voyageurs North
Session E-VS	Graduate School Mystery Revealed	12:30 PM- 1:30 PM	Voyageurs South
Session F-C	Paper Competition III	2:00 PM - 3:20 PM	Cascade
Session F-G	Communicating with Asia III	2:00 PM - 3:20 PM	Granite
Session F-GN	Social and Behavioral Sciences III	2:00 PM - 3:20 PM	Glacier North
Session F-T	Scholarship in Action	2:00 PM - 3:20 PM	Theatre
Session F-VN	Complex Systems I	2:00 PM - 3:20 PM	Voyageurs North
Session F-VS	Science and Engineering II	2:00 PM - 3:20 PM	Voyageurs South
Session G-B	Poster Presentations II	2:00 PM - 3:30 PM	Ballroom
Session H-GN	Economics	3:30 PM - 4:50 PM	Glacier North
Session H-GS	Sociology	3:30 PM - 4:50 PM	Glacier South
Session H-VN	Behavioral Studies and Humanities	3:30 PM - 4:50 PM	Voyageurs North
Session H-VS	Mechanical Manufacturing Engineering	3:30 PM - 4:50 PM	Voyageurs South
Session I-B	Poster Presentations III	4:00 PM - 5:30 PM	Ballroom
Session J-G	Communicating with Asia IV	5:00 PM - 6:20 PM	Granite
Session J-GS	Anthropology and Sociology	5:00 PM - 6:20 PM	Glacier South
Session J-VS	Complex Systems II	5:00 PM - 6:20 PM	Voyageurs South
Session K-C	Reception and Awards Ceremony	6:30 PM - 8:00 PM	Cascade

## STUDENT RESEARCH COLLOQUIUM PROGRAM

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### Session A-G Communicating with Asia I

**Granite**

**Moderator** Margaret Pryately, Professor, Communication Studies

Time	Index	Presenter(s)	Project Title
8:00 AM	1	Veeramani, Karthiga	Potential of Ayurveda in Western Medicine
8:10 AM	2	Weldon, Madison	The Motivation for Bathing in Japanese Culture
8:20 AM	3	Ortquist, Cassondra	The Significance of the Traditional Bridal Apparel of Japan
8:30 AM	4	Winter, Christopher	The Social Impact of the Legend of the Red String of Fate in China
8:40 AM	5	Pierce, Kathryn	Cultural Underpinnings of Japanese Cat Cafes
8:50 AM	6	Kuriki, Chinami	Banchan and Health: The Importance of Side Dishes in Korean Cuisine

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### Session A-GN Educational Leadership and Higher Education

**Glacier North**

**Moderator** Gabriela Silvestre, Assistant Professor. Higher Education Administration, Co-Director, Teacher Preparation Initiative (TPI)

Time	Index	Presenter(s)	Project Title
8:00 AM	1	Braun, Michele	Assessment Surveys: Factors that Influence Students' Persistence and Degree Attainment while Matriculating through the Doctoral in Education (Ed.D.) Program
8:20 AM	2	Pham, Nguyen	Institutional Policies for Students: The Catalyst for Promoting Student Enrollment
8:40 AM	3	Ruhland, Gail	Past, Present, Future: Times of Change for Continuing Education Units in Higher Education Institutions
9:00 AM	4	Liu, Xingcai	How Does Internationalization Matter to Community Colleges

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### Session A-GS Stearns County Statistics

**Glacier South**

**Moderator** David Robinson, Professor, Mathematics and Statistics

Time	Index	Presenter(s)	Project Title
8:00 AM	1	Kunde, Kristopher; Li, Zhengyi; Tang, Qi	Predicting Jail Time for Stearns County Inmates
8:20 AM	2	Markfort, Brandi	Judicial System Funnel Analysis
8:40 AM	3	Kunde, Kristopher; Camara, Cheick	Time Series Analysis of Jail Population for Stearns County Jail
9:00 AM	4	Bloch, Daniel; Idifle, Abdikadir; Long, Jason	Analysis of Data for Stearns County Community Corrections

## STUDENT RESEARCH COLLOQUIUM PROGRAM

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### Session A-VN Spring SCSU Student Survey

**Voyageurs North**

**Moderator** Steve Frank, Professor, Political Science

Time	Index	Presenter(s)	Project Title
8:00 AM	1	Martinez-Schuldt, Ricardo; Kellar, Donald; Lahr, Katie; Dirks, Elizabeth; Kafle, Bikal; Dhein, Leah; Sherman, Sonny; Benney, Lauren; Kannas, Amanda; Stay, Karen; Godziek, Andrew	Presentation of Annual Spring SCSU Student Survey

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### Session A-VS Science and Engineering I

**Voyageurs South**

**Moderator** Latha Ramakrishnan, Associate Professor, Chemistry

Time	Index	Presenter(s)	Project Title
8:00 AM	1	Davis, Jeremy; Patankar, Neha; Grangroth, Douglas	Developing a Preventive Maintenance Management System at Polar Tank Trailer
8:20 AM	2	Dunai, Cordelia	Does JAK3-deficiency Prevent the Development of Cyclophosphamide-exacerbated Streptozotocin-induced Type 1 Diabetes?
8:40 AM	3	Dunai, Cordelia	Following the Autoimmune Response in STZ-induced Diabetic JAK3-deficient Mice by Flow Cytometric Analysis of Isolated CD4+ T Helper Cells and Their Cytokines
9:00 AM	4	Dalhoff, Zachary	Investigating the Mechanism of Semicarbazide Induced Seizure-like Activity in Planaria: Measurement of Glutamate and GABA Using HPLC

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### Session B-B Poster Presentations I

**Ballroom**

**Moderator** Jonathan Foss, Assistant Director for Campus Programs, Campus Involvement

Time	Index	Presenter(s)	Project Title
9:00 AM	1	Stay, Karen	Building Healthy Communities from the Ground Up: Community Gardens and Public Health
9:00 AM	2	Mohan, Nandini	Regulation of PGC-1 alpha Protein in Patients Suffering From Diabetes and Parkinsons: A Biological Investigation
9:00 AM	3	Braun, Michele	Career Services Center Practicum Experience
9:00 AM	4	Cenolli, Eglantina	Promoting Leadership for Women
9:00 AM	5	Metzger, Nathan; Mann, Shayna	Identification of PGC-1 Regulators: A Family of Proteins Implicated in Neurodegenerative Disorders
9:00 AM	6	Zhu, Chen; Tetali, Venkata	Factors Affecting Success of SCSU Transfer Students
9:00 AM	7	Shah, Anil; Najmee, Taha; Khan, Adib	Smart Grid System
9:00 AM	8	Backowski, Jessica	Lesbian and Bisexual Women in LGBT Specific Treatment: The Relationship Between Internalized Homonegativity, Identity Development, and Self-Esteem
9:00 AM	9	Olson, Sheryl	Analysis of Students Transferring into a Four-Year University

## STUDENT RESEARCH COLLOQUIUM PROGRAM

9:00 AM	11	Shierts, JoAnn	The Pharmacy In Our Water Supply
9:00 AM	12	Sitaula, Niraj; Manandhar, Samendra; Regmi, Saurab	Automatic Transfer Switch with Power Monitoring System
9:00 AM	13	Wilmunen, Jay	Correlation of Customers of an Outfitting Company in Ely, Minnesota
9:00 AM	14	Dutta Gupta, Ankit; Van Havermaet, Timothy; Alhajri, Faiz	Assistance Device for the Deaf
9:00 AM	15	Holmberg, Nicole; Schuh, Allison	An Investigation of the Regulation of Activity on the PGC-1 Family to Identify Drug Targets for the Treatment of Parkinson's Disease
9:00 AM	16	Mattocks, Jenna; Lang, Rachel; Sanborn, Cara; Standfuss, Kari; Scott, Kim; George, Sasha; Kellander, Wayne; Long, Damas; Bartell, Holly; Newton, Erica	An Assessment of Health Care Providers in Kandiyohi County Regarding Adolescent Sexual Health
9:00 AM	18	Pham, Nguyen	Strategies to Enhance Community Partners and Increase External Funding
9:00 AM	19	Lachermeier, Jason	Novel Drug Targets for Potential Parkinson's Treatments: Regulation of PGC-1a by Stabilizing or Degrading with HectH9 Protein
9:00 AM	20	Lachermeier, Jason; Karki, Kabir	A Novel Annotation of the Aromatic Amino Acids; Phenylalanine, Tyrosine and Tryptophan Biosynthetic Pathways of <i>Thiomicrospira crunogena</i> XCL-2
9:00 AM	21	Bennett, Michael	Production and Isolation of Transferrin Receptors for Evaluation of Novel African Sleeping Sickness Vaccine
9:00 AM	22	Ringsmuth, Christina	Gonithalamin: A Natural Product Template for Chemotherapeutic Drug Design
9:00 AM	23	Duerkop, Peter	Prescribed Fire Management Impacts on Vegetation
9:00 AM	24	Stepan, Kala; Taber, Mollie; Rajbhandari, Spat; Studniski, Amanda; Atkielski, Lisa; Lingl, Sara; Brengman, Nicole; Frieler, Shawn	Healthy Shopping in Meeker County
9:00 AM	25	Aarestad, Corrine; Kollar, Jamie; Schauer, Lindsay; Imdieke, Peter; Schlicht, Michael; Miller, Jennifer; Weinzetl, Rosemary; Spielman, Abigail; Nordstrom, Cassandra	Walkability of Cokato
9:00 AM	26	Jelsing, Jason; Nwoke, Uchechukwu	Measuring the Effects of High School on SCSU Student Performance
9:00 AM	27	Lian, Wen; Lu, Zeqing; Nwoke, Uchechukwu	Projecting Fall Enrollment at SCSU
9:00 AM	28	Karki, Sanjina; Girmay, Mehret	A New Public Health Epidemic
9:00 AM	29	Nelson, Briegette; Eggerichs, Michael	Inhibition of L- Glutamate Induced Planarian Seizure Activity by Riluzole
9:00 AM	30	Justin, Hannah	Eyewitness Testimony: What Law Enforcement Personnel Have Been Doing Wrong



## STUDENT RESEARCH COLLOQUIUM PROGRAM

9:00 AM	31	Pravdica, Cecilie; Kasten, Kody; Alkhatib, Einas; Ivanova, Jelena	Flow Cytometric Quantification of T- and B-cells in the Fathead Minnow ( <i>Pimephales promelas</i> ) with Treatments of Opioids and Antidepressants
9:00 AM	32	Nelson, Kayleen; Stone, Lara; Klug, Savannah; Bartkowitz, Marissa; Brix, Rachel; Noggle, Laura; Goenner, Cecilia; Greene, Eric; Lee, Ka Ye	Stearns County Public Health Referrals
9:00 AM	33	Ahlijah, Martin; Lee, Yunsung; Traore, Damien; Savadogo, Alassane; Duong, Quyen	Using Quality Points as an Indicator of Student Performance
9:00 AM	34	Howland, Jennifer	Incarceration Statistics in United States
9:00 AM	35	Kelly, Valerie	Genetically Modified Organisms are a Health Risk to Children
9:00 AM	36	McQuin, Michael	Investigations into the Burghduff Site, S.D., Using Radiocarbon Dating and Phytolith Analysis
9:00 AM	37	Roettger, Timothy	Orbital Stability of an Exoplanet Undergoing Mass Loss
9:00 AM	38	Sprinkle, Tamara	The Negative Effects of Anzen Shinwa on the Great Tohoku Earthquake
9:00 AM	39	Yusuf, Hassan	Female Genital Mutilation
9:00 AM	40	Johnson, Jennifer	Division of General Studies and Social Norms Theory
9:00 AM	41	Zeiner, Christine; Rubel, Shane	PIPELine Program Policy and Procedure Manual
9:00 AM	42	Grier, Megan; Kueppers, Michael; Granlund, Donald; Chitrakar, Neeva; Viestenz, Robin	Nutrient and Coliform Study of the Sauk River
9:00 AM	43	Arpellet, Magnificat S G	Treat Your Spouse As Your Best Customer
9:00 AM	44	Daubert, Michelle	Mindfulness Based Stress Reduction Observations
9:00 AM	45	Hardwick, Daryn	Putting Manual Cartographic Techniques Back into the Digital Era
9:00 AM	46	Holmes, Kelley; Willaert, Emily	Are Aerobic and Anaerobic Capacities in USSA Junior Alpine Ski Racers Improving? A Seven Year Follow-up.
9:00 AM	47	Nguyen, Nhan	What Most Men Do Not Know: They Can Get Breast Cancer
9:00 AM	48	Appicelli, Jordan	First Year Leadership: Creation, Implementation and Assessment of a Workshop Series for First Year Students
9:00 AM	49	Reinking, Brandon	Gratuity Analysis of Food Delivery in Central St. Cloud, MN
9:00 AM	50	Le, Tuan	Sartell Dancer's Overtake Local Just for Kix Studio
9:00 AM	51	Voeller, Keith	Charge Carrier Mobility of Single Crystal Organic Semiconductors : Effects of Structure & Molecular Packing
9:00 AM	52	Krznarich, Lauren	First Year Programs and Study Abroad: The Transition Home
9:00 AM	53	Dickey, Jordan; Cai, Shoujie; Yin, Feng	Supply Chain Management Risks and Remedies in International Business
9:00 AM	54	Chitrakar, Baadal; Acharya, Jyotindra	The First Annotation of the Arginine and Proline Biosynthetic Pathways of <i>Thiomicrospira crunogena</i> XCL-2

## STUDENT RESEARCH COLLOQUIUM PROGRAM

9:00 AM	55	Eisenschenk, Glen; Lamsal, Vivek	The First Annotation of the Histidine Biosynthetic Pathway of <i>Thiomicrospira crunogena</i> XCL-2.
9:00 AM	56	Malone, Kayla	Applying Succession Theory to Invasive-Dominated Prairie Areas
9:00 AM	59	Fiala, Emily; Boreland, Roshane; Price, Travis	Opportunities for Green Sourcing Along the SCSU Supply Chain
9:00 AM	60	Blomstrom, Susan	Parents' Medical and Support Services Informational Needs Related to Children with Trisomy 13 or 18
9:00 AM	61	Soldner, Abbey	Generational Differences in Emerging Adulthood

**Session C-G    Communicating with Asia II** **Granite**

**Moderator** Margaret Pryately, Professor, Communication Studies

Time	Index	Presenter(s)	Project Title
9:30 AM	1	Hiivala, Braeten	Cultural Significance of Weddings in China
9:40 AM	2	Wolfe, Bradley	Truth in China: An Eastern Reflection on Honesty
9:50 AM	3	Wright, Abigail	Who is the Fairest of Them All?
10:00 AM	4	Ferris, Andrew	Cultural Precedence of Gold in India
10:10 AM	5	Niklaus, Jamie	The Relevance of Saju Cafes in Korean Culture
10:20 AM	6	Ndayiziga, Mika	Eyes are the Window of the Soul

**Session C-GN    Teaching English as a Second Language** **Glacier North**

**Moderator** Elena Kurinski, Assistant Professor, Foreign Languages and Literature

Time	Index	Presenter(s)	Project Title
9:30 AM	1	Giacomino, Lindsay	Comparative Analysis of Acoustic Vowel Space in MN and Spanish Vowels
9:50 AM	2	King, Amber	An Acoustic Account of the Allophonic Realizations of /t/
10:10 AM	3	Marinovic, Jovana	Comparative Acoustic Vowel Space of Serbian and English
10:30 AM	4	Baertlein, Elizabeth	Critical Pedagogy in a College ESL Classroom

**Session C-GS    Social and Behavioral Sciences I** **Glacier South**

**Moderator** Mark Muniz, Associate Professor, Sociology and Anthropology

Time	Index	Presenter(s)	Project Title
9:30 AM	1	Mattson, Mathew	Analysis of the Grand Portage National Monument Gunflint Assemblage
9:50 AM	2	Barg, Diana	Faunal Analysis and Taphonomy at the Hudson-Meng site, Sioux County, Nebraska
10:10 AM	3	Nakayama, Yoshimi	Skimming: A Comparison of the Use of Reading Strategies between Skilled Readers and Less Skilled Readers
10:30 AM	4	Mason, Keesha	The Language of the Lost Girls

## STUDENT RESEARCH COLLOQUIUM PROGRAM

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### Session C-VN Biological Sciences

**Voyageurs North**

**Moderator** Heiko Schoenfuss, Professor, Biological Sciences

Time	Index	Presenter(s)	Project Title
9:30 AM	1	Lesteberg, Kelsey	Anatomy and Performance: The Contribution of Red Muscle Fibers to Climbing Endurance in Hawaiian Freshwater Fish
9:50 AM	2	Minor, Maxwell	Monitoring Site-Specific Stream Characteristics in Relation to Effluent Discharge
10:10 AM	3	Rearick, Daniel	Contaminants of Emerging Concern: Does Early Exposure Shape Larval Survival?
10:30 AM	4	Irving-Hewey, Ruby	A Comparative Analysis of Two Residential Stormwater Ponds and their Ability to Reduce Contaminants

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### Session C-VS Mechanical and Manufacturing Engineering I

**Voyageurs South**

**Moderator** Steven Covey, Professor, Mechanical and Manufacturing Engineering

Time	Index	Presenter(s)	Project Title
9:30 AM	1	Patankar, Neha; Rydelius, Lukas; Yu, Xianzhi	Assessment of Ring Retention and Probe Removal in Synovis GEM Flow Coupler Device
9:50 AM	2	Bachwani, Madhu	A Survey to Evaluate the Effectiveness of Agile Project Management Methodology
10:10 AM	3	Abeykoon, Kasun; Abeykoon, Thusith	Analyzing Behaviour of Operating Systems to Crafted Packets Using Scapy
10:30 AM	4	Donnay, Nicholas	Ergonomic Cart Redesign to Improve Worker Efficiency at Polar Tank Trailer LLC

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### Session D-C Paper Competition I

**Cascade**

**Moderator** Alexander Polacco, Faculty, Management

Time	Index	Presenter(s)	Project Title
11:00 AM	1	Lesteberg, Kelsey	Development of Immunological Assays for the Fathead Minnow ( <i>Pimephales promelas</i> ), a Model Species of Aquatic Toxicology
11:20 AM	2	Steffes, Ayriel; Anderson, Mallory; Becker, Marie; Cortte, Christopher; Thompson, Brittany; LeBlanc, Rachel	Keepin' It Clean
11:40 AM	3	Croghan, Katrina	Sexual Selection in the Domestic Guppy
12:00 PM	4	Carlson, Kelsey	Coldwater Spring Contested: American Wilderness and Imperialism within a Dakota Homeland

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### Session D-G Higher Education

**Granite**

**Moderator** Jan Kircher, Assistant Professor, Social Work

Time	Index	Presenter(s)	Project Title
11:00 AM	1	Goonetilleke, Shiyanke	LGBT Resources at SCSU

## STUDENT RESEARCH COLLOQUIUM PROGRAM

11:20 AM	2	Cenolli, Eglantina	The Reasons Why Adult Students Pursue Master Studies at SCSU
11:40 AM	3	Menden, Allison	A Study of Foundations in Minnesota: Implications for Professional Development of St. Cloud State Students
12:00 PM	4	Flores, Mariesther	Leadership Experiences of Women in Higher Education: The Case of St Cloud State University

### Session D-GN Humanities

**Glacier North**

**Moderator** Chuks Ugochukwu, Associate Professor, Geography and Planning

Time	Index	Presenter(s)	Project Title
11:00 AM	1	Gahm, Noah	McDonald's Poetry Program: McKnowledge is Potential Power
11:10 AM	2	Bentley, Carol	Old Crow Wing: A Walking Tour of History
11:35 AM	3	Carlson, Caitlin	Glacier National Park, the Blackfeet, and the Great Northern Railway
11:55 AM	4	Ames, Alexander	Mansions of Memories: Preservation, Destruction, and the Construction of Place in Central Minnesota

### Session D-GS The Student Perspective at Apollo High School

**Glacier South**

**Moderator** Sandrine Zerbib, Associate Professor, Sociology

Time	Index	Presenter(s)	Project Title
11:00 AM	1	Berg, Michael; Fabre, Ahmed; Flores, Mariesther; LaQuier, Nicolas; LaQuier, Nicole	Experiences of Somali Immigrant Students at Apollo High School
11:20 AM	2	Anderson, Cassie	The Effects of Temporary Employment on Somali Workers in Central Minnesota
11:40 AM	3	Alama, Dustin; Dirks, Elizabeth; Edwards, Samantha; Schommer, Sandra; Tyson, Jacob	Apollo High School Survey Spring 2012
12:00 PM	4	Cragin, Chelsie; Beebe, Taylor; Olstad, Kyle; Williams, Alisha; Nettleton, Angela	SCSU Spring 2012 Survey: Apollo High School Students

### Session D-VN Social and Behavioral Sciences II

**Voyageurs North**

**Moderator** Chaturi Edrisinha, Associate Professor, Community Psychology

Time	Index	Presenter(s)	Project Title
11:00 AM	1	Torgerson, Kelsey; Schaefer, Laura; Huls, Calista; Motzko, Jessica; Schlangen, Jessica	Filter Freaks
11:20 AM	2	Ebensteiner, Jenna; Terwey, Megan; Wilson, Kendra; Winfield, Nicole	Parkers
11:40 AM	3	Bang, Katherine; Ross, Brianna; Smith, Katie; Hayes, Anne	Hands Off
12:00 PM	4	Hernandez-Wilson, Brittanie	Non-verbal Communication when Initiating Same-Sex Relationships

## STUDENT RESEARCH COLLOQUIUM PROGRAM

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### Session D-VS Mechanical and Manufacturing Engineering II

Voyageurs South

**Moderator** Jodi Kuznia, Director of Research Development, Sponsored Programs

Time	Index	Presenter(s)	Project Title
11:00 AM	1	Adriaens, Joseph; Johnson, Jason; Jevne, Jeremy	XCEL Energy Coal Removal Process
11:20 AM	2	Williams, Jennifer	Native Binding of Monoclonal Antibody Generated Toward the Iron Surface Siderophore Receptor of Salmonella Newport
11:40 AM	3	Noyes, Joseph	Characterizing a Putative Binding Protein of cdk1 in the Lifecycle of <i>Toxoplasma gondii</i> Using In Vitro as Well as In Silico Analysis
12:00 PM	4	Peterson, Bradley; Herickhoff, Kevin; Herrala, Bruce; Hillukka, Darrell; Smith, Jonathan; Victorson, Eric; Fernando, Warnakulasuriya; Guo, Yizhi	Husky Motorsports 2011-2012 Formula Car

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### Session E-C Paper Competition II

Cascade

**Moderator** Hung-Chih (Alvin) Yu, Assistant Professor, Geography, Planning and Community Development

Time	Index	Presenter(s)	Project Title
12:30 PM	1	Gucinski, Mark	The Development of a DNA Fingerprinting Method for <i>Bacillus cereus</i>
12:50 PM	2	Stock, Jessica	Cultural Significance of Chinese Lanterns in China: Hanging, Floating, and Flying
1:10 PM	3	Willms, Molly	Kawaii and the Unique Direction of Japanese Fashion
1:30 PM	4	Poudyal, Sushant; Zhang, Yanming	ConnexSys Joint Technology

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### Session E-GN Fulbright Grants for Students

Glacier North

**Moderator** Nichole Pazdernik, Director of Education Abroad, Center for International Studies

Time	Index	Presenter(s)	Project Title
12:30 PM	1		Fulbright Grants for Students

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### Session E-VN Marketing Your Student Research to Future Employers

Voyageurs North

**Moderator** Michelle Schmitz, Associate Director, Career Services Center

Time	Index	Presenter(s)	Project Title
12:30 PM	1		Marketing Your Student Research to Future Employers

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### Session E-VS Graduate School Mystery Revealed

Voyageurs South

**Moderator** Melanie Guentzel, Director of Graduate Student Services, Graduate Studies

Time	Index	Presenter(s)	Project Title
12:30 PM	1		Graduate School Mystery Revealed

## STUDENT RESEARCH COLLOQUIUM PROGRAM

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**Session F-C Paper Competition III Cascade**

**Moderator** Becky Freilinger , Faculty, Sociology and Anthropology

Time	Index	Presenter(s)	Project Title
2:00 PM	1	Carpenter, Mary; Gudding, Jennifer	Addressing Proto and Self-Injurious Behaviors in Young Children by Increasing Functional Communication Skills
2:20 PM	2	Nelson, Rebecca; Eveland, Mark; Kloskowski, Maisie; Troge, Natalie; Kroll, Amanda	Husky Shuttle Thank You Project
2:40 PM	3	Zinnecker, Jennah; Jacobson, Sara; Luhning, Alicia; Pearson, Kristi; Williams, Chantelle	Smoke Free Policy
3:00 PM	4	Lian, Wen	Importance of Being First: First Generation College Students and Academic Achievement

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**Session F-G Communicating with Asia III Granite**

**Moderator** Margaret Pryately, Professor, Communication Studies

Time	Index	Presenter(s)	Project Title
2:00 PM	1	Parker, Derek	The Historical Significance of Body Art in Japanese Culture
2:10 PM	2	Buechner, Nathan	Value of Sumo Wrestling in Japan
2:20 PM	3	Reichert, Kasey	The Cultural Significance of Elephants in India
2:30 PM	4	Rieken, Stephen	The History and Tradition Behind the use of Chili Peppers in Indian Cuisine
2:40 PM	5	Ganser, Bethany	Chinese Foot Binding: A Tradition Lost But Not Forgotten
2:50 PM	6	Lee, Kesa	The Symbolic Values of Koi in Japanese Culture
3:00 PM	7	White, William	The Cultural Significance of the Tatami Style in Japan
3:10 PM	8	Lore, Bradley	Frisbee Golf in Japan and the Affects of Religion
3:20 PM	9	Brehmer, Rachel	An Investigation into Knowledge, Beliefs, and Behaviors of Japanese and Relaxation

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**Session F-GN Social and Behavioral Sciences III Glacier North**

**Moderator** Kenneth Rebeck, Associate Professor, Economics

Time	Index	Presenter(s)	Project Title
2:00 PM	1	Aleckson, Reuben	Major Default: Are Student Loan Default Rates Impacted by Your Choice of Degree?
2:20 PM	2	Spann, Joseph	How Crude is the Price You Pay at the Pump?
2:40 PM	3	Lu, Zeqing	To Stay or Not To Stay: Labor Markets and International Students' Propensity to Stay in the United States
3:00 PM	4	Chkhikvadze, Ani; Dutta Gupta, Ankit	Social Networks - Summoning the Winds of Change

## STUDENT RESEARCH COLLOQUIUM PROGRAM

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<b>Session F-T</b>	<b>Scholarship in Action</b>	<b>Theatre</b>
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**Moderator** Raymond Philippot, Interim Associate Dean

Time	Index	Presenter(s)	Project Title
2:00 PM	1	Oseth, Olga	The Creation of Italian Opera
2:25 PM	2	Kratt, Samuel; Eichholz, James; Mulder, Neal; Knutson, Keith; Pashina, Christopher; Xiong, Toua; Schaller, Patrice	Virtual STEM Activities Book for the iPad
2:55 PM	3	McCorquodale, Steven	Improving Operations and Service to the Non Traditional Student Population at SCSU

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<b>Session F-VN</b>	<b>Complex Systems I</b>	<b>Voyageurs North</b>
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**Moderator** Susantha Herath, Professor, Information Systems

Time	Index	Presenter(s)	Project Title
2:00 PM	1	Maloney, Steven; Amundson, Grant; Vandersteeg, Antonie	An Assessment of the Best Supplier Relationship Management Systems Software in the Service Industry
2:20 PM	2	Shishkina, Elena	The US and Egypt: Exploring Linkages
2:40 PM	3	Li, Guo	Two Americas: An Analysis of How Chinese Stereotype Americans
3:00 PM	4	Seidmedova, Shahlo	The Arab Revolt: A Snowball Effect of Democratic Revolutions in Middle East

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<b>Session F-VS</b>	<b>Science and Engineering II</b>	<b>Voyageurs South</b>
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**Moderator** Jodi Kuznia, Director of Research Development, Sponsored Programs

Time	Index	Presenter(s)	Project Title
2:00 PM	1	Reis, Caitlyn; Donnay, Nicholas; Rausch, Bryan	R & M Manufacturing
2:20 PM	2	Ray, Jonathan; Chehada, Bachar; Biehl, Michael	TCP/IP Packet Manipulation
2:40 PM	3	Zuluaga, Juan	Mantel's Test for Inference on Longitudinal Categorical Sequences: Is It Good Enough?
3:00 PM	4	Salzer, Joseph	Observing Variable Stars in the Winter Sky

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<b>Session G-B</b>	<b>Poster Presentations II</b>	<b>Ballroom</b>
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**Moderator** Jonathan Foss, Assistant Director for Campus Programs, Campus Involvement

Time	Index	Presenter(s)	Project Title
2:00 PM	1	Decock, Paul	What's Your World?
2:00 PM	2	Traut, Moriah	Design and Synthesis of a Novel Alpha-Methylene Lactone Chemotherapeutic Agent
2:00 PM	3	Davis, Jeremy; Kershaw, Adam; Hendrickson, Thomas	Adjustable Scaffolding

## STUDENT RESEARCH COLLOQUIUM PROGRAM

2:00 PM	4	Javed, Asim; Al-ward, Ahmed; Bartlett, Joseph	Car Collision Warning System
2:00 PM	6	Gucinski, Mark; Eldeeb, Nadine; Johnson, Kelly; Prigge, Christopher; James, Cameron	Variable Number Tandem Repeat Analysis of <i>Bacillus cereus</i>
2:00 PM	7	Prigge, Christopher; James, Cameron; Wendland, Kayce	Antimicrobial Toxicity of Silver Solution on <i>Escherichia coli</i> and <i>Staphylococcus epidermidis</i>
2:00 PM	8	Stang, Jessica; Stang, Katie; Scherbing, Leah	Cardiovascular Risk Assessment - Concepcion, Chile
2:00 PM	9	Bianco, Antonio; Holler, Steffen; Neiss, Zachary	Multiple Use Robot For Following you - MURFFy
2:00 PM	10	Bernards, Rikki; Homme, Branden	How Remedial Courses Affect Success at SCSU
2:00 PM	11	Louks, Anna	SCSU Wind Turbine
2:00 PM	12	Zahorski Schmidt, Valerie	Alumni Relations and the Community College
2:00 PM	13	Swanson, Rochelle; Stenerson, Sandra	Making Therapy More Effective: Key Principles Everyone Should Know
2:00 PM	14	Raza, Faisal; Pandey, Chandrashekhar; Heikkinen, Kyle	Interrupted Field Time of Flight Studies of Trapping Kinetics in Organic Semi-Conductors
2:00 PM	15	Dahl, Callie; Rolfes, Michael; Quedens, Kirsten; Stay, Jason	Improving Student Satisfaction in the University's Internal Supply Chain
2:00 PM	16	Scherer, Craig; Phung, Huong; Scott, Andrew; Anderson, Nicole; Kircher, Cole	Flow Cytometric Analysis of the T and B Lymphocyte Populations of Fathead Minnows Exposed to the Muscle Relaxant and Sleeping Aid Pharmaceuticals
2:00 PM	17	Pakhreen, Sushma; Thapa, Jenny	Performance of DGS Students in Remedial Work at SCSU
2:00 PM	18	Holub, Jamie	Why Can't Haiti be Like Fiji: Where Has All the Drinkable Water Gone?
2:00 PM	19	Zwick, Scott	The Conservation Reserve Program and Ethanol in MN
2:00 PM	20	Pichotta, Tia	Larval Fish Behavior: Effects of E2 Exposure
2:00 PM	21	Zirbes, Leah	Political Consumerism and Environmental Degradation
2:00 PM	22	Blank, Ericka	The Effects of Body Image on Memory and Other Cognitive Processes
2:00 PM	23	Nawaratnasamy, Sashi; Aden, Fadumo	First Annotation of Glycine, Serine, Threonine Pathway in <i>Thiomicrospora Crunogena</i> XCL-2
2:00 PM	24	Nawaratnasamy, Sashi; Acharya, Subrat; Orth, Sierra	Counting and Viability of the Immune Cells: Hemocytometer Versus Flow Cytometry
2:00 PM	25	Glynn, Bevan	Offshore Wind Power Prediction: A Data Mining Approach
2:00 PM	26	Plachecki, Matthew	Practicum in the Department of Campus Involvement
2:00 PM	27	Pedersen, Mary	Sonar Testing
2:00 PM	28	Yahya, Nawal	Breed and Diurnal Effects on Leptin and Glucose Concentrations in Tropical Cattle



## STUDENT RESEARCH COLLOQUIUM PROGRAM

2:00 PM	29	VanDenakker, Tayler; Novak, Travis	Insulinitis Development in Streptozotocin-treated Autoimmune Type 1 Diabetes in Janus Tyrosine Kinase 3-deficient Mouse Model
2:00 PM	30	Deuermeyer, Hank	Alternative Synthesis and Characterization of PTCDI Derivatives
2:00 PM	31	Deuermeyer, Hank; Tilahun, Kaleb	Gene Annotations of Enzymes in the Biosynthetic Pathway of Alanine, Aspartate, and Glutamate in <i>Thiomicrospira Crunogena</i> XCL-2
2:00 PM	32	Deuermeyer, Hank; Wagman, Amber; Lechleitner, Rebeca	Applied Structural Genomics: A Novel Undergraduate Research Experience
2:00 PM	33	Gardner, Colin; Harguth, Jacob	Growth of Oxide Over-Layers on Magnetite Crystalline Surface
2:00 PM	34	Lea, Allan; Thinamany, Sinduja	Flow Cytometric Analysis of T Cells in Cyclophosphamide (CY)-injected Streptozotocin (STZ) Mouse Model of Type 1 Diabetes
2:00 PM	35	Chai, Joyce	Effect of COLL 110 on Success in SCSU General Education Courses
2:00 PM	36	Gong, Hwee Kiat	Isolation of CD4+ T Cells by the Isolation Kit II from Miltenyi Biotec
2:00 PM	37	Dunderi, Lucas	Biological Water Treatment
2:00 PM	38	Curtis, Jolene	Pharmaceuticals as a Contaminant of Water
2:00 PM	39	Kavouras, John	The Pendulum Snake
2:00 PM	41	Piehl, Kelli	Upcycling Great Looks
2:00 PM	42	Eiden, Stephanie; Belisle, Andria	Addressing the Specific Needs of the Sophomore Year
2:00 PM	43	Vaske, Hayley	Deaf and Hearing Visual Memory
2:00 PM	44	Ahrens, Cassandra; Miller, Karri	Undergraduate Learning Assistants
2:00 PM	45	Winkels, Andrea	Personality and Metacognition
2:00 PM	46	Sultanova, Madina	CN Molecule Collisions with Protons at a Wide Range of Astrophysical Energies
2:00 PM	47	Ashbeck, Hazel	Evaluating the Evocative Effects of an Establishing Operation Using Video-Self Modeling
2:00 PM	48	DeStefano, Anthony	The Story of a Variable Star: W Geminorum
2:00 PM	50	Offord, Bryce	Geographical Distribution of Horse Stables in Stearns, Benton, and Sherburne County.
2:00 PM	51	Roberts, Mornjay	Dilantin Inhibits Chemoconvulsant Induced Seizure-Like Activity in Planarian
2:00 PM	52	Engelen, Brandon	An Analysis of Traffic Accident Locations in St. Cloud, MN
2:00 PM	53	Nixon, Barron	Esox Muskellunge
2:00 PM	54	Mooreson, Ryan	Historical Development and Environmental Value of the St. Cloud Beaver Islands

## STUDENT RESEARCH COLLOQUIUM PROGRAM

2:00 PM 55 Lamp, Amber

Variance in Student Confidence Levels and Their Success  
Throughout Spring 2012 Semester General Chemistry I  
(CHEM210)

**Session H-GN Economics**

**Glacier North**

**Moderator** Patricia Hughes , Professor, Economics

Time	Index	Presenter(s)	Project Title
3:30 PM	1	Rajewsky, Michael	The Economic Impact of Professional Sports Franchises: Are They Worth Public Subsidization?
3:50 PM	2	Buchmayer, Nicollet	Entertainment or Economics
4:10 PM	3	Johnson, Chad	Local Government Budgets and the Great Recession
4:30 PM	4	Kunkel, Chadwick	Student Loan Default Rates: Are They Headed Towards a Financial Crisis?

**Session H-GS Sociology**

**Glacier South**

**Moderator** Jiping Zuo, Professor, Sociology and East Asian Studies

Time	Index	Presenter(s)	Project Title
3:30 PM	1	Stay, Karen; Kunkel, Chadwick	Community Building and Gardening: How to Organize Resources in Your Community
3:50 PM	2	Sherman, Sonny	Movies and Video Games as Aesthetics, Minorities as Gamers and Moviegoers
4:10 PM	3	Frost, Hannah	Becoming an Artisan in San Juan de Oriente, Nicaragua
4:30 PM	4	Pickar, Michael	Theory and Praxis: Implications on the Uses of Film in the Social Sciences

**Session H-VN Behavioral Studies and Humanities**

**Voyageurs North**

**Moderator** Jodi Kuznia, Director of Research Development, Sponsored Programs

Time	Index	Presenter(s)	Project Title
3:30 PM	1	Ibs, Rachel; Esselman, Paige; Carlson, Bruce; Lucking, Samantha; Schlagel, Leah	Stealers
3:50 PM	2	Winchester, Kimber; Trettin, Karen; Christenson, Heidi; Chiinze, Thandeka	Litter 'R' Us
4:30 PM	4	Fonken, Gael	Dead Reckoning: How Wasting Time in Libraries Helps One to Read Philosophy

**Session H-VS Mechanical and Manufacturing Engineering II**

**Voyageurs South**

**Moderator** Hiral Shah , Assistant Professor, Mechanical and Manufacturing Engineering

Time	Index	Presenter(s)	Project Title
3:30 PM	1	Rayamajhi, Pranesh; Rensberger, Lee	Ergonomic Study of Metal Finishing Area at Tescom
4:10 PM	3	Mohite, Mayur; Li, Ling; Siddique, Abubucker; Liu, Zhiyu	Current State Value Stream Mapping of Tank Assembly Line at Polar Tank Trailers

## STUDENT RESEARCH COLLOQUIUM PROGRAM

4:30 PM 4 Al-Mansour, Feras Comparison Between Two Computer Forensic Programs

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**Session I-B**      **Poster Presentations III** **Ballroom**

**Moderator** Jonathan Foss, Assistant Director for Campus Programs, Campus Involvement

Time	Index	Presenter(s)	Project Title
4:00 PM	2	Rottiger, Trent; Rowe, Casey	Surface Characterization of Organic Electro-optic Materials
4:00 PM	3	Rai, Arbin; Gopali, Bishow	The First Annotation of the Valine, Leucine and Isoleucine Biosynthetic Pathways of <i>Thiomicrospira crunogena</i> XCL-2
4:00 PM	4	Quarve, Greta	Pesticides and Health Risks to Children
4:00 PM	5	Almasalmh, Bandar; Almasalmh, Firass; Ulrich, Keith	Detecting the Geometry of the River and Its Ice Thickness
4:00 PM	6	Grenier, Garrett; Patel, Nehalkumar	The First Annotation of the Cysteine and Methionine Biosynthetic Pathways of <i>Thiomicrospira crunogena</i> XCL-2
4:00 PM	7	Vue, KongMeng	Views of Retirement Amongst the Hmong
4:00 PM	8	LaBau, Hannah	Recreational Boating Impacts on the Mississippi River
4:00 PM	9	Holdman, Anna	Synthetic Biology
4:00 PM	10	Schluter, Makenna	Investigation of Sorority Affiliation Using Focus Groups at a Mid-Size Public University
4:00 PM	11	Wang, LuLu	Testing of Bluetooth Communication and Android Proximity Pinging
4:00 PM	12	Friese, Kaelyn	Honors Fall Retreat
4:00 PM	13	Lehnen, Jesse	The Effect of Lead Tackle on the Minnesota Loon
4:00 PM	14	Waste, Jamie	The Impact of Personal Watercraft on Aquatic Ecosystems
4:00 PM	15	Wolf, Kendall	Effect of Goose Population
4:00 PM	16	Aaberg, Zachary	Spatial and Statistical Analysis of Violent Crime in Minnesota, 2000-2011
4:00 PM	17	Shrestha, Bibita; Karki, Pratima; Elshikh, Amira	Riluzole Reverses Semicarbazide-induced Seizure-like Activity in Planaria: Behavioral and Immunological Assays
4:00 PM	18	Tran, Thang	Comparative Between Paper Towel and Cotton Towel
4:00 PM	19	Cottingham, Kerri	Spatial Movement of Cottingham Family in the United States from 1635 compared to John Hudsons Migration Findings
4:00 PM	20	Wilhelm, Daniel	Amazon Deforestation
4:00 PM	21	Walden, Melissa	Sociophonetic Research Project: Vowel Format Analysis
4:00 PM	22	Danford, Mallory	Bactericidal Effects of Essential Oils on <i>Staphylococcus epidermidis</i> and <i>Escherichia coli</i>
4:00 PM	23	Pazandak, Nicholas	Bee Colony Collapse Disorder
4:00 PM	24	Anderson, Laura	Cloth vs. Disposable

## STUDENT RESEARCH COLLOQUIUM PROGRAM

4:00 PM	25	Tabbert, Jacob	An Investigation of Use of Real-World Examples by High School Chemistry Teachers
4:00 PM	26	Arola, Kyle	Restoration of Eastern White Pine ( <i>Pinus strobus</i> ) at Mille Lacs Kathio State Park
4:00 PM	27	Dedic, Meho	Economic Indicators of the Former Yugoslav Republics
4:00 PM	28	Schulzetenberg, Aaron; Harter, Joseph; Davies, Andrew	Lateral Field Time of Flight Determination of Charge Carrier Mobility
4:00 PM	29	Flick, Sean	The Hinterlands of Lake Liquors
4:00 PM	30	Rose, Bradley	Effect of Galantamine on Amylin (1-37) Aggregation: Investigations using Atomic Force Microscopy and Spectrofluorimetry
4:00 PM	31	Onken, Jessica; Daleiden, Jillian; Regnier, Stacy	Transfer of Therapy Skills: Key Principles Everyone Should Know
4:00 PM	32	Raza, Faisal; Mitiku, Aida; Smith, Russell	Fractional Dynamics
4:00 PM	34	Schultz, Nathaniel	Leadership: A College Experience
4:00 PM	35	Waisanen, Lauri	Practicum at Century College
4:00 PM	36	Johnson, Monir	Racism at a University: Survey Responses that are Neutral and Do Not Know
4:00 PM	37	Beeman, Ashley	SCSU to NMMU an Internship in South Africa
4:00 PM	38	Hansen, Carrie	Job Search Resources for Students with Disabilities
4:00 PM	39	Aldridge, Jared	Design and Synthesis of Natural Product-based NF-kB Inhibitor

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### Session J-G Communicating with Asia IV

**Granite**

**Moderator** Margaret Pryately, Professor, Communication Studies

Time	Index	Presenter(s)	Project Title
5:00 PM	1	Chen, Binghua	The Cultural Significance of Lucky Cats in Japan
5:10 PM	2	Jawad, Mohammed	The Mystery of the Color Red in China
5:20 PM	3	Jorgenson, Andrea	Fishing in South Korea
5:30 PM	4	Nadeau, Rachel	The Historical and Cultural Significance of Desserts in India
5:40 PM	5	Giacomino, Lindsay	How to Tell a Joke in China: an Analysis of the Chinese Style of Humor
5:50 PM	6	Nelson, Shane	The Cultural Relevance of Capsule Hotels in Japan

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### Session J-GS Anthropology and Sociology

**Glacier South**

**Moderator** Kelly Branam, Assistant Professor, Sociology and Anthropology

Time	Index	Presenter(s)	Project Title
5:00 PM	1	Holmstrom, Jane	Friendship in Ruins: Ethnographic Research Among Student Archaeologists

## STUDENT RESEARCH COLLOQUIUM PROGRAM

5:20 PM	2	Robeck, Ashley	Material Culture of Road-rides: How Group Rides Construct Shared Identity and Community Among Bicyclists
5:40 PM	3	Peterson, Erin	Exhaustive Food Movements: Theory Versus Practice
6:00 PM	4	Quintus, Carly	Community Gardens: Spaces for Small Scale Social Movement Organization

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**Session J-VS    Complex Systems II** **Voyageurs South**

**Moderator** Mark Schmidt , Professor, Information Systems

<b>Time</b>	<b>Index</b>	<b>Presenter(s)</b>	<b>Project Title</b>
5:00 PM	1	Neupane, Prabhakar	Spam Forensics
5:20 PM	2	Jansky, Carol	Sex Allocation in Tree Swallows
5:40 PM	3	Gross, Linda	Peer Email Mentor Program

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**Session K-C    Reception and Awards Ceremony** **Cascade**

**Moderator** Dan Gregory, Associate Provost for Research and Dean of Graduate Studies

<b>Time</b>	<b>Index</b>	<b>Presenter(s)</b>	<b>Project Title</b>
6:30 PM	1		Reception
7:00 PM	2		Awards Ceremony

## FORMAL PAPER COMPETITION

The formal paper competition required submission of a four to eight page narrative (maximum 2,000 words) by March 1, 2012. Criteria for judging included: background, thesis, methodology, implications, and organization. Paper presentation categories include:

- Scientific – a research study addressing a testable hypothesis
- Applied – the application of a theory to create a product or system to solve a problem
- Humanities – creative analysis of expression, with the intention of bringing a new perspective to the subject or the production of a creative work

Twelve papers (denoted with \*) were chosen to continue in the competition and present at the Student Research Colloquium in front of a panel of judges from varying disciplines. Evaluation criteria includes background, thesis, methodology, implications, organization, student's speaking skills, visual aids effectiveness, and the student's ability to answer questions. Awards to be given include best paper for \$300 and up to six honorable mentions at \$150 each.

**Addressing Proto and Self-Injurious Behaviors in Young Children by Increasing Functional Communication Skills\***- Mary Carpenter and Jennifer Gudding

**An Assessment of the Best Supplier Relationship Management Systems Software in the Service Industry** - Grant Amundson, Steve Maloney and Antonie Vandersteeg

**Becoming an Artisan in San Juan de Oriente, Nicaragua** - Hannah Frost

**Characterizing a Putative Binding Protein of cdk1 in the Lifecycle of *Toxoplasma gondii* Using In Vitro as Well as In Silico Analysis** - Joseph Noyes

**Coldwater Spring Contested: American Wilderness and Imperialism within a Dakota Homeland\*** - Kelsey Carlson

**ConnexSys Joint Technology\*** - Sushant Poudyal and Yanming Zhang

**Cultural Significance of Chinese Lanterns in China: Hanging, Floating, and Flying\*** - Jessica Stock

**Cultural Underpinnings of Japanese Cat Cafes** - Katie Pierce

**Development of Immunological Assays for the Fathead Minnow (*Pimephales promelas*), a Model Species of Aquatic Toxicology\*** - Kelsey Lesteberg

**Filter Freaks** - Calista Huls, Jessica Motzko, Laura Schaefer, Jessica Schlangen and Kelsey Torgerson

**Following the Autoimmune Response in STZ-induced JAK3-deficient Mice by Flow Cytometric Analysis of CD4+ T Helper Cells and Their Cytokines** - Cordelia Dunai

**Hands Off** - Katherine Bang, Anne Hayes, Brianna Ross and Katie Smith

**How to Tell a Joke in China: An Analysis of the Chinese Style of Humor** - Lindsay Giacomino

**Husky Shuttle Thank You Project\*** - Mark Eveland, Maisie Kloskowski, Amanda Kroll, Rebecca Nelson and Natalie Troge

**Importance of Being First: First Generation College Students and Academic Achievement\*** - Wen Lian

## FORMAL PAPER COMPETITION

**Investigating the Mechanism of Semicarbazide Induced Seizure-like Activity in Planaria: Measurement of Glutamate and GABA Using HPLC** - Zachary Dalhoff

**Kawaii and the Unique Direction of Japanese Fashion\*** - Molly Willms

**Keepin' It Clean\*** - Mallory Anderson, Marie Becker, Christopher Cortte, Rachel LeBlanc, Ayriel Steffes and Brittany Thompson

**Monitoring Site-Specific Stream Characteristics in Relation to Effluent Discharge** - Maxwell Minor

**Native Binding of Monoclonal Antibody Generated Toward the Iron Surface Siderophore Receptor of *Salmonella Newport*** - Jennifer Williams

**Observing Variable Stars in the Winter Sky** - Joseph Salzer

**Parkers** - Jenna Ebensteiner, Megan Terwey, Kendra Wilson and Nicole Winfield

**Sexual Selection in the Domestic Guppy\*** - Katrina Croghan

**Smoke Free Policy\*** - Sara Jacobson, Alicia Lunning, Kristi Pearson, Chantelle Williams and Jennah Zinnecker

**Social Networks- Summoning the Winds of Change** - Ani Chkhikvadze and Ankit Dutta Gupta

**Stealers** - Bruce Carlson, Paige Esselman, Rachel Ibs, Samantha Lucking and Leah Schlagel

**Supply Chain Management Risks and Remedies in International Business** - Shoujie Cai, Jordan Dickey and Feng Yin

**The Cultural Relevance of Capsule Hotels in Japan** - Shane Nelson

**The Development of a DNA Fingerprinting Method for *Bacillus cereus*\*** - Mark Gucinski

**The Historical Significance of Body Art in Japanese Culture** - Derek Parker

**The Reasons Why Adult Students Pursue Master Studies** - Eglantina Cenolli

**To Stay or Not to Stay: Labor Markets and International Students' Propensity to Stay in the United States** - Zeqing Lu

## POSTER PRESENTATION COMPETITION

Students who opt to take part in the poster competition are provided guidance related to poster preparation and judging criteria. Poster presentation categories include:

- Scientific – a research study addressing a testable hypothesis
- Applied – the application of a theory to create a product or system to solve a problem
- Humanities – creative analysis of expression, with the intention of bringing a new perspective to the subject or the production of a creative work

Posters are evaluated at the Student Research Colloquium by judges from a variety of disciplines. Evaluation criteria includes visual effectiveness, language appropriateness, originality, creativity, and content. Awards to be given include best poster for \$300 and up to six honorable mentions at \$150 each.

**A New Public Health Epidemic** - Mehret Girmay and Sanjina Karki

**Addressing the Specific Needs of the Sophomore Year** - Andria Belisle

**Alumni Relations and the Community College** - Valerie Zahorski

**Antimicrobial Toxicity of Silver Solution on *Escherichia coli* and *Staphylococcus epidermidis*** - Cameron James and Christopher Prigge

**An Investigation of the Regulation of Activity on the PGC-1 Family to Identify Drug Targets for the Treatment of Parkinson's Disease** - Nicole Homberg and Allison Schuh

**Are Aerobic and Anaerobic Capacities in USSA Junior Alpine Ski Racers Improving? A Seven Year Follow-up.** - Kelley Homes

**Assistance Device for the Deaf** - Faiz Alhajri, Ankit Dutta Gupta and Timothy Van Havermaet

**Automatic Transfer Switch with Power Monitoring System** - Samendra Manandhar, Saurab Regmi and Niraj Sitaula

**Biological Water Treatment** - Lucas Dunderi

**Breed and Diurnal Effects on Leptin and Glucose Concentrations in Tropical Cattle** - Nawal Yahya

**Car Collision Warning System** - Ahmed Al-ward, Joseph Bartlett and Asim Javed

**CN Molecule Collisions with Protons at a Wide Range of Astrophysical Energies** - Madina Sultanova

**Correlation of Customers of an Outfitting Company in Ely, Minnesota** - Jay Wilmunen

**Counting and Viability of the Immune Cells: Hemocytometer Versus Flow Cytometry** - Subrat Acharya and Sashi Nawaratnasamy

**Deaf and Hearing Visual Memory** - Hayley Vaske

**Design and Synthesis of a Novel Alpha-Methylene Lactone Chemotherapeutic Agent** - Moriah Traut

**Division of General Studies and Social Norms Theory** - Jennifer Johnson



## POSTER PRESENTATION COMPETITION

**Evaluating the Evocative Effects of an Establishing Operation Using Video-Self Monitoring** - Hazel Ashbeck

**Eyewitness Testimony: What Law Enforcement Personnel Have Been Doing Wrong** - Hannah Justin

**Female Genital Mutilation** - Hassan Yusuf

**First Annotation of Glycine, Serine, Threonine Pathway in *Thiomycrospora Crunogena* XCL-2** - Sashi Nawaratnasamy

**First Year Leadership: Creation, Implementation and Assessment of a Workshop Series for First Year Students** - Jordan Appicelli

**Flow Cytometric Analysis of T Cells in Cyclophosphamide (CY)-injected Streptozotocin (STZ) Mouse Model of Type 1 Diabetes** - Allan Lea and Sinduja Thinamany

**Flow Cytometric Analysis of the T and B Lymphocyte Populations of Fathead Minnows Exposed to the Muscle Relaxant and Sleeping Aid Pharmaceuticals** - Nicole Anderson, Cole Kircher, Huong Phung, Craig Scherer and Andrew Scott

**Flow Cytometric Quantification of the T- and B-cells in the Fathead Minnow (*Pimephales Promelas*) with Treatment of Opioids and Antidepressants** - Einas Alkhatib, Jelena Ivanova, Kody Kasten and Cecilie Pravdica

**Goniothalamins: A Natural Product Template for Chemotherapeutic Drug Design** - Christina Ringsmuth

**Growth of Oxide Over-Layers on Magnetite Crystalline Surface** - Colin Gardner and Jacob Harguth

**Identification of PGC-1 Regulators: A Family of Proteins Implicated in Neurodegenerative Disorders** - Shayna Mann and Nathan Metzger

**Improving Student Satisfaction in the University's Internal Supply Chain** - Callie Dahl, Michael Rolfes, and Jason Stay

**Incarceration Statistics in United States** - Jennifer Howland

**Inhibition of L-Glutamate Induced Planarian Seizure Activity by Riluzole** - Michael Eggerichs and Briegette Nelson

**Insulinitis Development in Streptozotocin-treated Autoimmune Type 1 Diabetes in Janus Tyrosine Kinase 3-deficient Mouse Model** - Travis Novak and Tayler VanDenakker

**Interrupted Field Time of Flight Studies of Trapping Kinetics in Organic Semi-Conductors** - Chandrashekhar Pandey and Faisal Raza

**Isolation of CD4+ T Cells by the Isolation Kit II from Miltenyi Biotech** - Hwee Kiat Gong

**Larval Fish Behavior: Effects of E2 Exposure** - Tia Pichotta

## POSTER PRESENTATION COMPETITION

**Making Therapy More Effective: Key Principles Everyone Should Know** - Rochelle Swanson

**Mindfulness Based Stress Reduction Observations** - Michelle Daubert

**Multiple Use Robot for Following You – MURFFy** - Antonio Bianco and Zachary Neiss

**Nutrient and Coliform Study of the Sauk River** - Donald Granlund, Megan Grier and Robin Viestenz

**Offshore Wind Power Prediction: A Data Mining Approach** - Bevan Glynn

**Opportunities for Green Sourcing Along the SCSU Supply Chain** - Travis Price

**Orbital Stability of an Exoplanet Undergoing Mass Loss** - Timothy Roettger

**Personality and Metacognition** - Andrea Winkels

**Political Consumerism and Environmental Degradation** - Leah Zirbes

**Prescribed Fire Management Impacts on Vegetation** - Peter Duerkop

**Production and Isolation of Transferrin Receptors for Evaluation of Novel African Sleeping Sickness Vaccine** - Michael Bennett

**Promoting Leadership for Women** - Eglantina Cenolli

**Putting Manual Cartographic Techniques Back into the Digital Era** - Daryn Hardwick

**Regulation of PGC-1 alpha Protein in Patients Suffering from Diabetes and Parkinson's: A Biological Investigation** - Nandini Mohan

**SCSU Wind Turbine** - Anna Louks

**Smart Gird System** - Adib Khan, Taha Najmee and Anil Shah

**Supply Chain Management Risks and Remedies in International Business** - Shoujie Cai, Jordan Dickey and Feng Yin

**The Conservation Reserve Program and Ethanol in MN** - Scott Zwick

**The Effects of Body Image on Memory and Other Cognitive Processes** - Ericka Blank

**The Negative Effects of Anzen Shinwa on the Great Tohoku Earthquake** - Tamara Sprinkle

**The Relationship between Motivation and Gender, Scholarship Status, Year of Competition, and Sport: A Study Grounded in Self-Determination Theory** - Jared Stuempert

**The Story of a Variable Star: W Geminorum** - Anthony DeStafano

## POSTER PRESENTATION COMPETITION

**Undergraduate Learning Assistants** - Cassandra Ahrens

**Variable Number Tandem Repeat Analysis of *Bacillus cereus*** - Kelly Johnson

**Variance in Student Confidence Levels and Their Success Throughout Spring 2012 Semester General Chemistry I (CHEM 210)** - Amber Lamp

**Walkability of Cokato** - Rosemary Weinzetl

**What Most Men Do Not Know: They Can Get Breast Cancer** - Nhan Nguyen

**Why Can't Haiti be Like Fiji: Where Has All the Drinkable Water Gone?** - Jamie Holub

## **MnSCU Student Symposium**

### **Conference of Undergraduate Scholarly and Creative Activity**

The MnSCU Student Symposium provides undergraduate students with the opportunity to present their scholarly and creative activity, increase intercampus engagement for both faculty and students and to highlight undergraduate excellence. Any MnSCU undergraduate student engaged in collaborative or independent research and enrolled during the 2011-2012 academic year is eligible to present. Nominations were submitted by faculty through their academic department with participation awards determined by the respective dean. Thirteen paper and poster presentations will be presented at the first annual MnSCU Student Symposium to be held at Minnesota State University - Mankato on Monday, April 23, 2012.

**Bike Theft Experiment** - Stefanie Peyton and Hilary Packer

**Coldwater Spring Contested: American Wilderness and Imperialism within a Dakota Homeland** - Kelsey Carlson

**Cultural Significance of Chinese Lanterns in China: Hanging, Floating, and Flying** - Jessica Stock

**Development of Immunological Assays for the Fathead Minnow (*Pimephales promelas*), a Model Species of Aquatic Toxicology** - Kelsey Lesteberg

**Importance of Being First: First Generation College Students and Academic Achievement** - Wen Lian

**Isolation of CD4+ T Cells by the Isolation Kit II from Miltenyi Biotech** - Hwee Kiat Gong

**Peer Email Mentor Program** - Linda Gross

**Presentation of the Annual Spring SCSU Student Survey** - Bikal Kafle, Amanda Kannas, Katie Lahr and Karen Stay

**Skimming: A Comparison of the Use of Reading Strategies between Skilled Readers and Less Skilled Readers** - Yoshimi Nakayama

**Snatch and Run** - Chad Lanners and Lance Moberly

**The Negative Effects of Anzen Shinwa on the Great Tohoku Earthquake** - Tamara Sprinkle

**To Stay or Not to Stay: Labor Markets and International Students' Propensity to Stay in the United States** - Zeqing Lu

## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

Session A-G

Communicating with Asia I

Granite

### Potential of Ayurveda in Western Medicine

Ayurveda is an intricate system of healing that originated in India thousands of years ago. We can find historical evidence of Ayurveda in the ancient books of wisdom known as the Vedas. Ayurveda is an alternative medicinal system still highly valued in India, despite the intervention of western medicine. It is intriguing that the traditional system sustained its strong presence in Indian modernity. With the knowledge garnered from nine books and one article, some written to publish research and some as an informative source about facts and history written by western and Indian scholars, one can realize the role of herbs in Ayurveda and its effectiveness. Due to oppression from various political factors, Ayurveda has been retained in certain parts of India, thus its reach to the outside world is limited. This paper addresses the possibility of combining western and Indian medicine to conquer new medical knowledge and expand the potential of western medicine.

**Presentation Index:** A-G 1

**Present Time:** 8:00 AM

**Student Presenter(s):**

Veeramani, Karthiga

**Sponsor(s):**

Pryately, Margaret

**Department(s)**

Communication Studies

### The Motivation for Bathing in Japanese Culture

The Japanese are very particular with the manner in which they bathe. Their culture dictates that there are certain steps a person must take when bathing in order to be considered truly clean. They teach and pass on these bathing steps to the next generation in order to preserve their unique culture. After reviewing nine sources, it is evident that Shintoism is the major cause behind the Japanese bathing method. In Shintoism, clean is pure while dirty is evil. This philosophy of bathing passed down from the Shintoism is the reason why the Japanese go to great lengths in order to clean themselves. In fact, their bathing is one of the main factors why they are such a healthy society as a whole. The manner and process in which the Japanese bathe, is one that other cultures could model for their own bathing methods in order to improve their health.

**Presentation Index:** A-G 2

**Present Time:** 8:10 AM

**Student Presenter(s):**

Weldon, Madison

**Sponsor(s):**

Pryately, Margaret

**Department(s)**

Communication Studies

### The Significance of the Traditional Bridal Apparel of Japan

There are few things that can change your life more than marriage. Every wedding is unique; some are filled with cultural values and others with numerous festivities. The purpose of this presentation is to focus on the cultural significations of the traditional Japanese bride. It will show that every garment worn throughout the wedding day is used to display and honor values from the past. Many people today seem understandably interested in incorporating the beauty of Japanese gowns into their weddings; however, it would be a travesty to miss the significance associated with these traditional gowns. Because of this, we will be looking at the "shiomuku" (wedding kimono) which is full of cultural symbolism and beauty. Then the importance of the "uchikake" which are elaborately decorated reception gowns that display long elaborate sleeves called "furisode" will be covered. Then lastly, we will talk about the hair styles and headdresses worn by the blushing bride as she enters her new life. Having read five academic sources on this topic, it is believed that the importance of the cultural history and its values are what truly makes the Japanese gown beautiful and meaningful.

**Presentation Index:** A-G 3

**Present Time:** 8:20 AM

**Student Presenter(s):**

Ortquist, Cassandra

**Sponsor(s):**

Pryately, Margaret

**Department(s)**

Communication Studies

## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

### The Social Impact of the Legend of the Red String of Fate in China

Social beliefs in China grow more important as China gains economic influence in our world. China is a growing source of influence in the modern world. I studied the social impact of the legend of the Red String of Fate in China. I studied three online newspapers and three online journals, and discovered that the social impact of the Red String of Fate legend has decreased over the years. The divorce rates in China have increased over the years, especially under the Communist regime. People are also much less likely to marry young. This is due to people putting less faith in the Red String of Fate and not marrying the first person that they come across.

**Presentation Index:** A-G 4

**Present Time:** 8:30 AM

**Student Presenter(s):**

Winter, Christopher

**Sponsor(s):**

Pryately, Margaret

**Department(s)**

Communication Studies

### Cultural Underpinnings of Japanese Cat Cafes

It seems like every day new fads are emerging in modern Japan. From Pokemon cards to Hello Kitty, we tend to enjoy or dismiss these fads with little concern or thought into what they might say about Japanese culture. A recent trend in Japan that has already appeared as a human interest story on nearly every international news website is the cat cafe. When I first stumbled upon this intriguing phenomenon while attempting to research pet ownership in other countries, I thought that there must be more behind these cat cafes than the human interest articles managed to convey. After gleaning information on the cafes themselves from three online articles and from the official website of the oldest cat cafe in Japan, and about Japanese culture from two scholarly journal articles and two personal interviews with Japanese young people, I was able to clearly see how this phenomenon was truly a reflection of several much deeper aspects of Japanese culture. From a close examination of cat cafes in Japan, I learned about the value of work in Japanese society, and how the Japanese way of life can lead to chronic stress and loneliness, especially among Japanese young people. Just imagine what we could learn about our allies, business partners, and friends to the East if we only took the time to delve a little deeper into these so-called fads; if we looked down into the iceberg of culture, instead of just seeing the tip above the surface.

**Presentation Index:** A-G 5

**Present Time:** 8:40 AM

**Student Presenter(s):**

Pierce, Kathryn

**Sponsor(s):**

Pryately, Margaret

**Department(s)**

Communication Studies

### Banchan and Health: The Importance of Side Dishes in Korean Cuisine

Korean side dishes called "banchan" represent the traditional thought that what people eat closely relates to their health. Korean cuisine is widely known as healthy because it consists of a lot of small side dishes which include a variety of ingredients, spices and herbs. The development of this unique meal style is tied to the Korean cultural value that well-balanced nutrients make healthy body. This idea is also supported by Chinese ancient philosophies; Yin-Yang and Wu Xing. In Korean food, the custom of eating many side dishes allows Korean people to consume abundant nutrients and enjoy varied flavors and textures at the same time.

**Presentation Index:** A-G 6

**Present Time:** 8:50 AM

**Student Presenter(s):**

Kuriki, Chinami

**Sponsor(s):**

Pryately, Margaret

**Department(s)**

Communication Studies

## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

Session A-GN

Educational Leadership and Higher Education

Glacier North

### **Assessment Surveys: Factors that Influence Students' Persistence and Degree Attainment while Matriculating through the Doctoral in Education (Ed.D.) Program**

The purpose of this research study was to examine factors that influence doctoral students' persistence and retention at various phases of professional development in the Doctor in Education (Ed.D.) program. It examined factors related to competencies, cultural adjustment, student transition to/through doctoral education, professional role identification and commitment, doctoral program environment, academic integration, social integration, SCSU campus environment, advising, research experiences, and financial resources. This study includes the creation of four assessment surveys (Admissions, Membership, Candidacy, and Dissertation). Each survey was administered during a specific phase of doctoral students' professional development in the Ed.D. program at SCSU. Each survey was administered to students based on the students' transitional phase in their doctoral program. This presentation will discuss the preliminary results from the study regarding the Admission and Dissertation surveys. The information derived from the survey may assist doctoral programs' faculty and administrators with fostering appropriate strategies to enhance students' learning and professional development which, if applied, could ultimately strengthen retention. This study was unique in that it consisted of a non-traditional Ed.D. program while students were pursuing the degree. Literature research was conducted to provide a theoretical and functional framework for this research study.

**Presentation Index:** A-GN 1

**Present Time:** 8:00 AM

**Student Presenter(s):**

Braun, Michele

**Sponsor(s):**

Silvestre, Gabriela

**Department(s)**

Educational Leadership and Higher Education

### **Institutional Policies for Students: The Catalyst for Promoting Student Enrollment**

In the current economy, higher education institutions (HEIs) around the world face several financial challenges such as insufficient quota of incoming students, cut-offs in governmental appropriations, competition, and global changes brought to campuses. These challenges have lead many HEIs to close programs, introduce cost-saving operations, recruit students from other regions or countries, or offer cheap tuition. However, many HEIs found their way through the pressures caused by the economic downturn and increased competition. An overwhelming number of studies have been conducted on HIED marketing strategies, policies, client demands, strategic management, etc. Few higher education researchers have examined the importance of student support services in students' university decision making or retention. This suggests the exploration of students' attitude toward current support services and their perceived needs so as to attract them to HEIs. This study aims at finding answers for the research question "whether or not institutional student support policies influence student enrollment." Understanding students' reflection on support policies is important for administrators and policy makers. The findings from this research will provide SCSU with information useful in evaluating and adjusting their current student support policies to best meet students' needs and strategizing other policies that may increase enrollment. In this study, I apply a quantitative research method with a survey design to understand students' attitude of SCSU's student support policies that are made available for them to obtain a degree.

**Presentation Index:** A-GN 2

**Present Time:** 8:20 AM

**Student Presenter(s):**

Pham, Nguyen

**Sponsor(s):**

Silvestre, Gabriela

**Department(s)**

Educational Leadership and Higher Education

## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

### **Past, Present, Future: Times of Change for Continuing Education Units in Higher Education Institutions**

This is a qualitative multiple case study that analyzes and compares the purpose, roles, and drivers of change for continuing education divisions in public, four-year, post baccalaureate and comprehensive higher education institutions in the United States. The research stems from a historical standpoint. This study also examines processes carried out by continuing education leadership to demonstrate quality and accountability to their higher education institutions. This investigation focuses on the distinctive drivers that have triggered and influenced changes in continuing education units within higher education institutions. The findings from this study illuminate areas in need of development and enhancement of continuing education units. The findings will also support the creation of standards and policies for continuing education divisions in higher education. This study contributes to overcoming the dearth of empirical and theoretical studies on the role and mission of continuing education units.

**Presentation Index:** A-GN 3

**Present Time:** 8:40 AM

**Student Presenter(s):**

Ruhland, Gail

**Sponsor(s):**

Silvestre, Gabriela

**Department(s)**

Educational Leadership and Higher Education

### **How Does Internationalization Matter to Community Colleges**

In the United States, there are about 1,000 community colleges, accounting for 23% of higher education institutions. The community colleges enroll 36% of all college students in the United States. While internationalization is embraced by higher education, international student mobility and other international activities have been increasing throughout the world in recent years. The U. S., a top destination of international students, attracted 723,277 international students in the 2010/2011 academic year; 4.7% over the previous year, with international students accounting for 3.5% of the total student population. The same year, community colleges enrolled 89,853 international students, 1.2% of the total enrollment at these colleges, 4.5% lower than the previous year. The size of international student mobility in community colleges is lower than other types of institutions. Variations exist among community colleges in terms of internationalization, therefore, it should be helpful to explore community colleges' policies and practices for enhancing internationalization, and challenges colleges face in the process. This study intends to investigate policies, practices, and challenges through a study of two Minnesota community colleges. The research attempts to answer three questions: 1. What are current characteristics of internationalization within the community colleges? 2. What are relevant policies and practices in the internationalization process of the community colleges? 3. What are the challenges faced by community colleges in terms of internationalization? The study has been conducted via semi-structured interviews with administrators of the colleges. Through analysis of data, several factors are found to contribute to the colleges' performance in internationalization including faculty engagement, evaluation policies, institutional collaboration, and student services. Additionally, colleges are faced with funding and staffing challenges. Findings of this study are significant because they provide experiences for other colleges to share, and inspire policy-making and future research.

**Presentation Index:** A-GN 4

**Present Time:** 9:00 AM

**Student Presenter(s):**

Liu, Xingcai

**Sponsor(s):**

Silvestre, Gabriela

**Department(s)**

Educational Leadership and Higher Education



## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

Session A-GS

Stearns County Statistics

Glacier South

### Predicting Jail Time for Stearns County Inmates

Have you ever wondered how long you will be in Stearns County Jail if you get tossed in one night? The Department of Mathematics and Statistics at SCSU is currently doing a project with Stearns County Jail in predicting the length of stay for their inmates based on the 2006-2010 jail population data. The goal of this project is to help the Jail use their space more efficiently. Various statistical procedures and software packages (SPSS and SAS) have been used in the analysis. A linear regression model and a gamma regression model were built to predict the confinement time of the inmates, and a logistic regression model was fitted to find the probability of staying under each confinement category. Frequency tables and residual plots were the main source of visual aid. So please come and learn about how long you would be expected to stay in jail if you find yourself behind the bars.

**Presentation Index:** A-GS 1

**Present Time:** 8:00 AM

**Student Presenter(s):**

Kunde, Kristopher; Li, Zhengyi; Tang, Qi

**Sponsor(s):**

Robinson, David; Xu, Hui

**Department(s)**

Statistics

### Judicial System Funnel Analysis

Since January 2010, the Stearns County Jail and the St. Cloud State University Department of Mathematics and Statistics have been working together toward a greater understanding of inefficiencies in the current system of moving people/inmates through the judicial system. We will be examining descriptive statistics from the St. Cloud Police Department, the Stearns County Jail, the Stearns County Attorney Office, and the Department of Community Corrections in an attempt to formulate a summary of how people move through the system and how long they are in each step of the Criminal Justice System in Stearns County. In doing this we hope to make any potential bottlenecks more apparent. This presentation summarizes what has been found during the first 2+ years of the project.

**Presentation Index:** A-GS 2

**Present Time:** 8:20 AM

**Student Presenter(s):**

Markfort, Brandi

**Sponsor(s):**

Robinson, David; Xu, Hui

**Department(s)**

Statistics

### Time Series Analysis of Jail Population for Stearns County Jail

America has more people incarcerated than any other country in the world. Stearns County administrators have a long-term goal of building a new jail for the county, though at present, there is no funding available. To prepare for this potential new building, one must ask how large it should be. Jail populations fluctuate from day to day, month to month, and year to year, but there are patterns in these fluctuations that can be modeled using time series analysis. Stearns County has thousands of people who enter the jail yearly, but in this project we will focus on weekly jail populations. We have received data from the Stearns County Jail for the years 2006-2010 with the help of Joe Kustritz and Steve Hammes. The jail had a peak of occupancy in 2008 and since then it has shown a downward trend for total jail populations. We will fit Box-Jenkins autoregressive integrated moving average (ARIMA) models to examine the trend in total jail populations. They allow us to better understand the data and predict future jail populations.

**Presentation Index:** A-GS 3

**Present Time:** 8:40 AM

**Student Presenter(s):**

Kunde, Kristopher; Camara, Cheick

**Sponsor(s):**

Robinson, David; Xu, Hui

**Department(s)**

Statistics

## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

### Analysis of Data for Stearns County Community Corrections

Recently, the St. Cloud State University Department of Mathematics and Statistics and Stearns County Jail have begun a new joint effort in order to determine inefficiencies in the rehabilitation of convicts. This project will examine a new constructed model where statistics received from Stearns County Jail and Stearns County Department of Corrections are used to analyze problematic groups of convicts, in an effort to improve utilization of resources in the Department of Corrections. This will enable the Department of Corrections to assess areas where their resources could be better utilized, in addition to finding areas where potentially current efforts may not be needed, which would generate more resources for the County without losing anything, which is optimal. This model could potentially figure out which methods of communication with convicts are best, inefficiencies in sentences for certain crimes, or rehabilitation projects that are most/least gainful for convicts. The goal in essence, is to determine areas where resources are of best use to rehabilitate convicts to ensure they do not end up at the jail at a future date.

**Presentation Index:** A-GS 4

**Present Time:** 9:00 AM

**Student Presenter(s):**

Bloch, Daniel; Idifle, Abdikadir; Long, Jason

**Sponsor(s):**

Robinson, David; Xu, Hui

**Department(s)**

Statistics

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**Session** A-VN

**Spring SCSU Student Survey**

**Voyageurs North**

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### Presentation of Annual Spring SCSU Student Survey

The Student Directors of the St. Cloud State University Survey will be presenting the results of the Spring 2012 SCSU student survey. A brief history of the SCSU Survey, acknowledgment of the staff, and the methodology will also be discussed. Topics of the 2012 survey will be SCSU students' views on the direction of SCSU, the biggest challenges facing SCSU, student safety, student health, student drinking habits, and other topics related to SCSU students. The SCSU Survey has been cited as a major academic survey research organization. It was founded by Dr. Stephen Frank in 1980, who continues to direct it along with Dr. Steven Wagner, Dr. David Robinson, Dr. Michelle Kukoleca Hammes, Dr. Sandrine Zerbib, and Dr. John Kulas. We conduct an annual Fall Statewide Survey of Minnesota adults and a Spring Survey of currently enrolled students at St. Cloud State University.

**Presentation Index:** A-VN 1

**Present Time:** 8:00 AM

**Student Presenter(s):**

Martinez-Schuldt, Ricardo; Kellar, Donald;  
Lahr, Katie; Dirks, Elizabeth; Kafle, Bikal;  
Dhein, Leah; Sherman, Sonny; Benney,  
Lauren; Kannas, Amanda; Stay, Karen;  
Godziek, Andrew

**Sponsor(s):**

Zerbib, Sandrine; Frank, Stephen;  
Wagner, Steven; Hammes,  
Michelle; Kulas, John

**Department(s)**

Political Science, Psychology,  
Sociology and Anthropology

**Developing a Preventive Maintenance Management System at Polar Tank Trailer**

Polar Tank Trailers LLC was greatly concerned with the continued maintenance of their equipment and machinery. There is currently no software or defined process for preventative maintenance (PM) at Polar. The first step in the process was to analyze previously used preventative maintenance templates. The team researched machines and updated templates with relevant machine information such as emergency contact, parts list, etc. Once the preventative maintenance software was purchased, this information was entered into the software. The software would serve as an active database for the maintenance staff on a daily basis. The team analyzed five critical machines as a part of this project. With the software installed, and information for each machine updated, the maintenance staff has a checklist to ensure smooth running of the machinery. If a maintenance issue were to happen, a work order would be generated immediately; this would include the parts list, lead-time on the parts, emergency contact and estimated cost. Initiating a preventative maintenance program at Polar will help the company to track its on-going maintenance costs; as well as reduce any down time caused by machine malfunction. Upon completion of this project, Polar was provided with a basic structure to conduct preventative maintenance at their facilities.

**Presentation Index:** A-VS 1**Present Time:** 8:00 AM**Student Presenter(s):**

Davis, Jeremy; Patankar, Neha; Grangroth, Douglas

**Sponsor(s):**

Shah, Hiral

**Department(s)**

Mechanical and Manufacturing Engineering

**Does JAK3-deficiency Prevent the Development of Cyclophosphamide-exacerbated Streptozotocin-induced Type 1 Diabetes?**

Mice deficient in an important signal-transducing protein, JAK3, are partially protected from the development of streptozotocin (STZ)-induced type 1 diabetes (36% of JAK3-deficient mice remained diabetes-free 28 days after STZ induction). In contrast to wild-type mice with functional JAK3, JAK3-deficient mice have higher percentages of certain subpopulations of white blood cells (WBC), such as T helper cells and suppressor T cells. JAK3-deficient WBC also produce significantly higher amounts of the regulatory cytokine IL-10. Cytokines are signaling proteins required to coordinate the immune response carried out by WBC. IL-10 downregulates inflammation and is considered protective against autoimmune responses. We wanted to further understand the protective mechanisms conferred by JAK3-deficiency and elucidate which cells play an important role in preventing the development of type 1 diabetes (T1D) by suppressing the autoimmune response that is usually triggered in the STZ model. One way to implicate the importance of particular cells is to deplete them and observe the effects. T regulatory cells can be depleted by cyclophosphamide administration. Since JAK3-deficient mice express low levels of the target regulatory T cells and high levels of suppressor T cells, it was hypothesized that a similar level of protection would be observed against cyclophosphamide-exacerbated STZ-induced T1D as the partial protection observed against STZ-induced T1D. Three experimental groups were used for comparison of diabetes development and disparate immune responses: a control-treated group (receiving harmless buffer), an STZ-treated group (40 mg/kg/day on days 1-5), and an STZ- and cyclophosphamide-treated group (40 mg/kg STZ per day for days 1-5 and doses of 200 mg/kg cyclophosphamide on days 5 and 13). Diabetes development was monitored by checking blood glucose levels. Inflammation of pancreatic islets which accompanies diabetes was semi-quantified by histology. WBC subpopulations and their cytokines were profiled using flow cytometry.

**Presentation Index:** A-VS 2**Present Time:** 8:20 AM**Student Presenter(s):**

Dunai, Cordelia

**Sponsor(s):**

Cetkovic-Cvrlje, Marina

**Department(s)**

Biological Sciences

## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

### **Following the Autoimmune Response in STZ-induced Diabetic JAK3-deficient Mice by Flow Cytometric Analysis of Isolated CD4+ T Helper Cells and Their Cytokines**

Type 1 diabetes (T1D) is an autoimmune disease that affects millions of people worldwide. Dysregulation of the immune system leads to the destruction of the insulin-producing pancreatic beta cells which results in the symptoms of diabetes. To study T1D in the laboratory, the streptozotocin-induced murine model of T1D can be used. The administration of five consecutive daily low doses of streptozotocin (40 mg/kg) triggers an autoimmune response of white blood cells (WBC), in particular, pro-inflammatory T helper 1 cells and cytotoxic T cells. The streptozotocin model has been used on C57BL/6J mice with and without a functional protein called JAK3. JAK3 is involved in transducing signals in blood cells and is critical for cell proliferation and differentiation. Mice, which are deficient in JAK3 were hypothesized to be protected from the development of T1D due to the reduced functionality of the WBC necessary to destroy the beta cells. The immune responses in mice were studied at three different time points after T1D induction by examining the spleen WBC. JAK3-deficient mice were protected from the development of T1D with 36% remaining diabetes-free at day 28, providing evidence for a strategy for preventing the development of T1D by inhibiting JAK3. Interesting differences were found between the control and JAK3-deficient groups. The JAK3-deficient group had different proportions of subpopulations of WBC and significantly higher levels of the regulatory cytokine (signaling protein), IL-10, were produced by cultured spleens cells. These differences could be important for inhibiting an autoimmune response. The next step in this research was to identify which WBC subpopulation was responsible for producing the IL-10 in order to mechanistically understand the protection conferred by JAK3-deficiency. This was done by isolating the CD4+T helper cell population using a magnetic column and examining the cytokines that the cells produced after culturing.

**Presentation Index:** A-VS 3

**Present Time:** 8:40 AM

**Student Presenter(s):**

Dunai, Cordelia

**Sponsor(s):**

Cetkovic-Cvrlje, Marina

**Department(s)**

Biological Sciences

### **Investigating the Mechanism of Semicarbazide Induced Seizure-like Activity in Planaria: Measurement of Glutamate and GABA Using HPLC**

Planaria possess many of the key biochemical and structural components found in the mammalian central nervous system (CNS). For this reason, they present a unique model organism for studies surrounding the vertebrate CNS. The primary excitatory and inhibitory neurotransmitters, glutamate and  $\gamma$ -aminobutyric acid (GABA), respectively, have previously been measured in planaria homogenates with the use of high performance liquid chromatography (HPLC) coupled with fluorescence detection. Semicarbazide (SCZ), a known glutamic acid decarboxylase (GAD) inhibitor, has been shown to decrease GABA levels in rhesus monkeys, cats and other animal models. However, investigations on the effect of SCZ on planarian nervous system have not been reported yet. An HPLC method was developed to measure the concentration of glutamate and GABA in planaria homogenates following exposure to SCZ. Planaria were incubated in 3 mM semicarbazide for five minutes prior to experimentation. Following homogenization and centrifugation of individual planaria in perchloric acid buffer, glutamate and GABA were derivatized with naphthalene-2,3-dicarboxaldehyde (NDA) in the presence of cyanide ions. The derivatized amino acids were then measured using HPLC coupled with fluorescence detection. The mean $\pm$ S.E.M. amount of glutamate present in control planaria and 3 mM SCZ treated planaria, was 127.8 $\pm$ 86.3 and 273.8 $\pm$ 5.1 pmol/mg planaria, respectively. The mean $\pm$ S.E.M. amount of GABA in control planaria and 3 mM SCZ treated planaria was 168.6 $\pm$ 36.7 and 146.6 $\pm$ 40.4 pmol/mg planaria, respectively. Use of this method allows for the measurement of changes in labeled neurotransmitter levels in response to exposure to drug administration. Results show that SCZ effectively inhibited GAD, blocking the conversion of glutamate to GABA. Future directions may involve the screening of novel anti-seizure drugs, such as Riluzole, that reverse the effects of SCZ and other seizure causing agents.

**Presentation Index:** A-VS 4

**Present Time:** 9:00 AM

**Student Presenter(s):**

Dalhoff, Zachary

**Sponsor(s):**

Ramakrishnan, Latha

**Department(s)**

Chemistry

## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

Session B-B

Poster Presentations I

Ballroom

### **Building Healthy Communities from the Ground Up: Community Gardens and Public Health**

Community gardens have many uses and benefits such as a public health tool for organizing diverse groups in the community, to promote collaboration among neighborhoods and local businesses. Community gardens are also health education and promotion tools to encourage participants to engage in healthy eating practices by increasing vegetables consumption which is associated with decreased risk of chronic diseases such as diabetes, cardiovascular problems, and as a weight management strategy. My objectives were to promote the creation of community gardens as a tool for organizing and building community, expanding and sharing knowledge, and promoting healthy lifestyles through sustainability and accountability. A literature review on the subject was conducted, ethnographic techniques including observation, and key informant interviews were used to assess the impact of community gardens in the lives of the individuals involved in the local community gardens. A great number of research articles, findings from the conducted observations, and the key informant interviews support the fact that community gardens bring several benefits to the lives of individuals involved in the process. Community gardens are powerful tools for building community, developing relationships among neighbors, promoting healthy eating and healthy lifestyles due to the benefits of gardening as an outdoor physical activity, stress relief and shared knowledge of health, wellness, community and gardening.

**Presentation Index:** B-B 1      **Present Time:** 9:00 AM

**Student Presenter(s):**

Stay, Karen

**Sponsor(s):**

Antunez, Hector

**Department(s)**

Kinesiology, Health and Physical Education

### **Regulation of PGC-1 alpha Protein in Patients Suffering From Diabetes and Parkinsons: A Biological Investigation**

PGC-1 $\alpha$  is a human protein that plays an important role in response to energy requirements and cell damage by reactive oxygen molecules in a cell. This protein is found to be in low levels amongst people suffering from diabetes, parkinsons and obesity. The long-term goal of this research is to understand the regulatory mechanism of PGC-1 $\alpha$ , identify regulators and use this information to develop therapies in order to restore the low levels of PGC-1 $\alpha$  in patients suffering from diabetes and parkinsons. In previous research, through purification of PGC-1 $\alpha$ , it was found that PGC-1 $\alpha$  interacts with a protein called Hect H9. Hect H9 is an enzyme known to add tags called ubiquitin to proteins and this targets them for either degradation or a different kind of modification. To study the effect imparted by this interaction, a technique called siRNA was used to reduce the amount of Hect H9 in human cells and then determine the effect on the levels of PGC-1 $\alpha$ . Through this technique it was found that reduction of Hect H9 levels decreases the PGC-1 levels, suggesting that Hect H9 functions to stabilize PGC-1 $\alpha$ . Further experiments suggest that the mechanism of stabilization is through the addition of ubiquitin to PGC-1 $\alpha$ . We are now investigating the half-life of PGC-1 $\alpha$  by performing siRNA technique in order to degrade the Hect H9 present within the cells and then look at the alterations in PGC-1 $\alpha$  levels at different time intervals. This experiment will shed light on the stability imparted by Hect H9 on PGC-1 $\alpha$  in relation to time. This information can be used in the future to design drugs. In short, the present study aims to investigate the mechanism by which Hect H9 regulates PGC-1 $\alpha$ .

**Presentation Index:** B-B 2      **Present Time:** 9:00 AM

**Student Presenter(s):**

Mohan, Nandini

**Sponsor(s):**

Olson, Brian

**Department(s)**

Biological Sciences

## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

### Career Services Center Practicum Experience

This poster project presents the practicum experience with the Career Services Center at St. Cloud State University. The poster provides information about the practicum goals, projects, and outcomes. The three practicum goals include 1.) Coordinate a new resource for the Career Services Center directed towards the needs of graduate students, 2.) Promote professional development opportunities offered through the Career Services Center to graduate students, and 3.) Gain insight regarding the operations and resources in the Career Services Center. The practicum outcomes include 1.) A Networking 101 video was created for the Career Services Center, 2.) Gained knowledge about networking, 3.) Events and workshops offered through the Career Services Center were promoted to all SCSU graduate students, 4.) Learned how to utilize Adobe Connect software for use in remote presentations, and 5.) Gained insight regarding the operations and resources in the Career Services Center.

**Presentation Index:** B-B 3

**Present Time:** 9:00 AM

**Student Presenter(s):**

Braun, Michele

**Sponsor(s):**

Imbra, Christine

**Department(s)**

Educational Leadership and Higher Education

### Promoting Leadership for Women

There has been plethora of research about men and leadership, but women and leadership, particularly women of color, has not been a primary consideration. This project focused on reviewing the existing literature about women and leadership, the barriers they face climbing the leadership ladder, and exploring possible models to make their leadership journey smoother. A review was conducted of eight titles from the literature about statistics on women and leadership, the barriers they face, their role as support to other leaders, and strategies to change the actual representation of women in leadership. In the literature review, the modern "glass ceiling" and covert sexism, shows that the barriers women have to face are still present in our society.

**Presentation Index:** B-B 4

**Present Time:** 9:00 AM

**Student Presenter(s):**

Cenolli, Eglantina

**Sponsor(s):**

Imbra, Christine

**Department(s)**

Educational Leadership and Higher Education

### Identification of PGC-1 Regulators: A Family of Proteins Implicated in Neurodegenerative Disorders

Neurodegenerative disorders, such as Parkinson's disease, Alzheimer's disease, and Huntington's disease, are caused by the death of specific clusters of neurons. Recently, it has been suggested that in some forms of these diseases, these neurons die due to a reduction in the amount of PGC-1 proteins, a family of transcriptional co-activators. This family is comprised of three members: PGC-1 $\alpha$ , PGC-1 $\beta$ , and PRC-1. It has been demonstrated that the function of PGC-1 is protection of these neurons to keep them alive. Consequently, if PGC-1 protein's regulation is determined, drugs could be developed to manipulate that regulation in order to restore PGC-1 activity to regular levels in individuals with these diseases. Therefore, our research objective deals with investigating how the PGC-1 family is normally regulated in humans. A common way proteins are regulated is ubiquitylation, which is the adding of a small protein, called ubiquitin, to a protein, in chains, by an ubiquitin ligase. These chains mark many proteins for degradation by the cell proteasome. As a result, our current focus involves exploring the potential interaction of three enzymes that are known to add ubiquitin tags to proteins (Cdc4, HectH9, and EDD), and an enzyme that removes ubiquitin tags (USP7) with the PGC-1 family. We identified that Cdc4 targets PGC-1 $\beta$  for degradation. In addition, we observed that HectH9, EDD, and USP7 bind to PGC-1 $\alpha$  suggesting that they are likely to regulate the addition or removal of ubiquitin tags. These results implicate that three enzymes known to add ubiquitin tags and one enzyme that removes ubiquitin tags contribute in the regulation of the PGC-1 family of proteins, and thus hold the potential to be novel pharmacological targets.

**Presentation Index:** B-B 5

**Present Time:** 9:00 AM

**Student Presenter(s):**

Metzger, Nathan; Mann, Shayna

**Sponsor(s):**

Olson, Brian

**Department(s)**

Biological Sciences

## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

### Factors Affecting Success of SCSU Transfer Students

This project will focus on transfer students at SCSU, to try to determine what factors influence student success. Using regression analysis, significant variables will be found which predict student success after transferring to SCSU. An additional focus will be the students who choose MATH 070 in any of their first four terms. MATH 070 is an intervention that is a remedial class, designed to help student who are underprepared in mathematics. To be precise, this project will aim to identify factors which distinguish the passing students in MATH 070 from the failing students. We use data on SCSU transfer students entering between Fall 2006 and Spring 2011. No student names or ID numbers are included in our data set, to ensure student data privacy. The analysis of the data is based on their grades achieved at their previous higher education institution, as well their high school information such as GPA and ACT. The following predictor variables will be examined: Math ACT score, High School GPA, Transfer Quality Points, Transfer Credits and Transfer GPA. The success of the transfer students may also depend on their country of origin, gender, and ethnicity. These results will be described in detail.

**Presentation Index:** B-B 6

**Present Time:** 9:00 AM

**Student Presenter(s):**

Zhu, Chen; Tetali, Venkata

**Sponsor(s):**

Robinson, David

**Department(s)**

Statistics

### Smart Grid System

Smart Grid is a new prototype for modernization of electric grid in an eco-friendly way. It is a form of electricity network that uses a combination of different technologies and strategies to deliver electricity to the consumers by using multiple ways of digital communications. The Nation's electric power is at risk due to higher consumer demands; there is a huge load on the transmission lines, making the system unstable. A viable solution can be the Smart Grid. It can be a way of addressing energy independence, global warming and emergency resilience issues. In the future, it will enable us to deploy the benefits of integrated renewable energy resources and greater societal benefits like energy independence, security and enhanced power quality. It is sure that new technologies and mechanism will bring some security concerns with it. However, these anomalies are nothing compared to the positive effects of a Smart Grid.

**Presentation Index:** B-B 7

**Present Time:** 9:00 AM

**Student Presenter(s):**

Shah, Anil; Najmee, Taha; Khan, Adib

**Sponsor(s):**

Hossain, Md

**Department(s)**

Electrical and Computer Engineering

### Lesbian and Bisexual Women in LGBT Specific Treatment: The Relationship Between Internalized Homonegativity, Identity Development, and Self-Esteem

The lesbian, gay, and bisexual (LGB) community has long suffered from living in a heterosexist society. The results may affect the lives of individuals who identify as LGB in destructive ways. The internalization of negative messages about one's sexual orientation has long been connected to the rate of substance abuse within the LGB community; however, limited data exists for specific LGB addiction treatment. This study aims to add to the limited research of lesbian and bisexual women by examining internalized homonegativity, self-esteem, and identity development pre and post treatment in an LGBT-specific treatment facility.

**Presentation Index:** B-B 8

**Present Time:** 9:00 AM

**Student Presenter(s):**

Backowski, Jessica

**Sponsor(s):**

Livingston, Tina

**Department(s)**

Counseling and Community  
Psychology

## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

### Analysis of Students Transferring into a Four-Year University

There is an increased expectation of institutional transparency and accountability surrounding retention and graduation rates at all colleges and universities across the United States. This project was developed to aid in identifying possible factors that could impact retention and graduation rates of transfer students. Data from a university within the Minnesota State Colleges and Universities (MnSCU) was analyzed for the following terms: Fall 2005, Fall 2006, Fall 2007 and Fall 2008. The summarized information from the study completed in the academic year 2010 includes student ages, number of credits transferred into the university and the completion of a prior degree or certificate. The primary effect identified in this project is that students who completed a degree at another institution completed their bachelor's degree at the university at significantly higher rates than transfer students who did not complete a degree prior to transferring to the university.

**Presentation Index:** B-B 9

**Present Time:** 9:00 AM

**Student Presenter(s):**

Olson, Sheryl

**Sponsor(s):**

Imbra, Christine

**Department(s)**

Educational Leadership and Higher Education

### The Pharmacy In Our Water Supply

What happens to the medication that our body does not metabolize? This is something few of us ever consider, but a staggering variety of pharmaceuticals are being detected in the drinking supply of millions of Americans as well as water supplies worldwide. While the concentrations found are far below the levels of medical dosage, researchers do not yet know the risks that are involved from decades of constant exposure to these random combinations, especially on children and the environment. Research is limited, and there are still many unknowns. They have found, however, alarming effects on some human cells and wildlife. This topic introduces how these contaminants are entering our public and private water systems and the lack of current technology to remove them, as well as possible effects if left unaddressed.

**Presentation Index:** B-B 11

**Present Time:** 9:00 AM

**Student Presenter(s):**

Shierts, JoAnn

**Sponsor(s):**

Lindstrom, Sheila

**Department(s)**

Sociology and Anthropology

### Automatic Transfer Switch with Power Monitoring System

The objective of the project is to design and implement a power monitoring system and automatic switching of the source for the backup of the system. The system includes all the previous knowledge of Electrical Engineering including the signal transmission. This project establishes and clarifies the relationship between the analog system, digital system and the signal communication. When all the design specifications are met and the system is implemented, then a system to monitor power consumption and an automatic transfer switch for a three-phase-system is built.

**Presentation Index:** B-B 12

**Present Time:** 9:00 AM

**Student Presenter(s):**

Sitaula, Niraj; Manandhar, Samendra; Regmi, Hossain, Md Saurab

**Sponsor(s):**

**Department(s)**

Electrical and Computer Engineering



## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

### Correlation of Customers of an Outfitting Company in Ely, Minnesota

Examining the spatial relationships of customer patterns of a specific outfitting company in Ely, Minnesota is the focus of this thesis paper. Finding out customer correlations and patterns can be beneficial to any type of business. Correlation and customer location findings are gathered from employee entered data given by the customers. The correlations that were processed are zip code location data, and processed to find out the distance to the outfitting company in the 55731 zip code area. These data are also compared to the length of stay in the BWCA (Boundary Waters Canoe Area), to see if there is in fact a correlation between length of stay in the BWCA and the distance traveled to the area. The goal of the research is to report back to the outfitting company, where clusters of their customers are coming from by zip codes entered at the specific outfitting location in Ely, Minnesota. Clusters of zip codes containing relatively high number of customers are of greatest interest to the company. My research and findings can help the outfitting business see where they need to advertise more, or can help them take a look and understand clusters not only within the state of Minnesota but all throughout the country. A map will be created to further provide detail to the correlation findings and help the readers, better see what is being analyzed.

**Presentation Index:** B-B 13      **Present Time:** 9:00 AM

**Student Presenter(s):**

Wilmunen, Jay

**Sponsor(s):**

Torguson, Jeffrey

**Department(s)**

Geography, Planning and  
Community Development

### Assistance Device for the Deaf

The goal of this project is to design a system that assists a deaf person in detecting audible events in and around the home. The system will use wireless communication between a handheld device, and sensors. Two sensors will be connected to the doorbell and the smoke alarm. A third sensor will be a mobile device that will detect an audible noise from devices such as the microwave, telephone, dishwasher, wash machine, dryer, or other unscheduled sounds designated by the user. The handheld device shall incorporate a vibrator motor and a display that will alert the user of the audible events occurring around the home.

**Presentation Index:** B-B 14      **Present Time:** 9:00 AM

**Student Presenter(s):**

Dutta Gupta, Ankit; Van Havermaet, Timothy;  
Alhajri, Faiz

**Sponsor(s):**

Glazos, Michael

**Department(s)**

Electrical and Computer Engineering

### An Investigation of the Regulation of Activity on the PGC-1 Family to Identify Drug Targets for the Treatment of Parkinson's Disease

Parkinson's Disease, the most common movement disorder, is a neurological disorder characterized by age-dependent degeneration of neurons in the brain. Similar neurological defects in mice models have been found to be correlated with misregulation of the PGC-1 family of proteins. The PGC-1 family of proteins acts as transcriptional coactivators. Regulation of these proteins are controlled by ubiquitylation at phosphorylation sites. In our experiment we asked if binding of Cdc-4, an ubiquitin ligase, to PGC-1 $\beta$  causes a change in transcriptional activity. It has been previously shown that PGC-1 $\alpha$  is negatively regulated by Cdc4, and therefore we hypothesize that PGC-1 $\beta$  will be regulated in a similar manner. In order to test this we transfected HEK293T cells with proteins corresponding to our experimental design. We then assayed the protein levels to determine the transcriptional activity. Our experiment showed that binding of Cdc4 to PGC-1 $\beta$  results in negative regulation, meaning that when Cdc4 is present PGC-1 $\beta$  activity decreases. Future experiments should be conducted to identify further modes of regulation of the PGC-1 family. With results from these experiments a potential novel drug treatment for Parkinson's disease could be generated.

**Presentation Index:** B-B 15      **Present Time:** 9:00 AM

**Student Presenter(s):**

Holmberg, Nicole; Schuh, Allison

**Sponsor(s):**

Olson, Brian

**Department(s)**

Biological Sciences

## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

### **An Assessment of Health Care Providers in Kandiyohi County Regarding Adolescent Sexual Health**

A high rate of teen pregnancy and concern for the sexual health of adolescents exist in Kandiyohi County. The current practice of community health care providers regarding adolescent sexual health was unknown. Kandiyohi County Public Health and Coalition for Healthy Adolescent Sexuality desired to understand how to better support healthcare providers in a diverse community to meet the sexual health needs of the adolescent population. Our objective was to provide information on current practices and data to assist in the development of resource materials. Descriptive exploratory research was used through an 18-question survey given to 20 health care providers in Kandiyohi County. Hindrances to discussing sexual topics were time constraints (31%), community norms (26%), parent reaction (25%), and comfort level (18%). Creating adequate resources for discussing sexual health could increase the likelihood that practitioners educate adolescents and their parents. We need to be aware that cultural differences can affect how well practitioners are able to provide sexual health education. Culturally appropriate resources should be provided. The community does not adequately address adolescent sexual health. School nurses should be provided with better resources to teach students. Resources should be given to parents to help educate their children. The majority of the health care providers addressed sexual health issues beginning at ages 11-12. The majority of the health care providers indicated they would utilize an adolescent sexual health resource packet if available. Cultural differences affected health provider's ability to provide adolescent sexual health education. This was especially true in the Somali population. Of the physicians surveyed only zero to twenty-five percent of their practice population includes adolescents from age eleven to nineteen. This was found to be a limitation of the survey. Further research is needed in Kandiyohi County as it relates to successful adolescent sexual health education and behavior change.

**Presentation Index:** B-B 16      **Present Time:** 9:00 AM

<b>Student Presenter(s):</b>	<b>Sponsor(s):</b>	<b>Department(s)</b>
Mattocks, Jenna; Lang, Rachel; Sanborn, Cara; Standfuss, Kari; Scott, Kim; George, Sasha; Kellander, Wayne; Long, Damas; Bartell, Holly; Newton, Erica	Warner, Susan; Lenz, Brenda; Hiemenz, Melinda	Nursing Science

### **Strategies to Enhance Community Partners and Increase External Funding**

Research has been a professional development element of teaching and research universities. St. Cloud State University (SCSU) has identified its vision as "... active discovery, applied knowledge and creative interaction, we positively transform our students and the communities...". The Office of Sponsored Programs (OSP) has worked hard during the past years to promote research and creative activities among faculty and students. In 2010, OSP increased the external fund up to \$7,321,911, which broke the records over the past five years and almost doubled the amount of external funding in 2006. The OSP's management plans to promote research capacity for faculty and students. This study examined research promotion of nine universities in the United States (US). Findings showed the level of investment in searching external funding of the universities as somewhat similar. The majority of universities have the capacity to search for external funding to do research. However, few of them have outstanding capacity of winning grants for research projects. The investment in search engines is just a basic condition for obtaining grants. The more important element in winning grants for research proposal is the consultation and training opportunities that actually give faculty, staff, and students an edge. The research findings support the OSP management assumptions of the importance of consultation and training in enhancing the scholar communities to spear head their research capacity. OSP develops a research agenda to grow SCSU portfolio of scholarship. The agenda includes 1) student involvement in research as a criterion for internal grants, 2) Research trainings for students, 3) research experience sharing conference for faculty, 4) trainings in research proposal writing, and 5) study trips for resource research faculty and staff to universities that have outstanding research capacity.

**Presentation Index:** B-B 18      **Present Time:** 9:00 AM

<b>Student Presenter(s):</b>	<b>Sponsor(s):</b>	<b>Department(s)</b>
Pham, Nguyen	Imbra, Christine	Educational Leadership and Higher Education

## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

### **Novel Drug Targets for Potential Parkinson's Treatments: Regulation of PGC-1 $\alpha$ by Stabilizing or Degrading with HectH9 Protein**

Parkinson's disease is a debilitating neurological disease that affects millions worldwide every year. One factor of Parkinson's is a decrease in production of dopamine, an essential chemical responsible for signaling in neuronal cells. The decreased dopamine levels result from the death of specific neurons and cause erratic neuronal signals causing muscle twitching and tremors common to Parkinson's. Recently, the transcriptional cofactor PGC-1 $\alpha$  has been identified as a protein that normally helps these neurons survive. The purpose of this study is to identify a regulator of PGC-1 $\alpha$  that either stabilizes or degrades PGC-1 $\alpha$ . One way cells regulate proteins is by attaching an ubiquitin chain that can affect transcription, repair and replication, or mark for degradation. The enzymes responsible for binding ubiquitin chains to specific proteins are known as ubiquitin ligases. Prior to this study, experiments were run to identify various ubiquitin ligases that target PGC-1 $\alpha$  and HectH9 was the most promising of the ligases identified. From here, the two approaches used to determine if HectH9 regulates PGC-1 $\alpha$  were observing the change first in PGC-1 $\alpha$  levels when HectH9 is increased and secondly, when HectH9 is decreased. These approaches will then show if HectH9 regulates PGC-1 $\alpha$  and more specifically if HectH9 stabilizes or degrades PGC-1 $\alpha$ . This research will help us to learn if HectH9 is a good target against which to design a drug that can be used in a treatment for Parkinson's disease.

**Presentation Index:** B-B 19      **Present Time:** 9:00 AM

**Student Presenter(s):**

Lachermeier, Jason

**Sponsor(s):**

Olson, Brian

**Department(s)**

Biological Sciences

### **A Novel Annotation of the Aromatic Amino Acids; Phenylalanine, Tyrosine and Tryptophan Biosynthetic Pathways of *Thiomicrospira crunogena* XCL-2**

*Thiomicrospira crunogena* XCL-2 is a member of a group of deep sea thermal vent inhabitants. It is a spiral shaped sulfur oxidizing gammaproteobacteria with a genome that is 2,427,734 base pairs. Understanding the unique biology of organisms that live in extreme environments may lead to novel chemical processes heretofore never observed on the planet earth. The genome of *Thiomicrospira crunogena* has been completed by the U.S. Department of Energy Joint Genome Institute. SCSU has undertaken the task of determining whether or not the genes for biosynthesis of amino acids are present using comparative genomics. Phenylalanine, tyrosine and tryptophan are all aromatic amino acids. Phenylalanine is a non-polar amino acid, tyrosine is a polar uncharged amino acid and tryptophan is a non-polar amino acid. We hypothesize that these amino acids have biosynthetic pathways in *Thiomicrospira crunogena* XCL-2 and that we will be able to identify the genes responsible for the synthesis of these amino acids using a comparative genomics approach.

**Presentation Index:** B-B 20      **Present Time:** 9:00 AM

**Student Presenter(s):**

Lachermeier, Jason; Karki, Kabir

**Sponsor(s):**

Kvaal, Christopher

**Department(s)**

Biological Sciences

## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

### Production and Isolation of Transferrin Receptors for Evaluation of Novel African Sleeping Sickness Vaccine

The continent of Africa loses an estimated \$6,000,000,000 every year in food production, health care, agriculture, and land use due to the presence of a parasite called *Trypanosoma brucei*, the causative agent of African Sleeping Disease. This parasite is spread by the Tsetse fly, common in the wet and fertile regions of Africa, prohibiting cattle to be used for work in fields or raised for food. This disease has no vaccine and is 100% fatal without treatment. Current treatments are limited to harsh medicines that can cause serious and permanent damage to the host. We have recognized for the past 60 years that a vaccine for this disease is greatly needed for the health and economy of Africa. This parasite has evolved a complex strategy that makes traditional vaccine methods difficult resulting in many unsuccessful vaccination attempts. This is due to a protective mechanism called Variable Surface Proteins, which enables the parasite to change the appearance and nature of its surface every few days. This allows the parasite to survive since the adaptive immune system takes longer to develop a response than the parasite takes to switch its appearance, leaving the immune system chasing ghosts. Our method will look at two proteins that have been identified to be constantly present on the membrane in low numbers. These proteins harvest iron from the parasite's host and are necessary for metabolism. By targeting them, we can both starve the parasite's metabolism and tag the parasite for immune system elimination. Through Polymerase-Chain-Reaction, Vector Construction, Transfection into *E. coli*, Induced Protein Expression, and traditional Column Chromatography methods, we hope to isolate these two proteins. Subsequent analysis will determine their characteristics and evaluate their potential as a vaccine for cattle, a future project we will be pursuing in cooperation with EpiTox (a vaccine production company).

**Presentation Index:** B-B 21      **Present Time:** 9:00 AM

**Student Presenter(s):**

Bennett, Michael

**Sponsor(s):**

Jacobson, Bruce

**Department(s)**

Biological Sciences

### Goniothalamins: A Natural Product Template for Chemotherapeutic Drug Design

Cancer is the second most common cause of death in the United States. Due to the increasing number of diagnoses of this disease each year, the development of new methods to treat cancer continues to be a major focus of pharmaceutical research. One potential source of new chemotherapeutic drugs is nature. Over fifty percent of all cancer drugs used today comes from natural products. The focus of this research is on the natural product goniothalamins. Goniothalamins were isolated from the dried stem bark of a Malaysian plant, *Goniothalamus adersonii*. Goniothalamins exhibit potent cytotoxicity against a variety of cancer cell lines. Preliminary testing has shown that goniothalamins' cytotoxicity is cell specific; it exhibits no significant cytotoxic effects on healthy cells surrounding the cancer during treatment. This research project describes the synthesis of a novel goniothalamins analogue. While the natural product features an internal alpha, beta-unsaturated lactone moiety, this new compound will incorporate an external alpha-methylene functional group. Literature precedence supports the hypothesis that this structural modification will increase the natural product's cytotoxicity against cancer cell lines. The rationale behind the analogue's design and synthetic strategies to prepare the proposed compound will be discussed.

**Presentation Index:** B-B 22      **Present Time:** 9:00 AM

**Student Presenter(s):**

Ringsmuth, Christina

**Sponsor(s):**

Mechelke, Mark

**Department(s)**

Chemistry

## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

### Prescribed Fire Management Impacts on Vegetation

The remnant Midwestern Oak Savanna habitat is extremely rare, currently present in <1% of its former range. This is due in large part to conversion of savannas to agriculture and historical fire suppression. Fire plays an integral part in maintaining the native grassland vegetation as well as the physical structure typical of savanna ecosystems. Some of the best examples of remnant oak savanna occur at Sherburne National Wildlife Refuge, where management has implemented a prescribed fire program to restore uplands to their native state. Plant diversity characteristics are an important measure of successful restoration efforts. Species-rich communities are more adaptable to stochastic events and are more resilient to invasions by alien species. Vegetation monitoring plots have been randomly established in three strata (forest, savanna, grassland) throughout the study area. Plots have been monitored one, five, and ten years after a prescribed fire event according to the National Park Service's Fire Monitoring Handbook. Results from this study will guide future management decisions regarding prescribed fire activities at Sherburne NWR, as well as guide efforts by other individuals/organizations interested in oak savanna restoration. This study could also be applied to broad-scale interpretations of other disturbance-prone ecosystems.

**Presentation Index:** B-B 23      **Present Time:** 9:00 AM

**Student Presenter(s):**

Duerkop, Peter

**Sponsor(s):**

Cook, William

**Department(s)**

Biological Sciences

### Healthy Shopping in Meeker County

Meeker County Public Health identified that the community is lacking sufficient knowledge related to healthy food choices and preparation. Meeker County Public Health is aware that parents in the community do not possess knowledge and skills necessary to prepare well-balanced meals for their family. MCPH has expressed concern in how parents' shopping and cooking habits impact their families' nutrition. Data was collected using descriptive exploratory design. Adult male and female parents with at least one child living in the household were sampled from the community, n="59." Data analysis included finding means, medians, and modes for demographic and survey data. The majority of parents surveyed believe they were knowledgeable in regards to reading food labels and recommended serving size. Overall, Meeker County parents feel they have enough time and income to prepare nutritious meals for their family. As income rises, parents were more likely to report that income did not affect their ability to prepare nutritious meals. Parents with two children or less believed they had sufficient time to prepare nutritious meals, whereas parents with more than two children believed they had less time. Parents with more than two children have greater need for healthy shopping and meal preparation education. In regard to income, families earning less than \$50,000 were more likely to agree that income negatively impacts their ability to prepare nutritious meals. Further research is needed on the topic of smart shopping in Meeker County. Future studies should include a larger sample size and access to participants in other areas of Meeker County. Providing specific definitions of nutritious meals and healthy shopping would more accurately assess participants' knowledge. Recommendations for Meeker County Public Health include providing educational resources on healthy serving sizes, nutritious and low cost recipes, and basic nutrition information.

**Presentation Index:** B-B 24      **Present Time:** 9:00 AM

**Student Presenter(s):**

Stepan, Kala; Taber, Mollie; Rajbhandari,  
Spat; Studniski, Amanda; Atkielski, Lisa; Lingl,  
Sara; Brengman, Nicole; Frieler, Shawn

**Sponsor(s):**

Lenz, Brenda; Hiemenz, Melinda;  
Bajari, Ann

**Department(s)**

Nursing Science

## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

### Walkability of Cokato

Walkability is not well-researched in Cokato and is not included in the Wright County SHIP grant. Supportive neighborhood environments, such as access to sidewalks, may influence participation in walking and activity. Respondents' neighborhood perception and individual beliefs are significantly associated with walking. Improved neighborhood connection may cause a greater feeling of connectivity, higher levels of interaction and access to resources. 63 surveys, composed of 21 questions, were completed using a convenience sample of residents and all were used for data analysis. Section 1 respondents perceived more need for improved walkability compared to respondents from sections 2 and 3. Residents of Cokato reported walking for physical activity (83% either agreed or strongly agreed), recreation (83%) and as a means of transportation (25%). The perceived barriers are lack of benches (77%), lack of sidewalks (56%), the condition of sidewalks (48%), and lack of pedestrian crosswalks (47%). Residents perceived there to be a sufficient amount of sidewalks (67%). 45% of respondents indicated they would walk more if designated routes existed with distance indicated. Respondents perceived that they could benefit from increasing the number of sidewalks (71%). Environmentally, Cokato could benefit from more benches and sidewalks. Section 1 showed the strongest desire for improvements in walkability. Social implications of walkability include outdoor resident interaction and participation in community events. This could result in a physically healthier community. Politically, increasing funding and raising community support would result in possible improvements, such as increase in benches and crosswalks, for walkability. Further research should be done using replication with a larger sample size, focusing on the areas outside of town (sections 1 and 3).

**Presentation Index:** B-B 25      **Present Time:** 9:00 AM

<b>Student Presenter(s):</b>	<b>Sponsor(s):</b>	<b>Department(s)</b>
Aarestad, Corrine; Kollar, Jamie; Schauer, Lindsay; Imdieke, Peter; Schlicht, Michael; Miller, Jennifer; Weinzetl, Rosemary; Spielman, Abigail; Nordstrom, Cassandra	Lenz, Brenda; Hiemenz, Melinda; Henry, Vonna	Nursing Science

### Measuring the Effects of High School on SCSU Student Performance

This project aims to study factors that affect student performance at SCSU. In particular, we want to determine if a student's high school background provides them with a better chance of succeeding and in the long run completing their program at St. Cloud State University. We seek to measure the effect of individual high schools on student success. We have used regression models to carry out analysis of data provided by The Institutional Research Office of SCSU and Highschooldigger.com. The data is from Fall 2006 through 2010. No student names or ID numbers are included in our data set, to ensure student data privacy. We learned from our models created that there are significant factors that affect students' performance and in the future others will use this work to look at what interventions SCSU can provide to better help students' chances of success.

**Presentation Index:** B-B 26      **Present Time:** 9:00 AM

<b>Student Presenter(s):</b>	<b>Sponsor(s):</b>	<b>Department(s)</b>
Jelsing, Jason; Nwoke, Uchechukwu	Robinson, David	Statistics

## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

### Projecting Fall Enrollment at SCSU

It is important for university planning purposes to be able to forecast the number of new students for given fall semesters. In the past, the university has not used any scientific method or empirical model to analyze the enrollment patterns, nor the signal of the level of enrollment. The dataset being used consists of information on all the students who have been admitted in last six years, from Fall 2006 to Fall 2011. No student names or ID numbers are included in our data set, to ensure student data privacy. There are several possible methods for predicting the number of New Entering Freshmen of SCSU in fall terms. We will consider which method of forecasting the enrollment is most efficient, and describe any weakness to the methods that we observe. The two primary methods are: 1) Ratio estimation of the total number of admitted students, based on the numbers of admits by a certain day in advance of the start of fall semester; 2) Logistic regression estimation of the probability that each admitted student will actually enroll at SCSU in the fall semester. These methods will be tried on past data to gauge how effective they are in predicting the number of new students.

**Presentation Index:** B-B 27      **Present Time:** 9:00 AM

<b>Student Presenter(s):</b>	<b>Sponsor(s):</b>	<b>Department(s)</b>
Lian, Wen; Lu, Zeqing; Nwoke, Uchechukwu	Robinson, David	Statistics

### A New Public Health Epidemic

Sexually transmitted diseases (STDs) are infectious diseases acquired through sexual contact with an infected person. There are different types of STDs such as chlamydia infection, oral or genital herpes, gonorrhea, hepatitis A, B and C, syphilis and HIV/AIDS, and others. Some of these diseases can be transmitted through blood contamination, using the same infected needle. Humans are sexually active from a very young age until they are elderly. It might slow down with time but there is usually some degree of sexual need throughout life. Although most people think of a sexually active person as a young adult, the elderly population is at a higher risk for STDs, and this is because of the lack of sexual education targeted to this segment of the population. Our objective is to raise awareness about the problem of STDs among the elderly population in the U.S. This study is based on a literature review, including reported statistics from the Centers for Disease Control (CDC). Contrary to common belief, the literature shows that elderly people are sexually active. For example, elderly women think that once they pass menopause, they do not need to be worried about becoming pregnant, which creates the need for more health education and promotion about sexually transmitted diseases among the elderly population. This population needs to be aware about the risks that come along with having sexual intercourse other than becoming pregnant.

**Presentation Index:** B-B 28      **Present Time:** 9:00 AM

<b>Student Presenter(s):</b>	<b>Sponsor(s):</b>	<b>Department(s)</b>
Karki, Sanjina; Girmay, Mehret	Antunez, Hector	Kinesiology, Health and Physical Education

## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

### Inhibition of L- Glutamate Induced Planarian Seizure Activity by Riluzole

Planarians, known as flatworms, are non-parasitic invertebrates belonging to the phylum, *Platy-helminthes*. Biochemical and immunochemical analysis show planarians to contain all neurotransmitters found in vertebrates and a bilaterally symmetric nervous system similar to humans. Previous studies show planarians as useful as simple model organisms for investigating behavioral effects of drugs; we have previously shown they can be used as quantifiable endpoints for detecting effects of chemoconvulsant and anti-convulsant agents. This study focuses on use of a planarian model system to test effects of riluzole hydrochloride on L-glutamate induced planarian seizure-like activity (pSLA). Riluzole-HCl is characterized as a unique psychotropic agent exhibiting anti-convulsant, hypnotic, anxiolytic, anti-ischemic, and anesthetic properties. Model organisms exhibit seizure activity when the balance between excitation and inhibition in the brain is altered. We hypothesize L- glutamate to induce seizure-like activity (SLA) in planarians and then the glutamate-receptor antagonist, riluzole-HCl, will inhibit the L-glutamate induced SLA. Planarian seizure-like activity (pSLA) trials were conducted at five different concentrations of L-glutamate, 0.01, 0.1, 1, 3, 10 [mM]. Ten planarians were tested in each concentration of L-glutamate as well as in the presence of artificial pond water (APW, control). The pSLA inhibition capability of riluzole was then tested using solutions containing 1, 10, 100, 200, and 500 [ $\mu$ M] riluzole with a constant concentration of 3mM L-glutamate. After conducting these pSLA trials, it was clear that riluzole had a dramatic effect on seizure-like activities caused by L-glutamate. Riluzole decreased the amount of seizure activity with a greater efficiency as the concentration of riluzole was increased. Experimentation of seizure activity on planarians can be seen on a broad scale to possibly be an efficient means for screening anti-epileptic drugs.

**Presentation Index:** B-B 29      **Present Time:** 9:00 AM

<b>Student Presenter(s):</b>	<b>Sponsor(s):</b>	<b>Department(s)</b>
Nelson, Briegette; Eggerichs, Michael	Ramakrishnan, Latha	Chemistry

### Eyewitness Testimony: What Law Enforcement Personnel Have Been Doing Wrong

Fundamental to the legal system is eyewitness testimony, a compelling form of evidence. Wrongful convictions have been a direct result of the perceived confidence with which the information has been reported by the witness. Information is perceived as being accurate when it is reported with confidence and such a relationship may not be valid. Another variable that can impact testimony accuracy are misattribution errors. An example would be reporting bystander characteristic as those of the perpetrator. Preliminary data from our lab revealed that college students report fewer misattribution errors after a delay relative to when they are asked to report details immediately. Additionally, data collected by our colleagues in Michigan have revealed that confidence ratings increase across repeated report sessions for older adults (M age = 76). These findings are important because they suggest that immediately asking a witness questions about the event may produce inaccurate details (e.g., misattribution errors) with high confidence levels. In the present study, we manipulated the time before the witness reported what they saw (e.g., 50 minutes) and examined the impact on misattribution errors and confidence levels over repeated trials. Our goal is to establish opportune timeframes ("windows of opportunity") within which law enforcement personnel should ask witnesses questions. We hypothesize that these windows will vary as a function of age; children will have a substantially different window than that of young and older adults. Law enforcement agencies have been assuming that the earlier one gets to a witness the more accurate the information. Based on our findings, we recommend that law enforcement personnel wait (as defined by our windows) if they wish to maximize eyewitness testimony accuracy.

**Presentation Index:** B-B 30      **Present Time:** 9:00 AM

<b>Student Presenter(s):</b>	<b>Sponsor(s):</b>	<b>Department(s)</b>
Justin, Hannah	Widner, Robert	Psychology



## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

### Flow Cytometric Quantification of T- and B-cells in the Fathead Minnow (*Pimephales promelas*) with Treatments of Opioids and Antidepressants

It is well known that pharmaceuticals, such as opioids and antidepressants, are present in our rivers and lakes. Much is known about their effects on the immune system of mammals, but not on fish. Opioids act through MOR, DOR, and KOR receptors onto immune cells, thus modifying immune system condition. Antidepressants such as Selective Serotonin Reuptake Inhibitors (SSRI) increase serotonin concentration in the synaptic cleft by preventing serotonin from reentering presynaptic cells. Two major populations of adaptive immune cells are T- and B-cells. The aim of our study was to investigate whether opioids and antidepressants affect T- and B-cells in the fathead minnow. We hypothesize that exposure to opioids, as well as antidepressants, in the concentrations found in the river and lakes, will reduce number of T- and B-cells in fathead minnow's lymphoid organs. In order to study T- and B-cells in fathead minnow, there should be particular antibodies that bind specific markers of these cells. We obtained such antibodies from Dr. Bromage (U.S. Veterinary Immune Reagent Network) that detect fathead minnow's T- and B-cells. For twenty-one days, each group of ten male fish will be exposed to ethanol buffer (control group), and opioids or antidepressants dissolved in ethanol buffer (two experimental groups). The fish will be euthanized for spleen and anterior kidney cell extractions. A single cell suspension of white blood cells will be prepared after rupturing erythrocytes with ACK lysis buffer. The number of cells per sample will be counted with a hemocytometer. One million cells per sample will be stained with a primary antibody (anti-CD3 for T- and 6D12 for B-cells) and fluorochrome (PE)-labeled secondary antibody. The stained samples will be analyzed by flow cytometry (BD FACSCalibur). Flow cytometer will generate dot plots that would allow calculations of T- and B-cell populations in control and drug-treated groups.

**Presentation Index:** B-B 31      **Present Time:** 9:00 AM

**Student Presenter(s):**

Pravdica, Cecilie; Kasten, Kody; Alkhatib, Einas; Ivanova, Jelena

**Sponsor(s):**

Cetkovic-Cvrlje, Marina

**Department(s)**

Biological Sciences

### Stearns County Public Health Referrals

A lack of knowledge about why a decrease in referrals from health care facilities to Stearns County Public Health (SCPH) programs exists. There is a decrease in referrals to public health programs from Stearns county healthcare providers, which affects overall public health. A list of 39 contacts, provided by SCPH, was randomly assigned to the researchers. Additional agencies were contacted in order to obtain an adequate sample size via telephone interviews from 10/25/11 to 11/8/11. A script was used to initiate conversation and contacts were given various ways to participate. Data was recorded through the web-based Survey Monkey. Of the 41 contacts, 26 replied and none refused. Knowledge and communication were the key barriers in the referral process. Approximately 75% of health care professionals surveyed had never viewed the SCPH website. The preferred methods of receiving information regarding SCPH services were presentations and emails/electronic newsletters. Of health care professionals, 46% responded that SCPH services were helpful to their clients. Of health care professionals, 76% surveyed responded that clients were accepting of SCPH services. Although participants were familiar with services offered by SCPH, they were less likely to report familiarity with who would qualify and how to refer for services. Providing a PowerPoint presentation regarding information about SCPH services and their referral process to healthcare agencies may improve knowledge of such services, as well as developing a monthly electronic newsletter for agencies to improve communication. Listing each service offered by SCPH with individual contact information could be posted on their website and emailed to health care agencies in order to ease availability. Based on study findings, recommendations were developed focusing on improvement of communication and increasing knowledge of SCPH services for health care agencies.

**Presentation Index:** B-B 32      **Present Time:** 9:00 AM

**Student Presenter(s):**

Nelson, Kayleen; Stone, Lara; Klug, Savannah; Bartkowitz, Marissa; Brix, Rachel; Noggle, Laura; Goenner, Cecilia; Greene, Eric; Lee, Ka Ye

**Sponsor(s):**

Lenz, Brenda; Hiemenz, Melinda

**Department(s)**

Nursing Science

## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

### Using Quality Points as an Indicator of Student Performance

Predicting GPA (grade point average), and thus retention of students admitted provisionally at St. Cloud State University, is presented. Some students who apply at SCSU are deficient in some areas of college preparation, such as mathematics, reading, or writing. Placement of students into DGS (Division of General Studies) is done to aid these students in being ready for college-level coursework. This placement has historically been done based on the expert judgment of admissions staff at SCSU. We desire to improve the process through the use of regression analysis, to predict how well the students will perform, with or without DGS assistance, based on their high school achievement and ACT scores. We use this technique to predict quality points and GPA for the SCSU students in the model. Useful variables from high school records include high school GPA and class rank. When used in combination with other variables, such as date of application, gender, and distance from home to St. Cloud, we get a model which does a good job of helping us predict which students will succeed at St. Cloud State University.

**Presentation Index:** B-B 33      **Present Time:** 9:00 AM

<b>Student Presenter(s):</b>	<b>Sponsor(s):</b>	<b>Department(s)</b>
Ahlijah, Martin; Lee, Yunsung; Traore, Damien; Savadogo, Alassane; Duong, Quyen	Robinson, David	Statistics

### Incarceration Statistics in United States

The high incarceration rates in the United States helps us to understand inequality in society. Without understanding this problem we cannot understand the resulting effects. By removing so many people from the workforce, it conceals the unemployment rate because people in the jail or prison population are not calculated in unemployment statistics. It also creates more single parent homes. Children grow up without having their father in their lives. Without having fathers to help support their children, many mothers end up having to rely on welfare assistance to raise their children. The effects are multifold. The method that I used to complete this project was done by analyzing two textbooks, and statistical information from the Bureau of Justice. The most important implication of the statistics from this study is that a disproportionate number of Black men are in jail or prison compared to White and Latino men. An interpretation of these results reveals that Black men do not actually commit more crimes per say. They are victims of higher conviction rates simply based on the color of their skin. White men have a lower conviction rate for the same type of crimes.

**Presentation Index:** B-B 34      **Present Time:** 9:00 AM

<b>Student Presenter(s):</b>	<b>Sponsor(s):</b>	<b>Department(s)</b>
Howland, Jennifer	Zuo, Jiping	Sociology and Anthropology

### Genetically Modified Organisms are a Health Risk to Children

Studies have shown that the more foods containing genetically modified organisms, the greater the chance we are to suffer harm from them. This is especially true for children; children are not fully developed and are more susceptible to allergies, nutritional problems, and are at a greater danger from antibiotic resistant diseases.

**Presentation Index:** B-B 35      **Present Time:** 9:00 AM

<b>Student Presenter(s):</b>	<b>Sponsor(s):</b>	<b>Department(s)</b>
Kelly, Valerie	Lindstrom, Sheila	Sociology and Anthropology

## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

### Investigations into the Burghduff Site, S.D., Using Radiocarbon Dating and Phytolith Analysis

The goal of this research was to identify an accurate date of the archaeological Burghduff site located near Ludlow, South Dakota. This was accomplished through radiocarbon dating of animal bone recovered from the site. Animal bone was selected for this test because it may represent human occupation in the form of animal butchery and processing, a theory which is further supported through the recovery of stone tools at the site. The original research design called for charcoal that had been recovered during excavations prior to 2011 to be used as a medium for radiocarbon dating. However, further excavations at the site during the summer of 2011 revealed that the charcoal was actually from a rodent burrow, and not from any form of human occupation. Therefore, animal bone from a different section of the site was selected for radiocarbon dating. The bone was directly associated with a cultural occupation that has been dated between 9,000 – 10,000 14C yrs. B.P. at other sites on the western Great Plains. If the radiocarbon date of the bone correlates with what has been observed elsewhere, the result will indicate that the stone tools recovered from the site correlate to the age of the animal remains. This further implies that the site is a Cody complex animal processing site of the Paleoindian tradition. This is important because the Paleoindian tradition is one of the least well known of North American history, and it provides a baseline for further research. With a proper date established, understanding site use in relation to vegetation and climate becomes possible through the use of phytolith analysis. Phytolith analysis examines plant remains recovered from soil samples in order to reconstruct vegetation found at the site. I am currently conducting this analysis from soil samples recovered from the site.

**Presentation Index:** B-B 36      **Present Time:** 9:00 AM

**Student Presenter(s):**

McQuin, Michael

**Sponsor(s):**

Muniz, Mark

**Department(s)**

Anthropology and Sociology

### Orbital Stability of an Exoplanet Undergoing Mass Loss

The extra solar planets HD 209458b and HD 189733b are classified as hot Jupiters: Jupiter-like planets that, after some gravitational interaction in the past, have migrated to orbits very close to their parent star. Both exoplanets have been observationally discovered to be losing mass to the surrounding space. While the mechanism of the mass loss is not fully understood, currently it is believed to be due to the very high temperatures of the upper atmosphere providing gas particles enough energy to escape the gravitational pull of the planet. The mass loss rate for HD 209458b, which has been more thoroughly studied, has been restricted to between 80 and 400 million kilograms per second through observations with Hubble Space Telescope. The goal of this research was to investigate the effects of this mass loss on the long-term orbital stability of HD 209458b to determine if the mass loss would result in the planet crashing into its' parent star, spiraling out of the star system, or remaining stable.

**Presentation Index:** B-B 37      **Present Time:** 9:00 AM

**Student Presenter(s):**

Roettger, Timothy

**Sponsor(s):**

Haglin, Kevin

**Department(s)**

Physics and Astronomy

## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

### The Negative Effects of Anzen Shinwa on the Great Tohoku Earthquake

The March 11, 2011 Earthquake in Japan is considered one of the three greatest Japanese earthquakes of this century. As 10% of all earthquakes the world occur in the island nation of Japan, Japan is no stranger to earthquakes or the following tsunamis. For this reason, Japan was better equipped than countries such as Haiti in dealing with a mega-earthquake as a result of the lower death toll. However, despite the frequency of these natural disasters, many measures taken to prevent damage from earthquakes and tsunamis failed to do their intended job. This is particularly notable in the case of the Dai-ichi Fukushima Power Plant which came to overshadow the massive destruction of the tsunami in Iwate, Miyagi, and Fukushima. The Japanese Government and electric companies have used 安全神話 Anzen Shinwa, the myth of safety to stifle open conversation about the risk of power plants in the case of an earthquake or tsunami. This false idea of safety has decreased Japan's ability to protect themselves from mega-earthquakes. This article explores the scope of devastation by this mega-earthquake, how the idea of Anzen Shinwa 安全神話 negatively affected Japan's ability to prevent and respond to this disaster, how this has affected sentiment about the government and TEPCO, and what can be done to prevent a disaster of this magnitude.

**Presentation Index:** B-B 38      **Present Time:** 9:00 AM

<b>Student Presenter(s):</b>	<b>Sponsor(s):</b>	<b>Department(s)</b>
Sprinkle, Tamara	Blinnikov, Mikhail; Ness, John	Geography, Planning and Community Development, History

### Female Genital Mutilation

Female Genital Mutilation is a cultural tradition that includes cutting the genitals without any proper medical procedures. Today, over a million females around the globe are subjected to female circumcisions. My study will explore primarily the cultural aspect of why it is so important to circumcise females at a young age. I will particularly focus on the Horn of Africa where female circumcision is so prevalent in the society in which I grew up. I want to find out why our Somali people value Female Circumcision; an ancient practice passed down to our society from ancient Egypt in the 17th Century by Arab traders. Studies have shown that the majority of young females in the Horn of Africa have undergone this FGM practice; it is embedded deeply in their culture. Traditionally, it is forced by the society for every girl to be circumcised at a tender age in order to safeguard the pride and the honor within their family.

**Presentation Index:** B-B 39      **Present Time:** 9:00 AM

<b>Student Presenter(s):</b>	<b>Sponsor(s):</b>	<b>Department(s)</b>
Yusuf, Hassan	Blinnikov, Mikhail	Geography, Planning and Community Development

### Division of General Studies and Social Norms Theory

This poster presentation will explain the findings of a health-related behaviors social norming survey done with students in the Division of General Studies (DGS), a first year program for academically "at-risk" students. The reason the study was performed was to determine what high-risk behaviors DGS students are engaging in so that appropriate education and interventions can be offered. DGS students have been identified as being at a higher risk level at the point of admission than students regularly admitted to the university. The students were surveyed during first semester for a pre-intervention baseline. To be a true social norm statistic, the data needs to reflect that over 50% of those surveyed do not engage in the unsafe behavior. When the DGS data was analyzed, it was found that it did not meet the criteria for a true social norming campaign. A more in-depth method to provoke behavior change was needed. Instead of using a social norming theory to change behavior, motivational interviewing was a better fit to what the data reflected. The poster will graphically depict the behaviors of the DGS students compared to the data gathered from the 2011 College Student Health Survey and the 2010 National College Health Assessment, and how social norming and motivational interviewing can encourage these students to change their behavior.

**Presentation Index:** B-B 40      **Present Time:** 9:00 AM

<b>Student Presenter(s):</b>	<b>Sponsor(s):</b>	<b>Department(s)</b>
Johnson, Jennifer	Klepetar, Adam	Counselor Education and Educational Psychology

## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

### PIPELine Program Policy and Procedure Manual

Over the past several years, the student population has increased significantly at St. Cloud Technical and Community College. As more students were enrolling at the college, there was an increased need for more developmental courses (classes for students that needed additional help in Reading, English and Math). In an effort to assist in student retention, the PIPELine program was created by St. Cloud Technical and Community College as a tool to assist at-risk students with their chances of academic success. Graduate students from the College Counseling and Student Development program at St. Cloud State University are utilized as advisors to assist SCTCC students in developmental courses. The program had not yet formed a policy and procedure manual, therefore, there was a need to create a document containing relevant information for the future success of PIPELine. The manual was created by incorporating research on effective advising models and also by looking at current practices of the program. The purpose of this project was to create consistency for how to train current interns and also to have one location/manual that has all of the relevant paperwork. The information collected ranges from information about SCTCC, training, advising sessions, orientation and other forms used by the interns.

**Presentation Index:** B-B 41      **Present Time:** 9:00 AM

**Student Presenter(s):**

Zeiner, Christine; Rubel, Shane

**Sponsor(s):**

Klepetar, Adam

**Department(s)**

Counselor Education and  
Educational Psychology

### Nutrient and Coliform Study of the Sauk River

The degradation of water quality due to anthropogenic activity is destroying both recreational and natural values of waterways worldwide. Fertilizers used both in agriculture, and on our lawns and gardens are often used in excess, making it one of the largest contributors to water degradation. Animal waste, if not managed properly, can also lead to water degradation. Both fertilizers and animal waste contain nutrients which can be carried to nearby waterways during periods of rainfall. This can lead to eutrophication, also known as nutrient pollution. Eutrophication can lead to undesirable changes in the structure and function of the water body. Because of biodiversity loss, fish kills, loss of natural beauty, and introduction of harmful bacteria and toxins from animal wastes, the biological, economical, and aesthetic integrity of the water body is compromised. Beginning in April 2011, a study was conducted to examine and compare the levels of nutrients and coliform bacteria of the water in the Sauk River near St. Cloud. Samples were taken weekly from sites along the Sauk River and after significant rain events. These sampling sites were located at Miller's Landing in Waite Park, MN and at the Sauk River's confluence with the Mississippi River in Sauk Rapids, MN. Water samples will be analyzed in the lab for nitrate, phosphate and ammonia (three nutrients commonly used in fertilizers). Samples will also be analyzed for fecal coliform and *E. coli* contamination. Previous data obtained from sites along the Sauk River will be used in conjunction with the new data obtained to determine any changes in the overall quality of the Sauk River.

**Presentation Index:** B-B 42      **Present Time:** 9:00 AM

**Student Presenter(s):**

Grier, Megan; Kueppers, Michael; Granlund,  
Donald; Chitrakar, Neeva; Viestenz, Robin

**Sponsor(s):**

Bender, Michner

**Department(s)**

Environmental and Technological  
Studies

## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

### Treat Your Spouse As Your Best Customer

Before getting married, everyone should set S.M.A.R.T goals. In other words, goals shall be specific, measurable, attainable, realistic, and timely. It may seem difficult to apply such guideline to marriage, but it is doable. Specificity means knowing what you want with place, time, and manner. For instance, Mary wanting to “be happily married” might rather want to “Have three kids before she turns 35”. This goal is also measurable since the woman has put a number on it. Likewise, a goal is attainable when it can be reached with available resources. If the couple already has two kids and the health of the mother does not present an issue, a third child can be welcomed. Wants are sometimes different from the reality. If the couple has no kids, and Mary is 30-years-old, unless she has triplets, this goal is not realistic. Finally, a goal is only valid in a time frame. In this case, her goal is meaningful because of the age mentioned. Couples should have two items in developing their marriage: a goal commitment and an action plan.

**Presentation Index:** B-B 43

**Present Time:** 9:00 AM

**Student Presenter(s):**  
Arpellet, Magnificat S G

**Sponsor(s):**  
Daneshpour, Manijeh

**Department(s)**  
Counseling and Community  
Psychology

### Mindfulness Based Stress Reduction Observations

The Center for Spirituality and Healing at the University of Minnesota-Twin Cities offers an 8-week Mindfulness Based Stress Reduction course that helps students find balance and gain skills to handle stress, and other challenges presented in their daily lives. Students and other participants within the course learn ways to become more present, learn breathing techniques, and find ways to avoid reacting to negative events. Participants within the group connect with one another, learn skills in mindfulness meditation, and build a connection with one another in a supportive group. My research will look at how the students begin to incorporate their learned mindfulness skills into their daily lives after their completion of the course. Looking to see what challenges arise and how the center can be a better support for their new daily practice in mindfulness.

**Presentation Index:** B-B 44

**Present Time:** 9:00 AM

**Student Presenter(s):**  
Daubert, Michelle

**Sponsor(s):**  
Macari, Daniel

**Department(s)**  
Counselor Education and  
Educational Psychology

### Putting Manual Cartographic Techniques Back into the Digital Era

In this digital age of cartography, contemporary GIS software allows us to create dot density thematic maps in a short amount of time. There is no doubt this is one of the many positives concerning Geographic Information Systems (GIS) software such as ArcGIS. However, a deeper level of knowledge and understanding about the data being mapped is no longer a priority. A cartographer needs to know little about the underlying data in order to make a map. In the days of manual cartography, knowledge of the data being mapped was of the utmost priority. The randomness of dot density mapping in GIS software violates Tobler’s first law of geography: “...near things are more related than distant things.” This Python programming language based algorithm attempts to resolve this issue and better represent reality by weighting dots closer to known points of the geographic phenomena being mapped, or the center of gravity principle.

**Presentation Index:** B-B 45

**Present Time:** 9:00 AM

**Student Presenter(s):**  
Hardwick, Daryn

**Sponsor(s):**  
Torguson, Jeffrey

**Department(s)**  
Geography, Planning and  
Community Development

## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

### Are Aerobic and Anaerobic Capacities in USSA Junior Alpine Ski Racers Improving? A Seven Year Follow-up.

Central Region 1 of the US Ski and Snowboard Association (USSA) encourages athletes to participate in annual fitness evaluations as part of the selection process for Team Central. Over the past seven years, the 20m pacer test (aerobic) and 40cm box jump test (anaerobic) have been used to estimate individual capacities. Normative data have been used to provide feedback to athletes for the last three years as a motivational tool to encourage improvement. Our purpose is to determine if providing normative data to athletes would help them achieve higher levels of fitness on the aerobic 20 m pacer test and anaerobic 40cm box jump test. Subjects (N=121) were junior alpine skiers age 10-19 and members of the Central USSA. Data were collected from 2005 to 2011 on skiers who were able to complete both the aerobic and anaerobic portions of the test. Subjects performed a 20m pacer test to determine VO<sub>2</sub>max and a 60s 40cm box jump. A trend toward a decrease in aerobic capacity for female subjects age 15-19 years over this seven year period was observed (P<0.009). Although annual fitness assessments have been able to provide recommended levels and quartile rankings for athletes to achieve an aerobic and anaerobic capacity tests, no improvements have been seen in these athletes. Perhaps maintaining fitness parameters could be considered better than the downward trend seen in non-athletes of this age range over a similar time period; however, it appears clear that fitness parameters are not an area of great focus for these aspiring athletes. If athletes from Central Region 1 of USSA want to be competitive at a national level, they will have to address the deficit seen in these

**Presentation Index:** B-B 46

**Present Time:** 9:00 AM

**Student Presenter(s):**

Holmes, Kelley; Willaert, Emily

**Sponsor(s):**

Bacharach, David; Blegen, Mark

**Department(s)**

Kinesiology, Health and Physical Education

### What Most Men Do Not Know: They Can Get Breast Cancer

Breast cancer is a well-known disease among women. It originates in the breast tissue, most commonly in the inner lining of the lactiferous ducts (*ductal carcinoma*) or the lobules (*lobular carcinoma*) that supply the ducts with milk. Breast cancer is hundred times more common in women than in men; however, men have a higher mortality rate. One major factor for this higher mortality is men believe it will never happen to them. The objectives of the study are (1) to bring awareness about the severity of the issue of breast cancer disease among men and (2) to empower men to take the necessary steps of detecting and preventing the disease. Literature review and an exploratory survey were conducted to find current information. Breast cancer is caused by a series of factors that vary somewhat among men and women. Most factors are unknown, but some associated factors include obesity, infertility, exposure to exogenous estrogens, and BRCA2 mutations. All of these factors are similar to female breast cancer. Less frequent factors for men include cryptorchidism and Klinefelter's syndrome. Symptoms and treatment are similar to female breast cancer including surgery, chemotherapy, radiation therapy, and hormonal therapy. Although breast cancer is detrimentally precarious to an individual's health, if detected early, it is treatable. A healthy lifestyle and physical activity can help individuals prevent the disease, as well as help them reduce their complications while undergoing treatment. Breast cancer is a serious public health issue that must be addressed in order to improve the health and quality of life for millions of American men.

**Presentation Index:** B-B 47

**Present Time:** 9:00 AM

**Student Presenter(s):**

Nguyen, Nhan

**Sponsor(s):**

Antunez, Hector

**Department(s)**

Kinesiology, Health and Physical Education

## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

### **First Year Leadership: Creation, Implementation and Assessment of a Workshop Series for First Year Students**

Leadership workshops have shown to increase the success of students in and out of the classroom across higher education institutions. Geared towards developing and growing current leadership skills, upperclassmen tend to be the main participants. Because of this lack of representation of first-year students, a four-part workshop based in student development and leadership theories was developed and geared toward first-time leaders and/or first-year students to gain awareness of what leadership is, how to manage weaknesses and improve strengths, and how these skills can be implemented in everyday life. First-year students enrolled in COLL 150 and COLL 110 courses at St. Cloud State University were recruited to take part in the workshops. Through pre- and post-workshop surveys, the outcomes were assessed and showed knowledge gained by participants to utilize what they have learned.

**Presentation Index:** B-B 48

**Present Time:** 9:00 AM

**Student Presenter(s):**

Appicelli, Jordan

**Sponsor(s):**

Klepetar, Adam

**Department(s)**

Counselor Education and  
Educational Psychology

### **Gratuity Analysis of Food Delivery in Central St. Cloud, MN**

In any pizza delivery company there is an overall extent to which the company will deliver; this area is divided into separately labeled grids. It is always a question for employees which grids are the most beneficial to deliver to and which are not. This project will help answer that question along with the possibility of rezoning the undesirably shaped delivery grids. In a span of over three months approximately 20 random shifts of a delivery driver were analyzed by recording the total order amount, payment method, delivery grid location, date and time of the order and the overall gratuity given for the order. These numbers were then compared to a different array of social statistics for central St. Cloud, MN. With the results of this procedure, it was found that there is a significant difference between some of the delivery areas in the way that the residents order food and the way they tip. It can be assumed that the reason behind this is the different levels of wealth throughout the city. Rezoning these areas and grouping deliveries together may be more beneficial to that store, in terms of increasing sales and drivers' income. This analysis can be done with any food delivery company to help the overall operation of their store.

**Presentation Index:** B-B 49

**Present Time:** 9:00 AM

**Student Presenter(s):**

Reinking, Brandon

**Sponsor(s):**

Torguson, Jeffrey

**Department(s)**

Geography, Planning and  
Community Development

### **Sartell Dancer's Overtake Local Just for Kix Studio**

Just for Kix has been a standing dance company for over 30 years. With over 200 studios nationwide, the St. Cloud studio is the second largest and has a large number of students who are involved with the dance company. The question of whether or not the studio has more local Sartell students verses the number of students in the surrounding areas such as St. Cloud, Waite Park, Sauk Rapids, Rice, etc., will be answered in the research. In the St. Cloud, Minnesota area, there are six different dance studios, including Just for Kix. However, having more students from one area verses other areas is a result of higher income, or higher activity rates within the certain area. The methodologies used to conclude involved pulling student data (i.e. the city they live in) from the past three years and running a regression to see if there is a relation to having more local kids than surrounding areas. In concluding the research, I hope to find the reason behind why the St. Cloud studio has more kids from a certain area.

**Presentation Index:** B-B 50

**Present Time:** 9:00 AM

**Student Presenter(s):**

Le, Tuan

**Sponsor(s):**

Torguson, Jeffrey

**Department(s)**

Geography, Planning and  
Community Development



## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

### Charge Carrier Mobility of Single Crystal Organic Semiconductors : Effects of Structure & Molecular Packing

Molecular organic semiconductors are on the forefront of a more cost effective way to produce the next generation of electronic devices. Conjugated organic molecules are being investigated because of their potential electrical conductive properties. The overlap between the pi orbitals throughout an organic crystal lattice allows the movement of electrons throughout the system. The charge carrier mobility, a figure of merit, is used to define the conducting properties of organic crystals by representing how quickly an electron can move through the crystal when placed in an electric field. The charge mobility can be influenced by the structure, orientation, and other properties of the material. Organic molecules such as tetracene and tetrachlorotetracene are excellent candidates because of their conjugated systems.

**Presentation Index:** B-B 51      **Present Time:** 9:00 AM

<b>Student Presenter(s):</b>	<b>Sponsor(s):</b>	<b>Department(s)</b>
Voeller, Keith	Neu, Donald; Lidberg, Russell	Chemistry, Physics and Astronomy

### First Year Programs and Study Abroad: The Transition Home

St. Cloud State first-year students currently have two study abroad programs they can participate in during their second semester: England and South Africa. In working with the South Africa First Year Experience Program, it is apparent that we spend the majority of time preparing them for their experience abroad. While this focus is natural and unsurprising, it brings with it the question of what we do to prepare our students for returning home after their experience. The transition home can often be an even more difficult experience than initially adjusting to a new place or culture. Past participants in the South Africa First Year Experience program were surveyed to understand their transition experience home, how prepared they felt they were for that experience, and what they think could be done to help facilitate a successful transition back to life at home. This information assists us in understanding the experience of our first-year students that participate in study abroad programs and points us in the direction we should go in helping students in the transition home.

**Presentation Index:** B-B 52      **Present Time:** 9:00 AM

<b>Student Presenter(s):</b>	<b>Sponsor(s):</b>	<b>Department(s)</b>
Krznarich, Lauren	Klepetar, Adam	Counselor Education and Educational Psychology

### Supply Chain Management Risks and Remedies in International Business

Unforeseen political and legal issues can raise the risks in international supply chains and cost a company financially. The purpose of this study is to examine three recent cases in which global companies have suffered financial losses due to those unforeseen risks along the supply chain, and the recommendations of experts. The study will be of value to professionals and scholars in the field of operations and supply chain management, and international business.

**Presentation Index:** B-B 53      **Present Time:** 9:00 AM

<b>Student Presenter(s):</b>	<b>Sponsor(s):</b>	<b>Department(s)</b>
Dickey, Jordan; Cai, Shoujie; Yin, Feng	Polacco, Alexander	Management

## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

### The First Annotation of the Arginine and Proline Biosynthetic Pathways of *Thiomicrospira crunogena* XCL-2

*Thiomicrospira crunogena* XCL-2 is a member of a group of deep sea thermal vent inhabitants. It is a spiral shaped sulfur oxidizing gammaproteobacteria with a genome that is 2,427,734 base pairs. Understanding the unique biology of organisms that live in extreme environments may lead to novel chemical processes heretofore never observed on the planet earth. The genome of *Thiomicrospira crunogena* has been completed by the U.S. Department of Energy Joint Genome Institute. SCSU has undertaken the task of determining whether or not the genes for biosynthesis of amino acids are present using comparative genomics. The primary amine on the alpha carbon chain of the glutamate semi aldehyde forms a Schiff base with the aldehyde which is then reduced, yielding proline. Hypothetically, proline cannot exist in an alpha helix as it does not have hydrogen on the alpha amino group. Arginine is an essential amino acid that plays an important role in Nitrogen Metabolism. It is well designed to bind phosphate anion, and is often found in the active centers of the proteins that bind phosphorylated substrates. Although there are six codons in the genetic code for arginine, it is one of the least frequent amino acids. We hypothesize that these amino acids have biosynthetic pathways in *T. crunogena* and that we will be able to identify the genes responsible for the synthesis of these amino acids using a comparative genomics approach.

**Presentation Index:** B-B 54      **Present Time:** 9:00 AM

<b>Student Presenter(s):</b>	<b>Sponsor(s):</b>	<b>Department(s)</b>
Chitrakar, Baadal; Acharya, Jyotindra	Kvaal, Christopher	Biological Sciences

### The First Annotation of the Histidine Biosynthetic Pathway of *Thiomicrospira crunogena* XCL-2.

*Thiomicrospira crunogena* XCL-2 is a member of a group of deep sea thermal vent inhabitants. It is a spiral shaped sulfur oxidizing gammaproteobacteria with a genome that is 2,427,734 base pairs. Understanding the unique biology of organisms that live in extreme environments may lead to novel chemical processes heretofore never observed on the planet earth. The genome of *Thiomicrospira crunogena* has been completed by the U.S. Department of Energy Joint Genome Institute. SCSU has undertaken the task of determining whether or not the genes for biosynthesis of amino acids are present using comparative genomics. Histidine is an amino acid containing an imidazole functional group that is positively charged and aromatic. This functional group is a part of catalytic sites in many enzymes, because it is a nucleophile in its basic form. Its pKa (6.04) is near physiological pH, which allows it to perform general acid and/or base catalysis depending on its protonation state, a useful aspect of an enzyme's catalytic groups. Using a comparative genomics approach, we hypothesize that *Thiomicrospira crunogena* XCL-2 will have a histidine biosynthetic pathway in its genome to utilize histidine and that we will be able to identify the genes responsible for the biosynthesis of histidine.

**Presentation Index:** B-B 55      **Present Time:** 9:00 AM

<b>Student Presenter(s):</b>	<b>Sponsor(s):</b>	<b>Department(s)</b>
Eisenschenk, Glen; Lamsal, Vivek	Kvaal, Christopher	Biological Sciences

### Applying Succession Theory to Invasive-Dominated Prairie Areas

Invasive species have become a serious economic and ecological issue. Historical treatments of these areas infested by terrestrial exotic species consisted of single treatment herbicide application, and frequently areas treated were reinvaded. This observation has led to integrated management that features several different techniques. In this experiment, the effects of four seedbed preparations, the use of a cover crop, and distribution method of native seeds will be evaluated, alone and in combination with a selective broadleaf herbicide, Milestone. Targeted species include Spotted Knapweed (*Centaurea maculosa*) and Common Tansy (*Tanacetum vulgare*); both species have infested and degraded area on Camp Ripley, Minnesota. Site manipulation began in 2010 and was completed during the 2011 growing season. Data collection includes senescent and emergent percent cover of targeted invasive, cover class surveys and biodiversity counts. By the end of 2013 recommendations should be able to be made addressing; seedbed preparation; use of Canada wild rye (*Elymus canadensis*) as a cover crop; distribution method of native seeds; and the use of Milestone for effective control of targeted invasive species.

**Presentation Index:** B-B 56      **Present Time:** 9:00 AM

<b>Student Presenter(s):</b>	<b>Sponsor(s):</b>	<b>Department(s)</b>
Malone, Kayla	Arriagada, Jorge	Biological Sciences

## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

### Opportunities for Green Sourcing Along the SCSU Supply Chain

Increasingly, universities and colleges in the United States are adopting green sourcing in their supply chains. The social and economic benefits are very evident. This study examines a sample of the best practices among the top adopters and provides recommendations for those practices that might be applicable to SCSU.

**Presentation Index:** B-B 59      **Present Time:** 9:00 AM

<b>Student Presenter(s):</b>	<b>Sponsor(s):</b>	<b>Department(s)</b>
Fiala, Emily; Boreland, Roshane; Price, Travis	Polacco, Alexander	Management

### Parents' Medical and Support Services Informational Needs Related to Children with Trisomy 13 or 18

Researchers developed a survey related to parents' informational needs regarding children with trisomy 13 or 18. This study identifies medical and support services information parents of children with trisomy 13 or 18 receive, when they receive it, how helpful the information was. The study also explores other topics parents report were discussed by health care professionals that were helpful for them. Parents reported on twelve medical topics and ten support services topics. Researchers analyzed 106 surveys regarding 63 children with trisomy 13 and 43 children with trisomy 18. Over 70% of parents reported receiving survival statistics, prognosis, causes, genetic counseling, DNR, life-saving measures and alleviating parental fault. Fewer parents reported receiving information on other topics. Of the parents that reported receiving medical information, approximately half reported receiving most topics prenatally. Most support information was received within the first month of life, or later. Critical medical information prenatally included survival statistics, prognosis, birthing plan, child's medical team, surgical options, DNR, and life-saving measures. Helpful prenatal medical information included causes, prevalence, and genetic counseling. Critical medical information at birth included pain information and recognizing illness. Critical prenatal support information included physical development, support groups, emotional aspects, and alleviating parental fault. Critical support topics at birth were home-care and financial topics. How their child would learn to communicate, smile, and home health care availability were reported as critical support services within the first month of life. Critical support information later included daycare availability. There was a significant difference in the amount of medical and support information parents reported receiving. Parents described other helpful information from specialists, other hospital staff, information parents found independently, and information from support organizations. Some parents indicated that they did not receive any additional helpful information.

**Presentation Index:** B-B 60      **Present Time:** 9:00 AM

<b>Student Presenter(s):</b>	<b>Sponsor(s):</b>	<b>Department(s)</b>
Blomstrom, Susan	Devers, Monica; Nelson Crowell, Rebecca	Communication Sciences and Disorders

## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

### Generational Differences in Emerging Adulthood

This project utilizes the findings of Dr. Jeffrey Arnett in 2000, regarding the developmental stage he researched and termed Emerging Adulthood. This stage falls in between Erik Erikson's psychosocial stages of Adolescence and Young Adulthood. Emerging Adulthood looks at individuals in the 18-29 age range, and how their developmental path has altered compared to the previous generation (or approximately 50 years ago). This developmental stage is relatively new to the field, yet the societal implications have been quite dramatic. Emerging Adulthood is seen as a time of self-exploration, identity formation, fostering of independence and interdependence, as well as a time of instability. Because this life stage has changed over the years, it is important for educators, students, parents, and citizens in general, to realize the significance of this stage, what societal/cultural shifts led to it, and how this new life stage is now impacting society. Students in a first-year transition/seminar course will conduct an interview with an older adult (age 40 or older) that examines how the interviewee experienced this stage of life over twenty years ago. Students will then compare their current Emerging Adulthood experience to the interviewee, and write a paper summarizing the interview along with the interviewer's own experience. This qualitative data will be organized into themes. Quantitative data will be obtained through the interviewees and interviewees completing the "IDEA Instrument: Inventory of the Dimensions of Emerging Adulthood". Through this project, a greater understanding of Emerging Adulthood will hopefully occur—not only for instructors presenting/teaching the theory, but for students and older adults participating in the project. The information revealed in this project could also aid professional helpers in assisting students through Emerging Adulthood.

**Presentation Index:** B-B 61

**Present Time:** 9:00 AM

**Student Presenter(s):**

Soldner, Abbey

**Sponsor(s):**

Klepetar, Adam; Barth, Carrie

**Department(s)**

Counselor Education and  
Educational Psychology

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**Session C-G**

**Communicating with Asia II**

**Granite**

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### Cultural Significance of Weddings in China

Weddings in China are one of the most important events of a person's life. A family is directly represented in a wedding and that is not taken lightly. In this presentation we will see the sacrifices and preparations that are taken in making a great traditional wedding in China through article research, and an interview with a Chinese foreign exchange student. The audience will be able to better understand a small part of one of the cornerstones of Chinese culture. A culture that is anchored in family values and honor, a culture that is one of the oldest and certainly most interesting of all time.

**Presentation Index:** C-G 1

**Present Time:** 9:30 AM

**Student Presenter(s):**

Hiivala, Braeten

**Sponsor(s):**

Pryately, Margaret

**Department(s)**

Communication Studies

## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

### Truth in China: An Eastern Reflection on Honesty

Our engrained, ethical values are often taken for granted, even when these things lead much of our life. As an example in Western cultures, we often have a very negative connotation with lying; it is continuously solidified in us throughout life. Its opposite, truth in the form of honesty, is treated as a good term, as something more righteous than all else. The Chinese, however, have another valid perspective on this matter. They, among other Eastern cultures, value the relationship, the common bond between individuals more than they value being forthright with one's words. Lying is seen as the only humane route to go when the truth may even slightly cause someone to lose face. The Eastern truth tends to focus on and be found within the connections an individual has with others. In order to understand how these differing perspectives takes shape, it is best to look at the origin of these values, where they derive from. More than any other influence, religion has the utmost ability to sway the values of society. Therefore, it is both basic and previously unearthed to see how Confucianism, Taoism, and Buddhism have created the Eastern truth. Then with a mutual, critical reflection on both versions of truth here described, the inevitable conclusion will be an acknowledgment of an even greater truth, a truth that appears only to be found in Utopia. However, if these two worlds, these two ideologies are brought together, then there will be no doubt that one will be able to create the synergy necessary to have a higher level of truth in one's personal life.

**Presentation Index:** C-G 2

**Present Time:** 9:40 AM

**Student Presenter(s):**

Wolfe, Bradley

**Sponsor(s):**

Pryately, Margaret

**Department(s)**

Communication Studies

### Who is the Fairest of Them All?

Women all over the world feel the pressure of attaining beauty. However, beauty and the standards associated with it differ by region, country, even city to city at times. In India specifically, the use of skin lightening products is an ever-growing and harmful industry, both physically and psychologically. This issue goes largely unreported, while the cosmetic and skin care companies continue to profit off of these women's insecurities. Pale skin in India is desired because it is attributed to prestige, wealth, and is therefore valued by many women as beautiful. In order to gain a deeper understanding of the cultural underpinnings in relation to women and their skin color, research has been done including articles and books read, and one film watched, to better explain why lighter skin is valued in India in comparison to darker skin. As a result of my research, I have learned that for the skin care and cosmetic companies, this issue is continuing to grow and earn them more profits, despite the harmful side effects that it has on the women of India both physically, and psychologically. I have learned that although I may not have the answer, providing the information to others can help to raise awareness of the issue, and hopefully will contribute to movements of appreciating oneself and one's skin color.

**Presentation Index:** C-G 3

**Present Time:** 9:50 AM

**Student Presenter(s):**

Wright, Abigail

**Sponsor(s):**

Pryately, Margaret

**Department(s)**

Communication Studies

### Cultural Precedence of Gold in India

After analyzing five articles pertaining to gold and India's hunger to consume it, it was discovered that gold is the primary investment in India. Understanding this demand can help everyone gain a new perspective on gold and learn an interesting aspect of a different culture. Gold is a precious metal recognized as valuable by everyone in the world. India is no exception, being a country that buys a considerable portion of the world's gold supply. Possessing gold has been seen as a long-standing tradition for marriage and family investments alike. There is an attitude that gold is the only tangible good worth investing in that will only appreciate in value over time. This also translates into gauging the status of a family because the more gold a family has the more financially stable they are and the more well-off they appear. Indians start buying and saving gold for their children as soon as they are born and can afford to do so. They continue this until their children marry, at which point the gold is passed on to the new family.

**Presentation Index:** C-G 4

**Present Time:** 10:00 AM

**Student Presenter(s):**

Ferris, Andrew

**Sponsor(s):**

Pryately, Margaret

**Department(s)**

Communication Studies

## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

### The Relevance of Saju Cafes in Korean Culture

This research takes a look at the relevance of fortune-telling in order to help us understand the Korean culture. Fortune-telling stems from Shamanism which is one of the many religions practiced in Korea still today. Fortune-telling was traditionally performed by a Shaman as a sacred tradition but today it is used as a form of entertainment. Saju cafés have become the modern fortune-telling houses that allow customers to enjoy a cup of coffee while having their fortune told. People of all demographics visit these cafés every year to see what their futures hold. This presentation will cover the background information on Shamanism with its connection to fortune-telling and how it is used today in Korean culture. Many testimonies from customers along with many Korean web sources were used in the findings.

**Presentation Index:** C-G 5

**Present Time:** 10:10 AM

**Student Presenter(s):**

Niklaus, Jamie

**Sponsor(s):**

Pryately, Margaret

**Department(s)**

Communication Studies

### Eyes are the Window of the Soul

Before I came to the US I had never heard of blepharoplasty. This is probably why my first reaction when I heard about it was to laugh. Eye surgery does not exist in my country, Burundi, but it doesn't mean that we are not affected by the westernized concept of "beauty." In fact, even though our eyes are wide like Caucasians we do not possess the softness of their hair or the whiteness of their skin. So the case of my country is that it is affected as well by the influence of the Western society, but in a different way. Instead of having the eyes as a target, our dark skin and our kinky hair are what we are adapting to the Caucasian society in order to meet the standards of "beauty." As the years pass, this influence has increased, and what is observed in Japan is that many more people want to have eye surgery performed. The prediction of the next decade is that less than 50% of Japanese will have their original or single folded eyes. This illustrates the huge change currently operating in Japan, which is affecting a new generation. This can push one to wonder if it is going to be fully adopted in the Japanese culture or if it will redefine, in its own terms, the notion of beauty to save the next generation from westernization. The reason why I chose this topic is to understand the impact of Oriental influence on the Japanese culture.

**Presentation Index:** C-G 6

**Present Time:** 10:20 AM

**Student Presenter(s):**

Ndayiziga, Mika

**Sponsor(s):**

Pryately, Margaret

**Department(s)**

Communication Studies

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**Session** C-GN

**Teaching English as a Second Language**

**Glacier North**

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### Comparative Analysis of Acoustic Vowel Space in MN and Spanish Vowels

Given the current levels of immigration in the United States, the potential for miscommunication, and even language-based discrimination, has increased. More than ever before, an understanding of accent is needed. Studying the sounds of vowels is essential to improving our understanding of accents, as well as improving pronunciation teaching. By analyzing the vowels of several native Minnesotan speakers as well as Spanish-speakers, both male and female, this paper describes the differences in pronunciation between the two groups. Then implications for improved ESL instruction on pronunciation are given so that Spanish-speaking students in the Minnesotan community may be more readily understood.

**Presentation Index:** C-GN 1

**Present Time:** 9:30 AM

**Student Presenter(s):**

Giacomino, Lindsay

**Sponsor(s):**

Koffi, Ettien

**Department(s)**

English

## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

### **An Acoustic Account of the Allophonic Realizations of /t/**

For this project my voice was recorded saying nine different words in which the different allophonic realizations of /t/ are present. The rationale for the project is to be able to acoustically analyze the differences in these pronunciations. The relevance of the study is speech perception and how such data can improve speech recognition software. Dissecting these recordings and identifying the actual acoustic differences in these pronunciations would serve as a tool for future pedagogy in teaching second language learners as well. Using spectrogram and waveform systems, the recordings have been analyzed and data has been collected which represents the varying pronunciations. The project has taught me how to analyze pronunciations in order to assess and compare future pronunciations to that of a native speaker of English. The findings compiled will allow me to do further research to investigate pronunciation differences of second language learners.

**Presentation Index:** C-GN 2

**Present Time:** 9:50 AM

**Student Presenter(s):**

King, Amber

**Sponsor(s):**

Koffi, Ettien

**Department(s)**

English

### **Comparative Acoustic Vowel Space of Serbian and English**

Accents of English differ more in their use of vowels than in their use of consonants. Not only do vowel charts show different dialects but vowels distinguish people, not words. Vowels have several formants, the first of three which are the most important for speech perception. The values of these formants differ from vowel to vowel. The position of articulators determines the location of the formants. Characteristics of F1 are that it signals vowel height and that it has the lowest frequency. The vowel height is a difference of 200 Hz that is very noticeable for F1, i.e., for height. The Tongue Advancement is a difference of 400 Hz that is very noticeable for F2, i.e., front, central, back vowels. As the objective of any science is to be able to measure the things that are being described, through using a computer program called Praat I can measure my own vowel sounds. The data I got from my measurements of English vowels as a native Serbian speaker are compared to the measurements of vowels of US native English speakers, through vowel normalization. This project will show English vowels of non-native English speakers and provide the rationale for theoretic assumptions about vowels as the most important human speech sound. The actual data can help ESL teachers see the difference and know how far they can expect Serbian students to acquire English vowel sounds. This scientific approach to phonetics shows us the actual sounds and makes it not as abstract as it may have seemed.

**Presentation Index:** C-GN 3

**Present Time:** 10:10 AM

**Student Presenter(s):**

Marinovic, Jovana

**Sponsor(s):**

Koffi, Ettien

**Department(s)**

English

### **Critical Pedagogy in a College ESL Classroom**

This study focuses on my experiences and my students' experiences with critical pedagogy in a course offered in the College ESL program at St. Cloud State University, called "Cultural Orientation for International Students." Every new international student who has been in the U.S. for less than a year is required to take this course, which focuses on cultural adjustment to U.S. university life. I taught this course in the fall of 2011, recently after I had become interested in applying critical methods to ESL teaching. In short, critical pedagogy applies poststructuralist identity theory to classroom teaching, and it focuses on engaging the identities that students bring with them to the classroom. The goal of this study was to see how students responded to critical pedagogy and to analyze my own experience with applying this educational philosophy in the classroom. Data collection methods included student-teacher dialogue journals, observations of students, interviews, and a survey. In addition, I kept my own journal throughout the semester in order to track the reflexive-transformative nature of this critical practice. This study examines the usefulness of applying critical pedagogy to ESL teaching in this particular context, and it is intended to give other ESL teachers an idea of how critical pedagogy looks in one classroom setting to give them ideas to apply this practice to their own setting.

**Presentation Index:** C-GN 4

**Present Time:** 10:30 AM

**Student Presenter(s):**

Baertlein, Elizabeth

**Sponsor(s):**

Serrano, Ramon; Robinson, James

**Department(s)**

Educational Leadership and Higher Education, English

## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

Session C-GS

Social and Behavioral Sciences I

Glacier South

### Analysis of the Grand Portage National Monument Gunflint Assemblage

Research currently in progress is directed towards utilizing the gunflints and percussion caps of the Horseshoe Bay site (21CA201) as a temporal (and possibly cultural) indicator of the site's habitation sequence. The Horseshoe Bay site, Cass County, Minnesota, is a multi-component site with a distinct late Fur Trade period occupation that has not yet been fully evaluated. Based upon the well documented occupation period of the Grand Portage North West Company post and its geographic and cultural proximity to the Horseshoe Bay site, the gunflint assemblage of the Grand Portage site was analyzed to provide comparative data for the evaluation of the Horseshoe Bay gunflints. The Grand Portage assemblage examined consisted of 117 specimens. These were subjected to standard metric documentation and Munsell (color) classification. The gunflints were also evaluated in regards to materials source, translucency, gloss, analysis of manufacturing-related morphology, condition, and secondary use-wear patterns. This data allowed the gunflints of the assemblage to be categorized in regards to countries of origin and method of manufacture while simultaneously associating these factors with a known timeline. In addition to providing valuable comparative data with which to evaluate the Horseshoe Bay site, this research also provided evidence that suggests that the importation of English blade-style gunflints into this region may have occurred at a somewhat earlier date than is commonly understood. The application of the derived comparative data to the evaluation of the Horseshoe Bay site will provide further insight into the dating of the occupational sequence of this site and contribute to a more comprehensive understanding of the Fur Trade period in northern Minnesota and the surrounding region.

**Presentation Index:** C-GS 1

**Present Time:** 9:30 AM

**Student Presenter(s):**

**Sponsor(s):**

**Department(s)**

Mattson, Mathew

Muniz, Mark

Anthropology and Sociology

### Faunal Analysis and Taphonomy at the Hudson-Meng site, Sioux County, Nebraska

The Hudson-Meng site (25SX115), located in the Oglala National Grassland, Sioux County, Nebraska, is the location of multiple episodes of Cody complex hunter-gatherers procuring bison and conducting associated activities necessary for daily life between approximately 9,300 and 9,800 radiocarbon years ago (10,500 and 11,250 years ago). The bonebed, which is comprised entirely of Bison antiques, representing around 400 individuals, has been the main focus of previous research conducted throughout the 1970s and 1990s. Studying faunal remains recovered since 2006 from areas outside of, and stratigraphically removed from, the bonebed will add much needed information about the site overall, which is also a long-term research goal for the site. An in depth understanding of the Hudson-Meng site is important to understanding the long-term use of the larger surrounding area in the North American Plains through the Paleoindian Period beginning about 13,000 years ago and into the Archaic Period ending about 2000 years ago. Two hundred and fifty-seven faunal remains recovered from the Brady paleosol (ancient soil) since 2006 will be analyzed to determine the element and taxa of each bone as well as any cultural or natural modification. A taphonomic analysis will be conducted by identifying bone modification indicative of people processing animals or modification from natural processes and will be used to help determine whether the site is cultural or is a natural deposit. Since the bison bonebed has been the focus of past research, this faunal analysis will determine if other taxa are represented at the site. If the faunal remains are cultural, the possible subsistence strategy used in the past will be determined. The information recorded about the taxa and taphonomy will be used to determine if different areas of the site were used contemporaneously or over a longer period of time.

**Presentation Index:** C-GS 2

**Present Time:** 9:50 AM

**Student Presenter(s):**

**Sponsor(s):**

**Department(s)**

Barg, Diana

Muniz, Mark

Anthropology and Sociology



## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

### Skimming: A Comparison of the Use of Reading Strategies between Skilled Readers and Less Skilled Readers

In Japan, the contact that students have with English in their daily life is very limited. Hence, reading texts in their second language (L2) is a challenging task for the students. Often, people who use English as a second language are not good at comprehending a text as a whole. They tend to read English sentences in small sets of meaning. Skimming is one of the strategies that are used to help readers grasp the main idea of a paragraph. Observing students' use of skimming therefore is a potential key to see what the strategies are for successful reading. In this study, I compare the use of skimming by skilled and less skilled readers and compare the readers' comprehension of the text, as documented in the think-aloud-research method. Six first-year-university students were selected as participants in the study; based on their scores from a reading section of the placement test for ESL classes. Three students are skilled readers and three other students are less skilled readers. By comparing the use of reading strategies between skilled readers and less skilled readers, I investigate whether skimming improves reading comprehension. In turn, I investigate how the results of this study can be applied for teaching reading strategies in the classroom.

**Presentation Index:** C-GS 3

**Present Time:** 10:10 AM

**Student Presenter(s):**

Nakayama, Yoshimi

**Sponsor(s):**

Mueller, Isolde

**Department(s)**

Foreign Languages and Literature

### The Language of the Lost Girls

The language of the lost girls discusses a unique, aggressive, and dysfunctional language system between middle school girls. In this developmental stage, female friendships' behavior and communication patterns are characterized as savage or animalistic. Many of us are perplexed by the increase in adolescent female violence within our communities and at a loss for a practical solution. Where did we go wrong and whom should we blame? More importantly, what is the key to fixing the problem? The purpose of this study is to understand the specific aspects of a language system, made up of clichés, stock phrases, coded words, euphemisms, and slang of the lost girls. The research methodology utilizes a mixed method paradigm involving empirical data obtained through a questionnaire and qualitative data obtained through interviews with adolescent girls from a local middle school. Each of these approaches reveals different aspects of the relational make-up of adolescents and their culture. Taken together, these methodologies address the dilemma inherent in the aggression and bullying adolescent girls experience and promulgate through gossip and insults. These seemingly innocent behaviors become catalysts to power inequality and dehumanization. In summary, then, let us find the lost girls.

**Presentation Index:** C-GS 4

**Present Time:** 10:30 AM

**Student Presenter(s):**

Mason, Keesha

**Sponsor(s):**

Bineham, Jeffery

**Department(s)**

Communication Studies

## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

Session C-VN

Biological Sciences

Voyageurs North

### **Anatomy and Performance: The Contribution of Red Muscle Fibers to Climbing Endurance in Hawaiian Freshwater Fish**

Hawaiian freshwaters impose many physiological demands upon resident fish, including numerous tall waterfalls (>300m) that amphidromous juveniles must climb to reach adult habitats. Differences in muscle fiber type distribution in Hawaiian fish have previously been correlated with locomotor performance. Using an ATPase immunohistochemical stain, we examined the architecture of three climbing muscles (adductor pectoralis, adductor ventralis, abductor dorsalis) in *Sicyopterus stimpsoni*, a waterfall-climbing gobioid fish. Fish were collected from four waterfall-separated segments (n=12/segment) of Nanue stream. Red muscle fiber content of the abductor dorsalis was significantly higher in the two sites furthest upstream than in the lower sites (p=0.002), while no significant differences in fiber content were found in the adductor pectoralis or adductor ventralis muscles between sites. The adductor pectoralis muscle displayed the highest white fiber content of all muscles (p=0.001). Results suggest that the abductor dorsalis, which powers the pelvic sucking disk used by *S. stimpsoni* to adhere to the waterfall, may be the most physiologically relevant muscle in climbing. The high white fiber content of the adductor pectoralis correlates with physiological function, as it is only active to initiate each climbing bout. Differences in muscle architecture of *S. stimpsoni* explain in-stream distribution.

**Presentation Index:** C-VN 1

**Present Time:** 9:30 AM

**Student Presenter(s):**

**Sponsor(s):**

**Department(s)**

Lesteberg, Kelsey

Schoenfuss, Heiko

Biological Sciences

### **Monitoring Site-Specific Stream Characteristics in Relation to Effluent Discharge**

Flow contribution and chemical/organic pollution have been well documented in relation to effluent discharge. This study aims to separate both variables when assessing the effects on local wildlife. Fourmile Creek, located in Ankeny, IA provides a point-source effluent discharge from Ankeny's wastewater treatment plant. White suckers and bluegill sunfish were caught at sites along the creek in relation to the effluent, then dissected to view liver and gonads via histology. Fathead minnows were caged at each site for two weeks, and then retrieved to undergo the same dissection process. All fish were bled and plasma samples were obtained to quantify vitellogenin protein levels. No significant difference of vitellogenin concentration was found among sites. Macroinvertebrates were collected at each site and classified into a Simpson Diversity Index. A general decline in family diversity was seen going downstream from the effluent discharge. Some macroinvertebrate families prefer faster moving water, while others prefer more stagnant water. A subsequent spring trip will occur to sample sites further downstream to account for the dilution of the chemical/organic pollution, but still maintain the flow contribution from the effluent. This is expected to have higher diversity than the effluent site, but have a shift in the types of families seen due to the faster moving water from the flow contribution. Water samples were collected and larval fathead minnows were exposed to effluent to measure their reaction time to stimulus. Predator avoidance was not significantly altered when exposed for 21 days to effluent water. This study will have implications when examining the effects that effluent has on wildlife by looking beyond the pollution factor, and taking into account the flow contribution. It will also provide a data set before the shutdown of the wastewater treatment plant in order to study stream recovery in an effluent-impacted system.

**Presentation Index:** C-VN 2

**Present Time:** 9:50 AM

**Student Presenter(s):**

**Sponsor(s):**

**Department(s)**

Minor, Maxwell

Schoenfuss, Heiko

Biological Sciences

## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

### Contaminants of Emerging Concern: Does Early Exposure Shape Larval Survival?

Endocrine active compounds have been linked to numerous endpoints in adult fish. Few studies have examined exposure during earlier ontogenetic stages, where recruitment to reproductive maturity is greatly attenuated by predation. Contaminant induced impairment to escape performance coupled with the considerable predation during the larval stage has the potential to cause rapid population decline for short-lived species such as the fathead minnow (*Pimephales promelas*). The objective of this study was to examine the influence of 17- $\beta$  estradiol (E2) at environmentally relevant concentrations (20 ng/L and 100 ng/L) on fathead minnow escape performance. Two assays quantified larval response for individuals exposed 21-days post-hatch using 50% daily static renewal. To measure variation among innate escape behavior, performance elicited by a vibrational stimulus was captured using a high-speed camera (1000 frames/sec). Video data were digitized (ImageJ) to quantify body length (BL in mm), latency (msec), velocity (BL/msec), and total escape performance (BL/msec). To determine whether any decline in escape performance resulted in greater cohort mortality under predation, a predator a predator (bluegill sunfish—*Lepomis macrochirus*) was introduced into an arena containing both E2 exposed and control larvae. Predation was permitted until approximately half the prey remained. Treatment groups were randomized for staining using SE-Mark for post-predation larval differentiation. E2 exposure increased latency to response ( $p < 0.0001$ ), decreased velocity ( $p < 0.0001$ ), and diminished total escape response ( $p < 0.0001$ ). Survival was higher for control larvae ( $p < 0.0001$ ) with the mean proportion ( $\pm 1$  SD) equal to  $55 \pm 13\%$ . No difference was found between E2 concentrations in either assay (Survival low:  $45 \pm 0.14\%$ ; high:  $44 \pm 0.12\%$ ). Reduction in larval escape performance and survival is suggestive of a mechanism potentially influential to populations. Population modeling may provide foundational insight to understanding the influence of endocrine active compounds during early ontogenetic stages.

**Presentation Index:** C-VN 3

**Present Time:** 10:10 AM

**Student Presenter(s):**

Rearick, Daniel

**Sponsor(s):**

Schoenfuss, Heiko

**Department(s)**

Biological Sciences

### A Comparative Analysis of Two Residential Stormwater Ponds and their Ability to Reduce Contaminants

The goal for this research in partnership with the City of St. Cloud is to increase efficiency of the stormwater pond system and its current management practices. Stormwater ponds are popular in the mitigation of contaminants such as heavy metals, petroleum hydrocarbons and excessive nutrients flowing into nearby water ways from impervious substrates, other human disturbances and land use practices. Little is known about the impact of stormwater pond design on pollution removal efficacy so this study will compare two stormwater ponds of significantly different shapes within a residential area that drain into the nearby Sauk River to test the hypothesis that a high shoreline to surface ratio will favor effective ecoservices. Hydrology and hydraulics as they pertain to surface flow and resident time will be estimated for storm pulse and nonpulse events. Contaminants will be analyzed from sediment cores to establish concentrations over time and current contamination trends will be estimated by sediment samples taken from each outflow. Vegetation and macroinvertebrates will be used as biological indices of present system health. The outcome of this research will help to develop protocol in characterizing contaminants of concern, quantify level of contaminants in the source water and eliminate impairments by improving the design of stormwater ponds that the City of St. Cloud has jurisdiction over.

**Presentation Index:** C-VN 4

**Present Time:** 10:30 AM

**Student Presenter(s):**

Irving-Hewey, Ruby

**Sponsor(s):**

Schoenfuss, Heiko

**Department(s)**

Biological Sciences

**Assessment of Ring Retention and Probe Removal in Synovis GEM Flow Coupler Device**

The Synovis GEM Flow Coupler device has been specifically designed for use in end-to-end anastomosis of blood vessels. The device is also able to detect blood flow intra-and postoperatively, with the help of a 20 MHz ultrasonic Doppler probe. The Flow Coupler device consists of two rings that are held in place by a jaw assembly. The ring-jaw assemblies are available in three different sizes of 2.0mm, 2.5mm and 3.0mm; the probe is held in place by a scabbard situated on the body of the ring. The Doppler probe is removed 3–14 days post-operatively, by pulling on the probe wire that is penetrating out of the patient’s body. Research was done to assess the ring removal and probe removal forces in order to improve the functionality and performance of the device in the field. Tests were conducted to determine the coefficient of friction between the ring and jaw materials. Materials testing such as tensile tests were carried out to find the modulus of elasticity. An understanding of the coefficient of friction, the normal force between the ring and jaw material, the tolerances and the sterilization process will help explain a change in pull-out force of the rings. A 3D finite element model was used to assess stresses in the jaw/ring assembly, and replicate the physical interaction between the ring and the jaw.

**Presentation Index:** C-VS 1                      **Present Time:** 9:30 AM

<b>Student Presenter(s):</b>	<b>Sponsor(s):</b>	<b>Department(s)</b>
Patankar, Neha; Rydelius, Lukas; Yu, Xianzhi	Covey, Steven	Mechanical and Manufacturing Engineering

**A Survey to Evaluate the Effectiveness of Agile Project Management Methodology**

A considerable number of organizations continue to struggle implementing several methodologies due to their sheer complexity and the time consumed to complete the same. The need for Agile project management is immense as a number of companies are adapting Agile methodologies in order to cope with customer demands, market needs and increasing competition in today's world. As risk mitigation is one of the key areas that Agile looks into, using Agile has proven very beneficial. However, there is a flip side to this perception that it is not true to word. The focus is on the perception that by implementing Agile methodology, projects will be completed in shorter durations and that there will be reduction in the cost. A survey will be done from PMI certified project managers from companies that are using or have used Agile in the past. The goal of the survey is to examine the types of methodologies that have been effective so far and the methodologies that have failed or have taken longer than anticipated. Thus, the need for Agile project management will be evaluated and if there is a need how and where it can be implemented.

**Presentation Index:** C-VS 2                      **Present Time:** 9:50 AM

<b>Student Presenter(s):</b>	<b>Sponsor(s):</b>	<b>Department(s)</b>
Bachwani, Madhu	Shah, Hiral	Mechanical and Manufacturing Engineering

**Analyzing Behaviour of Operating Systems to Crafted Packets Using Scapy**

Operating Systems are vulnerable to malicious packet injection because of their inherent design and implementation flaws. TCP/IP stacks in different operating systems are especially vulnerable to this. Using crafted packets, we can analyze how each operating system responds to malicious packet injection. The main goal of this study is to analyze behavior of different operating systems to specially crafted packets. In this study, we created two types of attacks: TCP SYN packets with data, and overlapping fragments. We use “Scapy”, a powerful packet crafting tool using Python to craft packets with customized headers and payloads. Our results showed that Microsoft Windows operating systems are more vulnerable to TCP SYN packet attack than Linux operating systems. In fragment overlapping attack, results showed that all operating systems responded in a similar fashion with same offset value for the first fragment. Starting from second fragment, Microsoft Windows and Linux gave different results for the packets received with same offset.

**Presentation Index:** C-VS 3                      **Present Time:** 10:10 AM

<b>Student Presenter(s):</b>	<b>Sponsor(s):</b>	<b>Department(s)</b>
Abeykoon, Kasun; Abeykoon, Thusith	Ghosh, Tirthankar	Computer Science and Information Technology

## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

### Ergonomic Cart Redesign to Improve Worker Efficiency at Polar Tank Trailer LLC

Polar Tank Trailers LLC is a local manufacturing company located in central Minnesota. The company produces and sells both wet and dry tanker trailers all across the US. Polar Tank currently uses manual, four-shelved carts to transport purchased parts from the stock room to the final trailer assembly area of the facility. When fully loaded, these carts can be heavy and hard to use. Therefore, this project is focused on redesigning the current carts with emphasis on improving ergonomics and functionality. The design team is taking a continuous improvement approach to this project by utilizing employee input in conjunction with engineering principles. This project was broken up into three stages including: research and design, manufacturing and implementation, and feedback and analysis.

**Presentation Index:** C-VS 4

**Present Time:** 10:30 AM

**Student Presenter(s):**

Donnay, Nicholas

**Sponsor(s):**

Shah, Hiral

**Department(s)**

Mechanical and Manufacturing  
Engineering

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**Session** D-C

**Paper Competition** I

**Cascade**

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### Development of Immunological Assays for the Fathead Minnow (*Pimephales promelas*), a Model Species of Aquatic Toxicology

The presence of pollutants in the aquatic environment is of growing concern. Recent studies suggest that in addition to well established histopathologic, reproductive, and behavioral effects, certain aquatic contaminants may act as immunosuppressants. A loss of functional T and B lymphocytes may be responsible for this suppression. Small fish species, such as the fathead minnow (*Pimephales promelas*), are often used as bioindicators for pollutants. However, there are no established protocols or reagents available for quantifying the immune response in this model. In an attempt to address this issue, we tested 11 antibodies (2  $\alpha$ -flounder IgM antibodies, 3  $\alpha$ -trout IgM antibodies,  $\alpha$ -trout IgD,  $\alpha$ -striped bass light chain,  $\alpha$ -CD3,  $\alpha$ -CTLA4,  $\alpha$ -LCK, and  $\alpha$ -CD11) obtained from the Veterinary Immunology Network for their efficacy in flow cytometric analysis of fathead minnow lymphocytes. Lymphocytes were obtained from the spleen and anterior head kidney of 110 fathead minnows and tested against each antibody (10 fish per antibody). Positive flow cytometric staining was observed with two antibodies:  $\alpha$ -CD3 and  $\alpha$ -striped bass light chain, which can be used to quantify T lymphocytes and B lymphocytes respectively. In order to test the functional capacity of fathead minnow T and B lymphocytes, we will next determine the proliferative capacity of three mitogens—Concanavalin A (ConA), Lipopolysaccharide (LPS), and Phytohaemagglutinin (PHA) on these cells. Lymphocytes will be isolated from the spleens of 20 fish and cultured with Con A (1-10  $\mu$ g/mL), LPS (1-40  $\mu$ g/mL), or PHA (1-20  $\mu$ g/mL). Proliferation will be measured by Alamar Blue test post exposure to mitogens for 3-6 days. Development of these immunological assays will greatly augment our understanding of the consequences of aquatic pollution on exposed organisms.

**Presentation Index:** D-C 1

**Present Time:** 11:00 AM

**Student Presenter(s):**

Lesteberg, Kelsey

**Sponsor(s):**

Schoenfuss, Heiko; Cetkovic-  
Cvrlje, Marina

**Department(s)**

Biological Sciences

## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

### Keepin' It Clean

We evaluated the use of a modeling procedure to increase the use of hand sanitizer. The study was conducted at St. Cloud State University (SCSU) around lunchtime (12:00-12:30) P.M. at Garvey Commons, a student dining facility. The participants in the study were students and faculty at SCSU. During baseline, a bottle of hand sanitizer was placed on the cashiers' desk with no form of prompting. During intervention the researchers strategically placed themselves every 10th person in the lunch line. The researchers then prompted the use of hand sanitizer by using modeling, a basic principle of applied behavior analysis. Modeling was empirically evaluated using the ABAB reversal, single subject research design, where each of the baseline and intervention phases were repeated to demonstrate experimental control. The data was recorded with the use of a Canon point-and-shoot camera. Data was collected on the frequency of persons using the hand sanitizer and then converted to percentage of intervals. Data was analyzed using a visual analysis, and indicated that very few persons used the hand sanitizer in baseline conditions. Use of the hand sanitizer increased during intervention and demonstrated that modeling was an effective intervention to increase the use of hand sanitizer.

**Presentation Index:** D-C 2      **Present Time:** 11:20 AM

<b>Student Presenter(s):</b>	<b>Sponsor(s):</b>	<b>Department(s)</b>
Steffes, Ayriel; Anderson, Mallory; Becker, Marie; Cortte, Christopher; Thompson, Brittany; LeBlanc, Rachel	Edrisinha, Chaturi	Counseling and Community Psychology

### Sexual Selection in the Domestic Guppy

The study assessed an intersexual selection strategy known as mate choice copying in domestic guppies (*Poecilia reticulata*). Mate choice copying (MCC) is defined when a female's preference is influenced by another female's choice. MCC was determined by a percent change categorical system. Other behaviors such as 'MCC Aversion', 'Confusion' and indifference were also considered. Overall, the findings suggest that domestic female guppies utilize intersexual selection strategies other than MCC.

**Presentation Index:** D-C 3      **Present Time:** 11:40 AM

<b>Student Presenter(s):</b>	<b>Sponsor(s):</b>	<b>Department(s)</b>
Croghan, Katrina	Marcattilio, Anthony	Biological Sciences

### Coldwater Spring Contested: American Wilderness and Imperialism within a Dakota Homeland

Coldwater Spring, or the Coldwater unit of the Mississippi National River and Recreation Area (MNRRA), is a 27-acre portion of land contained within the Twin Cities Metro region of Minnesota. It has recently been acquired by the National Park Service (NPS) and is currently being "restored." The primary goal of the NPS is to make the site accessible as a public park. However, Coldwater Spring is part of a larger sacred landscape known to Dakota people as Bdote. Constructivist theory in political ecology states that parks and wilderness areas are social (human) constructs. Specifically, the social construction of the wilderness idea has evolved over centuries of "western" philosophical tradition. This presentation examines the extent to which the National Park Service has employed these discourses within the context of the restoration of Coldwater Spring. In addition, it examines how Dakota people perceive and interact with these discourses in response to the transition of Coldwater Spring to a public park. Analyzing these constructs and the subsequent perceptions and interactions of stakeholders with the site will determine the extent to which park discourses and the subsequent land management decisions limits access to or excludes Native people from their sacred landscapes.

**Presentation Index:** D-C 4      **Present Time:** 12:00 PM

<b>Student Presenter(s):</b>	<b>Sponsor(s):</b>	<b>Department(s)</b>
Carlson, Kelsey	Torguson, Jeffrey; Blinnikov, Mikhail; Branam, Kelly; St Clair, Darlene	Anthropology and Sociology, Geography, Planning and Community Development, Information Media

## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

Session D-G

Higher Education

Granite

### LGBT Resources at SCSU

In my paper presentation, I will discuss my research in effectiveness and quality of services offered through the LGBT Resource Center at St. Cloud State University. Research validates the significant importance of each of these services and how they contribute to College Student Development. My presentation will focus on LGBTQ identity models and how the mission and vision of the LGBT Resource Center strives to promote healthy identity development among college students. I will use a combination of qualitative and quantitative methods to back my research. Lastly, I will share my experience being a Graduate Assistant and Resource Adviser at the Center, and I will share my knowledge on current issues and trends seen in the LGBTQ Community and how we as educators can work together to end heterosexism in our academic environment.

**Presentation Index:** D-G 1

**Present Time:** 11:00 AM

**Student Presenter(s):**

Goonetilleke, Shiyanke

**Sponsor(s):**

Klepetar, Adam

**Department(s)**

Counselor Education and  
Educational Psychology

### The Reasons Why Adult Students Pursue Master Studies at SCSU

The purpose of this study was to explore the reasons why adult students of thirty-year-olds and over pursue Master studies at St. Cloud State University (SCSU). This study focused on the factors that influenced the decision of these students to choose SCSU as the graduate institution to pursue their Master's Degree. The study also explored the challenges students faced making the decision to go to graduate school and while they are studying in the graduate program. This study focused on adult students in graduate programs as this population is becoming the student majority of the campuses not only in the USA, but also in other parts of the world. Exploring the challenges this category of students face and experiences is very relevant. Structured as an ethnographic qualitative study, data was gathered from open-ended interviews with nine adult Master students at SCSU. The open-ended interviews were coded and data were categorized into general themes. Personal and social reasons impacting the decision of the adult students were explored, as well as the factors why these students chose SCSU for their graduate studies. The personal realization, as well as the requirements from the labor market came up as relevant general themes for pursuing the degree. Factors influencing the choice of the graduate institution provided information necessary to make recommendations to admissions and program advisors to increase the enrollment rate in the graduate programs. From the challenges identified by the students interviewed, the researcher made recommendations on how to support their sojourn through the graduate program. This study is of a great significance to the university and to the related departments, as well as to the School of Graduate Studies at SCSU in order to develop policies and strategies to improve the retention and graduation rate for the master programs.

**Presentation Index:** D-G 2

**Present Time:** 11:20 AM

**Student Presenter(s):**

Cenolli, Eglantina

**Sponsor(s):**

Silvestre, Gabriela

**Department(s)**

Educational Leadership and Higher  
Education

### A Study of Foundations in Minnesota: Implications for Professional Development of St. Cloud State Students

Corporate foundations are not widely understood by students in Minnesota. Their mission, vision, goals, values and impact in communities across the state are not widely known. Yet, corporate foundations offer several opportunities for St. Cloud State majors to engage in internships and to explore careers and vocation. This is a case study of 25 foundations in Minnesota, both corporate and non-corporate foundations. The focus is on their mission, vision, goals, core values and impact they make in communities across the state. This effort provides a window into several professional opportunities for St. Cloud State students.

**Presentation Index:** D-G 3

**Present Time:** 11:40 AM

**Student Presenter(s):**

Menden, Allison

**Sponsor(s):**

Eyo, Bassey

**Department(s)**

Communication Studies

## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

### Leadership Experiences of Women in Higher Education: The Case of St Cloud State University

Though women have made apparent strides since the women's suffrage movement in the early 1900s, it is still a slow process towards equal representation in United States society. Throughout history women have, and still, make up a large population of teachers in primary and secondary education. This trend carries into higher education, but in each location women rarely hold leadership positions within academia. It is even more apparent at Saint Cloud State University, where most director positions are held by men and women are present in more designated areas like nursing or administration. In an institution of higher education where all faculties have the opportunity to continue their education through a majority of resources, why is it that men still dominate the women in leadership positions. The theory of marginality along with the ideals of traditional dominance of men over women is still very prevalent in higher education. The objective of this study is to evaluate and update past theories that frame the experiences of women in the work place and explore how the patriarchal structure continues to limit leadership opportunities for women on a university campus.

**Presentation Index:** D-G 4

**Present Time:** 12:00 PM

**Student Presenter(s):**

Flores, Mariether

**Sponsor(s):**

Duque, Richard

**Department(s)**

Sociology and Anthropology

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**Session D-GN**

**Humanities**

**Glacier North**

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### McDonald's Poetry Program: McKnowledge is Potential Power

McDonald's has become an icon that has integrated itself into every facet of our lives, culture, and language. Within the McWorld, we have McChicken, McCaffe, and McInternet. Outside of the McState we can find McChurch, McMansion, McNews, and even McDreamy. McDonald's has become a cheap and convenient choice; however, we must consider other options before we are informed.

**Presentation Index:** D-GN 1

**Present Time:** 11:00 AM

**Student Presenter(s):**

Gahm, Noah

**Sponsor(s):**

Wells, Scott

**Department(s)**

Communication Studies

### Old Crow Wing: A Walking Tour of History

In Minnesota, in the 1860s, a bustling town of 600 residents existed where Crow Wing State Park is now located. This town, called Crow Wing, was abandoned within the next twenty years and its story has been nearly lost to history, save for the two remaining original buildings that still exist in the state park. How can the story of this abandoned town be told over 100 years later and be made available to the visitors of the state park? Even more importantly, why should Crow Wing's story be told at all? This project, culminating in a 3.5 mile walking tour, answers the question of why Crow Wing should be remembered by presenting the town as a microcosm of Minnesota history. Archival sources such as Indian Agent Reports, letters and photos from Crow Wing's residents, Civil War draft records and many other primary sources come together in this project to bring state park visitors the story of the birth and death of old Crow Wing.

**Presentation Index:** D-GN 2

**Present Time:** 11:10 AM

**Student Presenter(s):**

Bentley, Carol

**Sponsor(s):**

Chisholm, Bradley

**Department(s)**

Theatre, Film Studies and Dance



## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

### Glacier National Park, the Blackfeet, and the Great Northern Railway

My research focuses on the relationship between Glacier National Park and the Great Northern Railway in the early years of the park's existence, from 1910-1930. The Great Northern Railway, and in particular its president at the time, Louis W. Hill, were heavily involved in constructing the identity of the park, and tying it to American cultural identity in a way that had never been done before. In these early years of the park's existence, the Blackfeet tribes of Montana, dubbed the "Glacier Park Indians" by the railroad, were the cornerstone of their "See America First" advertisement campaign for the park. I have analyzed several newspaper articles, paintings, photographs, and other advertisement materials from the campaign that used the Blackfeet in order to promote the park. My goal in doing so was to determine what the Great Northern Railway and these advertisements, which were seen by people across the nation, said about what it meant to be a real American. More importantly, could the Blackfeet people themselves achieve that status? Above all, these advertisements show a clear separation between those people they wanted to visit the park, and those they used to promote it. The "See America First" campaign was an integral part of constructing an American national identity built around tourism, and their use of the Blackfeet people told millions of Americans what role American Indians could play in that identity.

**Presentation Index:** D-GN 3

**Present Time:** 11:35 AM

**Student Presenter(s):**

Carlson, Caitlin

**Sponsor(s):**

Wingerd, Mary

**Department(s)**

History

### Mansions of Memories: Preservation, Destruction, and the Construction of Place in Central Minnesota

Alice Whitney of St. Cloud, Minnesota, and Laura Jane Musser of Little Falls, Minnesota, held similar social positions in their respective communities. Both were heiresses to vast fortunes, both were active in local arts and culture, and both were respected philanthropists. Both of their impressive historic houses have survived into modern times, though they fulfill decidedly different roles in their cities' urban environments and thus remember their original owners in different ways. Whereas the South Side neighborhood (in which the Whitney house sits) was almost entirely destroyed in the 1960s and 1970s, Laura Jane Musser's estate emerged as a pillar of Little Falls community identity. What accounts for these dramatically different approaches to similar local pasts? How do the two communities balance competing needs and desires regarding the modern fates of their historic buildings? What can the divergent examples of these two cities teach us about community development, local heritage, and the uses of historic preservation in the modern city? To understand the motives of historic preservation—and the lack thereof—in two contrasting urban settings, a holistic approach to community history and the history of the built environment must be undertaken. Yet it remains worthwhile to maintain a close connection to the lives of individuals who experienced those built environments on a daily basis. This paper utilizes quantitative investigations into local ethnicity and socioeconomic status, statistical surveys of historic site volunteers, as well as more traditional historical sources to uncover the motives of preservation and destruction in two Minnesota cities. These approaches to questions about collective memory suggest that the nuances of preservation and destruction are best viewed through a variety of lenses that address not only theory regarding the built environment itself, but also the forces at work shaping fundamental issues in local history.

**Presentation Index:** D-GN 4

**Present Time:** 11:55 AM

**Student Presenter(s):**

Ames, Alexander

**Sponsor(s):**

Wingerd, Mary

**Department(s)**

History

## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

Session D-GS

The Student Perspective at Apollo High School

Glacier South

### Experiences of Somali Immigrant Students at Apollo High School

Our project aims to gauge the attitudes on various topics from the perspective of students attending both SCSU and Apollo Somali Students. We plan to obtain roughly five hundred telephone surveys from St. Cloud State students that reflect a general idea of the attitudes the students have about topics such as the smoking ban, politics, and drinking habits. From mostly Somali students at Apollo High School we will conduct roughly twenty qualitative interviews on their experiences in relation to food, language, and social interactions in high school. The purpose of our research is to gain insight into the everyday experiences of immigrant students at Apollo high school to develop a better understanding of the social integration they experience coming to a new culture. This knowledge can then be shared within the community to encourage better social relations. From our SCSU survey, we will report on issues of importance to St. Cloud State University and community.

**Presentation Index:** D-GS 1

**Present Time:** 11:00 AM

**Student Presenter(s):**

Berg, Michael; Fabre, Ahmed; Flores, Mariesther; LaQuier, Nicolas; LaQuier, Nicole

**Sponsor(s):**

Zerbib, Sandrine

**Department(s)**

Sociology and Anthropology

### The Effects of Temporary Employment on Somali Workers in Central Minnesota

Research for this presentation was accomplished through extensive interviews conducted with Somali workers and non-profit agencies that assist Somali refugees in obtaining work within the community. The data obtained through these interviews will be compared to the existing data found throughout the literature specific to the history of temporary labor in the United States as well as the social and economic conditions which perpetuate its growth. Based on ongoing research with Somali workers in St. Cloud, Minnesota, I have discovered the growing trend of obtaining work through temporary employment agencies. According to my data, this trend has recently emerged as the most frequent solution to the ongoing job crisis that is faced by many Somali refugees who currently seek gainful employment in the St. Cloud area. Through this research I will examine the reasons for this trend and what it means for Somali workers in terms of steady employment, well-being and economic status in the community.

**Presentation Index:** D-GS 2

**Present Time:** 11:20 AM

**Student Presenter(s):**

Anderson, Cassie

**Sponsor(s):**

Panicker, Ajaykumar

**Department(s)**

Sociology and Anthropology

### Apollo High School Survey Spring 2012

We are presenting from two different sets of data: qualitative and quantitative. We are presenting the results of the SCSU Spring Student Survey and conducting qualitative interviews at Apollo High School. We are interested in the student survey because we want a broader perspective of the student views at our school. We are doing the interview with the Apollo Somali students because we are interested in learning about their experiences transitioning from their home country into the American culture. For the student survey we are conducting telephone interviews of students enrolled in SCSU. We are conducting open ended, one-on-one interviews with current Somali students at Apollo High School, focusing on food, daily experiences, and language.

**Presentation Index:** D-GS 3

**Present Time:** 11:40 AM

**Student Presenter(s):**

Alama, Dustin; Dirks, Elizabeth; Edwards, Samantha; Schommer, Sandra; Tyson, Jacob

**Sponsor(s):**

Zerbib, Sandrine

**Department(s)**

Sociology and Anthropology

## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

### SCSU Spring 2012 Survey: Apollo High School Students

St. Cloud State University students were randomly selected to participate in a quantitative telephone survey regarding their attitudes towards multiple issues effecting present day students. Topics include but are not limited to: drinking, the upcoming political campaign and safety on campus. We were interested in learning about feelings and concerns surrounding key issues within the St. Cloud State University community. We also conducted qualitative interviews with Apollo students regarding their daily experiences as Somali immigrants and high school students. Question topics surrounded issues of food, language, day-to-day experiences and family life. We were interested in the struggles they face maintaining the balance between keeping their culture and assimilating within mainstream American culture.

**Presentation Index:** D-GS 4

**Present Time:** 12:00 PM

**Student Presenter(s):**

Cragin, Chelsie; Beebe, Taylor; Olstad, Kyle;  
Williams, Alisha; Nettleton, Angela

**Sponsor(s):**

Zerbib, Sandrine

**Department(s)**

Sociology and Anthropology

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**Session D-VN**

**Social and Behavioral Sciences II**

**Voyageurs North**

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### Filter Freaks

We evaluated a stimulus prompt procedure, based on the principals of applied behavior analysis, to examine if a stimulus prompt in the form of a sign advertising a filtered water station would increase the usage of the station to refill water bottles. The rationale for this study was to create less waste of plastic water bottles. Participants were community, staff, and students at the Atwood Memorial Center in the St. Cloud State University campus. During baseline, data was collected by recording the counts on the water filter stations. During the intervention, signs were put up around Atwood directing people to the location of the water stations. A multiple baseline across settings was used to demonstrate experimental control. The two settings used were the filter station on the second floor of the Atwood building and the filter station in the basement floor of Atwood. Results indicated that during baseline sessions when the stimulus prompt was not posted, usage of the refill station was low across both settings. Following the introduction of the stimulus prompt, usage of the water station increased across both settings indicating that the intervention was successful in increasing the participants behaviors.

**Presentation Index:** D-VN 1

**Present Time:** 11:00 AM

**Student Presenter(s):**

Torgerson, Kelsey; Schaefer, Laura; Huls,  
Calista; Motzko, Jessicajean; Schlangen,

**Sponsor(s):**

Edrisinha, Chaturi

**Department(s)**

Counseling and Community  
Psychology

### Parkers

We used visual prompts to make people aware of parking regulations. The study group was individuals parked in N-lot. Signs were posted in two nearby buildings during the intervention stating that N-lot requires a parking permit which must be obtained from public safety. During baseline, data was collected of regular parking habits. The baseline and intervention sessions were evaluated using an ABAB design. After the first baseline and intervention sessions were completed, we delayed the data collection for two weeks in order to prevent carry-over behavior. We then continued with another baseline and intervention session. We concluded that while signs were posted, the occurrence of subjects using N-lot without the appropriate permits decreased.

**Presentation Index:** D-VN 2

**Present Time:** 11:20 AM

**Student Presenter(s):**

Ebensteiner, Jenna; Terwey, Megan; Wilson,  
Kendra; Winfield, Nicole

**Sponsor(s):**

Edrisinha, Chaturi

**Department(s)**

Counseling and Community  
Psychology

## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

### Hands Off

We evaluated an extra stimulus to prompt St. Cloud State University college students to use tongs when grabbing desserts. Our subjects were St. Cloud State University college students eating dessert in Garvey Commons. Observation was conducted in the dessert section at St. Cloud State University cafeteria, Garvey Commons. During baseline, subjects were recorded acquiring desserts whether with or without tongs. During intervention, two signs were placed as an extra stimulus that said, "Please Use Tongs Thanks". Extra stimulus was evaluated using ABAB reversal-design. Following baseline, signs were placed out for three, ten-minute intervals. Following the removal of signs, baseline was recorded and signs were added again. There was an improvement of tong use during intervention. The use of tongs promotes better hygiene in Garvey Commons cafeteria at St. Cloud State University.

**Presentation Index:** D-VN 3

**Present Time:** 11:40 AM

**Student Presenter(s):**

Bang, Katherine; Ross, Brianna; Smith, Katie; Hayes, Anne

**Sponsor(s):**

Edrisinha, Chaturi

**Department(s)**

Counseling and Community Psychology

### Non-verbal Communication when Initiating Same-Sex Relationships

This study was conducted by an undergraduate Communication Studies student. The research project was aimed to identify differences between non-verbal communication in homosexuals when initiating same-sex flirting. Students identifying as lesbian or gay from St. Cloud State University were interviewed. Based on the participant's data, results showed that in general, non-verbal flirting styles tended to correlate with previous research on non-verbal gender differences. It was also found that because there are no set rules for flirting in same-sex initiations, participants were allowed to remain more fluid in their non-verbal behaviors than those who engage in heterosexual flirting.

**Presentation Index:** D-VN 4

**Present Time:** 12:00 PM

**Student Presenter(s):**

Hernandez-Wilson, Brittanie

**Sponsor(s):**

Rehling, Diana

**Department(s)**

Communication Studies

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### Session D-VS

### Mechanical and Manufacturing Engineering II

### Voyageurs South

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#### XCEL Energy Coal Removal Process

The Becker Xcel Energy power plant has a need for a more efficient way to remove coal when one of the three boilers goes out of commission due to internal combustability of coal. The design team is designing a way for the coal to be removed effectively and efficiently. The process will be easy to install and easy to use.

**Presentation Index:** D-VS 1

**Present Time:** 11:00 AM

**Student Presenter(s):**

Adriaens, Joseph; Johnson, Jason; Jevne, Jeremy

**Sponsor(s):**

Zhao, Yongli; Vogt, Adam

**Department(s)**

Mechanical and Manufacturing Engineering

## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

### Native Binding of Monoclonal Antibody Generated Toward the Iron Surface Siderophore Receptor of Salmonella Newport

Salmonellosis is a prevalent source of illness for cattle and humans. Salmonella infection results in diarrheal disease accounting for more than 1.4 million cases in humans annually in the United States. EpiTox developed and manufactures a vaccine, Salmonella Newport Bacterial Extract (SNBE), which reduces the prevalence of Salmonella in cattle. This reduction will directly impact the number of food-borne illnesses seen annually. Salmonella requires iron for survival and has developed a unique strategy for acquisition from the host environment. Bacteria secrete siderophores to sequester iron then return through siderophore receptors in the outer membrane. The receptors Cir, FepA, and IroN, are up-regulated by the Fur gene when iron is scarce; their specificity for siderophores overlaps. These receptors are the main component of the SNBE vaccine. After vaccination, generations of antibodies protect cattle from infection by blocking the siderophore receptors. The bacteria are then unable to receive necessary iron, leading to death. In order for SNBE to be fully licensed by the United States Department of Agriculture, an assay to measure the amount of siderophore receptors in each vaccine serial must be developed. The desired assay will be an enzyme-linked immunosorbent assay (ELISA) utilizing IroN due to its specificity to Salmonella. A monoclonal antibody for this receptor was generated and examined for its ability to bind to the native receptor on the bacterial surface through flow cytometry. The low percentage binding of this antibody to the bacteria indicated that it may not be specific for a surface binding site, but rather for one buried within the membrane. This antibody may still be appropriate for ELISA development. Siderophore receptors present in the vaccine are extracted from the bacterial membrane. This non-native conformation may expose the IroN binding site, making receptor quantification in the vaccine possible.

**Presentation Index:** D-VS 2

**Present Time:** 11:20 AM

**Student Presenter(s):**

Williams, Jennifer

**Sponsor(s):**

Cetkovic-Cvrlje, Marina

**Department(s)**

Biological Sciences

### Characterizing a Putative Binding Protein of cdk1 in the Lifecycle of *Toxoplasma gondii* Using In Vitro as Well as In Silico Analysis

Cell division through the process of mitosis in eukaryotes has been a well-studied and understood process starting in the 1880's. However, in the phylum Apicomplexa much of its cell division and regulation process still remains a mystery. The phylum Apicomplexa undergoes a novel form of replication known as schizogony. In the model organism *Toxoplasma gondii*, a member of this phylum, a variation of this form of cell division is known as endodyogeny. Many of the proteins and control mechanisms of this process have still yet to be described in detail. A group of proteins known as cyclins may be a large factor in controlling cell cycle progression in *Toxoplasma gondii*. Cyclins play a crucial role in eukaryotes by facilitating progression through the cell cycle. To this day, only one putative cyclin has been characterized in vitro in *Toxoplasma gondii* (TgCyc1). Past experiments have identified putative *Toxoplasma* cyclins based on their interactions with the *Toxoplasma* ortholog of yeast kinase protein cdc28 called cdk1. My research will attempt to characterize one of these binding proteins using in vitro as well as in silico experiments. This research will lead to a better understanding of the unique proteins involved in the cell cycle of *Toxoplasma gondii*. Hopefully, giving drug developers potential targets in fighting Apicomplexa responsible diseases such as toxoplasmosis, malaria, and cryptosporidium.

**Presentation Index:** D-VS 3

**Present Time:** 11:40 AM

**Student Presenter(s):**

Noyes, Joseph

**Sponsor(s):**

Kvaal, Christopher

**Department(s)**

Biological Sciences

## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

### Husky Motorsports 2011-2012 Formula Car

The objective of this project is to design and fabricate an open wheel, formula style race-car by combining high performance qualities with safety and manufacturability. The vehicle design is governed by a set of strict rules incorporating modern safety regulations, which dictate the vehicle's core systems. These regulations, set by the Society of Automotive Engineers (SAE), are important criteria to meet while the vehicle's cost to build and performance are major areas where design is constrained. The challenge is to be creative with the design while satisfying all requirements, performance specifications, and cost. To design and build a vehicle that stands out within the rules, sound engineering practices must be used in all design decisions. The engineering aspect of this project includes designing, integrating, and packaging all vehicle systems and components ensuring proper functionality. Specific applications on the vehicle include the frame; pushrod actuated front and rear suspensions, front and rear uprights, steering system, engine intake and exhaust modifications, rear drivetrain and engine integration, and electronic shifting. The end result will be a showcase of the students' knowledge and skills in a vehicle that incorporates a lightweight chassis, durable power-train, and responsive handling.

**Presentation Index:** D-VS 4      **Present Time:** 12:00 PM

<b>Student Presenter(s):</b> Peterson, Bradley; Herickhoff, Kevin; Herrala, Bruce; Hillukka, Darrell; Smith, Jonathan; Victorson, Eric; Fernando, Warnakulasuriya; Guo, Yizhi	<b>Sponsor(s):</b> Zhao, Yongli	<b>Department(s):</b> Mechanical and Manufacturing Engineering
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**Session E-C**

**Paper Competition II**

**Cascade**

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### The Development of a DNA Fingerprinting Method for *Bacillus cereus*

*Bacillus cereus* (*B. cereus*) bacteria are aerobic, gram-positive, spore forming rods that cause food poisoning leading to vomiting and diarrhea. *B. cereus* can be isolated from many foods that are found on the grocery store shelf, including honey, rice and dried spices. Being able to track the source of bacterial contamination would be a key step in preventing future illness associated with *B. cereus*. A common method used to investigate food contaminations associated with bacteria is multiple loci tandem repeat analysis (MLVA). MLVA utilizes repeats in the DNA sequence known as variable number tandem repeats (VNTR). VNTRs are short DNA sequences that are repeated in tandem a varying number of times in a specific region of the genome. The number of times a VNTR sequence is repeated directly affects the length of the repeat region. By utilizing polymerase chain reaction (PCR), VNTR loci *vrrA*, *Bams 1*, *Bams 3*, *Bams 28*, *Bcms 08*, *Bcms 17*, *Bcms 18*, *Bcms 19*, and *Bcms 20* were amplified and sized by gel electrophoresis. A number of alleles were identified for each of the repeat regions in the *B. cereus* isolates examined. These results suggest that the use of MLVA is a useful tool for differentiating between individual strains of *B. cereus*.

**Presentation Index:** E-C 1      **Present Time:** 12:30 PM

<b>Student Presenter(s):</b> Gucinski, Mark	<b>Sponsor(s):</b> Gulrud, Kristin	<b>Department(s):</b> Biological Sciences
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### Cultural Significance of Chinese Lanterns in China: Hanging, Floating, and Flying

Many Chinese paper lanterns, whether hanging, flying, or floating, are now used all around the world as just a fun, artistic way to celebrate a wedding, holiday, or for the Chinese New Year. But, most people fail to realize the significance and the symbolism behind these beautiful lanterns. Throughout Chinese history these lanterns have not only changed in appearance, they have also changed in significance. This presentation will endeavor to explain the true historical meaning of these wonderful lanterns. I have researched eight articles to complete my project. By understanding the evolution in meaning of the Chinese lantern, though a small object, we may come to appreciate the significance of daily unappreciated objects.

**Presentation Index:** E-C 2      **Present Time:** 12:50 PM

<b>Student Presenter(s):</b> Stock, Jessica	<b>Sponsor(s):</b> Pryately, Margaret	<b>Department(s):</b> Communication Studies
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## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

### Kawaii and the Unique Direction of Japanese Fashion

Fashion on the streets of Tokyo is unlike fashion anywhere else in the world. Trends move from street to store, and fashion magazines contain pictures of everyday schoolgirls in place of fashion models as style inspiration for their readers. What is it about Japan that makes Tokyo, one of the world's fashion capitals, completely unique? I analyzed journal and magazine articles relating to the history of Japan, cultural trends, the recent boom in the fashion industry and its presence overseas. I also read a book on the Japanese mindset. In my analysis, I learned that the phenomenon of Japanese street fashion is unique to its locale because of various historical and cultural factors, some of which have roots in the sixth century. This research explores the possible reasons street fashion took Tokyo by storm and continues to this day. It covers influences by the cultural value of collectivism, iitiko-dori and youthful need for self-expression in a conservative country. Some people call Japanese youth the biggest worldwide consumers of Western culture. By understanding the cultural underpinnings of the "backward motion" of fashion in Japan, we can better understand the country that has much to offer the West in return.

**Presentation Index:** E-C 3

**Present Time:** 1:10 PM

**Student Presenter(s):**

Willms, Molly

**Sponsor(s):**

Pryately, Margaret

**Department(s)**

Communication Studies

### ConnexSys Joint Technology

Established in 1949, Remmele Engineering Inc. (REI) is a manufacturing partner for firms in the aerospace, defense and medical device markets. It supplies machined, monolithic structures for Aerospace customers. One of its products, ConnexSys, creates a sealed joint for joining two pieces of material together with the help of adhesive bonding. It reduces the time and cost by replacing other techniques in the field of metal joining. The adhesive, however, can be problematic as it cannot resist certain specific environments, the joint cannot be inspected prior to use and most of them are not stable under high temperatures. The project objective is to develop a new ConnexSys type design which provides strength and fatigue life better than the previous design and the design process for use during future ConnexSys development. We will be describing the experimental verification of key design predictions and assessment of manufacturability and assembly methods that are performed as well as a standardized method developed for designing future ConnexSys products.

**Presentation Index:** E-C 4

**Present Time:** 1:30 PM

**Student Presenter(s):**

Poudyal, Sushant; Zhang, Yanming

**Sponsor(s):**

Covey, Steven

**Department(s)**

Mechanical and Manufacturing Engineering

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**Session F-C**

**Paper Competition III**

**Cascade**

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### Addressing Proto and Self-Injurious Behaviors in Young Children by Increasing Functional Communication Skills

Using language to communicate needs and wants is a vital skill that is learned early in a child's life. However, some children do not learn these appropriate language skills and in appropriate behaviors, such as proto and self-injurious behaviors (SIB), emerge as replacement behaviors. The current study examined the effectiveness of teaching functional communication, by teaching a 3-year-old boy, diagnosed with multiple medical complications due to premature birth to press a voice output communication device. The procedure included conducting a descriptive assessment and functional analysis to determine what factors were maintaining the participant's proto-SIB and SIB. Following the functional analysis, functional communication training was completed. Results of the current study revealed that teaching functional communication training was successful in reducing both proto-SIB and SIB while concurrently increasing functional communication.

**Presentation Index:** F-C 1

**Present Time:** 2:00 PM

**Student Presenter(s):**

Carpenter, Mary; Gudding, Jennifer

**Sponsor(s):**

Edrisinha, Chaturi; Estrem, Theresa

**Department(s)**

Communication Sciences and Disorders, Counseling and Community Psychology

## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

### Husky Shuttle Thank You Project

St. Cloud State University (SCSU) has pledged "Community Engagement" as defined by engaged citizenship as the first pillar in the re-visioning of our campus. At the heart of community engagement is civic consciousness. At a minimum, civic consciousness expects that an individual is aware of what is going on around and engages with the community. The current study evaluated a stimulus prompting procedure to encourage shuttle riders of the SCSU Husky Shuttle to express gratitude to the drivers by saying "thank you." This experiment was conducted on the Husky Shuttle Q-lot to Wick Science Bus route loop at the SCSU campus. During baseline, data was collected on rider's spontaneous use of the phrase "thank you" or some variation containing the term "thank" upon exiting the bus. During intervention, stimulus prompts in the form of posters advertising the distance between campus and SCSU Parking Lots K and Q, weather, and walking conditions were placed at bus stops Wick, K-lot, and Q-lot. Stimulus prompting was evaluated using a multi-element design with an embedded ABAB reversal design to determine if there was a difference between male and female rate of gratitude. Additionally, drivers were interviewed to evaluate how rider appreciation affected job perception and satisfaction. Of the trials conducted, it was determined that spontaneous use of the term "thank you" increased slightly across male riders as well as female riders during intervention. Additionally, driver data suggests rider gratitude affected not only their immediate job perception, but continued to affect their off-duty lives. This data suggests occasional or novel prompting of appreciation among shuttle riders will have a positive effect on shuttle drivers as well as raise awareness among riders that the Husky Shuttle service is a privilege for SCSU students.

**Presentation Index:** F-C 2      **Present Time:** 2:20 PM

<b>Student Presenter(s):</b>	<b>Sponsor(s):</b>	<b>Department(s)</b>
Nelson, Rebecca; Eveland, Mark; Kloskowski, Maisie; Troge, Natalie; Kroll, Amanda	Edrisinha, Chaturi	Counseling and Community Psychology

### Smoke Free Policy

At St. Cloud State University, designated smoking areas have been implemented. It is important for students to be aware of the new and upcoming smoking policy on the SCSU campus. We selected four locations on campus. Two designated smoking areas, and two non-designated smoking areas. These four locations were selected because they are high traffic areas for students. We placed maps at the non-designated areas that directed people to the closest designated smoking area, thus making people aware of the nearby designated smoking areas provided for them. Our data shows that people were unaware of the designated areas. After providing the maps, the behavior increased at the designated areas. This showed that there was an increase of awareness and usage of these locations.

**Presentation Index:** F-C 3      **Present Time:** 2:40 PM

<b>Student Presenter(s):</b>	<b>Sponsor(s):</b>	<b>Department(s)</b>
Zinnecker, Jennah; Jacobson, Sara; Luhning, Alicia; Pearson, Kristi; Williams, Chantelle	Edrisinha, Chaturi	Counseling and Community Psychology

### Importance of Being First: First Generation College Students and Academic Achievement

First generation college students face numerous unique challenges in college. These obstacles may have a negative effect on academic achievement. The purpose of this study is to examine whether first generation college students perform academically on par with the non-first generation college students. This study fills a gap that St. Cloud State University has not used any scientific method or empirical model to predicting the academic achievement for first generation college students. The dataset being used consists of information on all the students who have been admitted in last six years, from Fall 2006 to Spring 2011. No student names or ID numbers are included in this dataset, to ensure student data privacy. The method used to test the author's hypothesis is the Ordinary Least Squares regression. Final results from this research indicate that first-generation college students are performing no worse than their counterpart in St. Cloud State University. A number of important relationship and implications for future research are discussed.

**Presentation Index:** F-C 4      **Present Time:** 3:00 PM

<b>Student Presenter(s):</b>	<b>Sponsor(s):</b>	<b>Department(s)</b>
Lian, Wen	Rebeck, Kenneth	Economics



## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

Session F-G

Communicating with Asia III

Granite

### The Historical Significance of Body Art in Japanese Culture

This research examines the historical aspects behind tattooing and body art in Japanese culture. This presentation covers the early history of tattooing in Japanese culture as well as its context in today's society. This research has been constructed from five different online journals and articles. The intention of this research is to get an overview of tattoos in Japanese culture and how it relates to their beliefs and customs. Upon concluding research for this presentation it has been determined that tattoos have always been seen as a dark art that was used to identify criminals and evil doers. The larger implications that tattoos have been a way to identify someone because of their body markings has continued into today's society, and continue to be viewed in a negative way. The research conducted for this paper has resulted in finding that tattoos are becoming a norm in Japan's society, but will always have the negative connotations that are related with tattoos.

**Presentation Index:** F-G 1

**Present Time:** 2:00 PM

**Student Presenter(s):**

Parker, Derek

**Sponsor(s):**

Pryately, Margaret

**Department(s)**

Communication Studies

### Value of Sumo Wrestling in Japan

Sumo wrestling is a centuries old tradition in Japan and was not considered to be a sport until the early 1600s. Over the past two decades, it has become an international sport with competitors all over the world. Sumo originates from the religious beliefs of the Shinto, Nihon Shoi and the Kojiki. During this time, the Sumo matches were meant to entertain the gods (Kami) and later on were used to settle disputes between governmental issues. Based on my research findings, I have found that the sport has become more common in countries other than Japan including the United States, Canada, Argentina, Brazil, China and Mongolia. Because of its increasing popularity, Sumo has lost its cultural significance as it has been transformed into an international practice. This paper will explore Sumo's roots and the place it is taking in the Japanese world today.

**Presentation Index:** F-G 2

**Present Time:** 2:10 PM

**Student Presenter(s):**

Buechner, Nathan

**Sponsor(s):**

Pryately, Margaret

**Department(s)**

Communication Studies

### The Cultural Significance of Elephants in India

The problem with elephants in India today is the image of them and their significance. The mythologies about elephants go along with the Indian religion of Hindu. When approaching this paper I began to first look up the differences between the African Elephant and Indian Elephant. Their size, skin, tusks, diet, and even toes are all different. Next, I began to look through many sources, only choosing three, on the myths and Gods in the Hindu religion that are connected to the elephant. I later found one great source describing what the Indian Elephant is used for today and how they are seen. The most interesting bits of information I found were the good luck of the elephants and how they are treated in India today. I enjoyed reading about how placing elephants in your house brought good virtue and luck. I have about eight elephants placed in different rooms throughout my apartment for that very reason, and it is nice to know what other things the elephant represented. I also was intrigued by reading about how some elephants are treated. For being such a sacred animal some are chained and barely fed. For me, this is a big issue that brings confusion between their religion and modern day.

**Presentation Index:** F-G 3

**Present Time:** 2:20 PM

**Student Presenter(s):**

Reichert, Kasey

**Sponsor(s):**

Pryately, Margaret

**Department(s)**

Communication Studies

## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

### The History and Tradition Behind the use of Chili Peppers in Indian Cuisine

Chili Peppers have been a passion of mine for years. I am also partial to the unique flavors of Indian cuisine. I thought it would be a good idea to combine these two topics into a research paper. Indian food is considered to be very spicy and I wanted to learn how Indian chefs utilize spicy peppers into their cuisine. I also wanted to investigate the cultural and historical associations behind the use of chilies in Indian cooking. Additionally, I thought it would be interesting to research other uses for chilies, beyond just cooking. I researched nine sources and learned a great deal about chili peppers in Indian cuisine. I also learned they are used for religious and medicinal purposes as well. My investigation into this topic helped me realize chilies are more than just hot, flavorful fruits. They have a place in history.

**Presentation Index:** F-G 4

**Present Time:** 2:30 PM

**Student Presenter(s):**

Rieken, Stephen

**Sponsor(s):**

Pryately, Margaret

**Department(s)**

Communication Studies

### Chinese Foot Binding: A Tradition Lost But Not Forgotten

Chinese foot binding was a large aspect of Chinese culture for many centuries. Women sacrificed their physical wellness to follow this cultural trend that was quickly turning into a nationwide epidemic. This was a major issue within the Chinese population because billions of women proved that they would do nearly anything to follow the norm which is an aspect of this tradition that people tend to overlook. After conducting an abundant amount of research on the subject, five of the strongest sources on the topic help to conclude that Chinese women were so strictly set on holding on to this tradition that even a ban by the government could not stop these women from continuing these practices. The most important finding was the absolute submission by nearly all the women of the Chinese culture to this extremely painful, life changing custom. What finally put an end to this self-mutilation was the fines that were given to women who had continued this practice after the government had outlawed it. This cultural epidemic serves as a warning to all people who are easily influenced by their surroundings. Any idea that surmounts among a group of people could erupt into something that spreads throughout a nation just like the binding of women's feet in China once did.

**Presentation Index:** F-G 5

**Present Time:** 2:40 PM

**Student Presenter(s):**

Ganser, Bethany

**Sponsor(s):**

Pryately, Margaret

**Department(s)**

Communication Studies

### The Symbolic Values of Koi in Japanese Culture

This research explores the symbolisms and values behind the Koi in Japanese culture. Everything about the Koi is symbolic and highly valued in the culture. For instance, a physical characteristic of Koi such as strength has been compared to the old-time Samurai and celebrated during Tango no Sekku or Boy's Day. On the other hand, from the observable multitudes of colors to deeper meanings, the Japanese believe that each color has a symbolism relating to family and fortune. The Koi is truly the warrior fish of Japan; therefore, this presentation will examine the symbolisms and values of Koi through history, myths and beliefs.

**Presentation Index:** F-G 6

**Present Time:** 2:50 PM

**Student Presenter(s):**

Lee, Kesa

**Sponsor(s):**

Pryately, Margaret

**Department(s)**

Communication Studies

## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

### The Cultural Significance of the Tatami Style in Japan

The Japanese tatami mat, which eventually evolved to tatami rooms, has a significant role in Japanese culture. Japanese culture is riddled with traditions that have made tatami a classic symbol in Japan. Whether it is the appreciation for nature, the four seasons in Japan or the simple elegance, the tatami mat is a piece that fits the Japanese way of thinking. Tatami is made from different parts of a rice plants or plants that grow in rice fields. Rice is a staple crop in Japan and has been for a very long time. The process in which it is grown is as important as the harvest itself to the Japanese. The value of a tatami mat is seen in the same way. The mats are simple, natural and elegant. Tatami mats have specific purposes for each season and help to harmonize the climate in the home. The size of a tatami has always been the same and how they are arranged corresponds with the occasion. During the analysis of several sources I have discovered how the tatami mat is woven into Japanese culture. Tatami mats have a practical, medical, artistic and spiritual importance in the Japanese culture. It is not surprising that the style has endured for hundreds of years despite other flooring options. Tatami represents classic Japanese style and will continue to play a significant role in Japanese culture.

**Presentation Index:** F-G 7

**Present Time:** 3:00 PM

**Student Presenter(s):**

White, William

**Sponsor(s):**

Pryately, Margaret

**Department(s)**

Communication Studies

### Frisbee Golf in Japan and the Affects of Religion

Due to the rising popularity of Disc Golf throughout the world, it is important to know how to be sensitive to cultural differences. Disc golf in Japan is affected by Japanese Zen Buddhist and Shinto beliefs. Various websites, articles, and interviews were conducted to discover how this outdoor sport is affected by Shinto values of nature as well as Zen Buddhism and the idea of Bushido. An important finding is that one should do all they can to protect from hitting trees or harming the nature on the course. Another is the idea of competition in the sport. These are important because visiting players should be aware of the culture of Japan and its emphasis on the spiritual aspects of nature, and that the competitive level may be larger than what is used to being seen. Understanding these ideas will help visitors become able to adapt and enjoy the sport while visiting Japan.

**Presentation Index:** F-G 8

**Present Time:** 3:10 PM

**Student Presenter(s):**

Lore, Bradley

**Sponsor(s):**

Pryately, Margaret

**Department(s)**

Communication Studies

### An Investigation into Knowledge, Beliefs, and Behaviors of Japanese and Relaxation

Japan is home to some of the oldest rituals in the world, and those rituals remain at the very heart of Japan today. Blessed with an abundance of natural and medicinal hot waters springing from the earth, called Onsen, the Japanese have for centuries been bathing in curative waters to cleanse and rejuvenate the mind, body and spirit. Japan is deeply rooted in Shinto beliefs. Shinto teaches people to have a deep reverence for nature. Water is considered pure and is purifying because it is regarded as the symbol of life ever-flowing, changing, and renewing. The key to Japan and the Onsen is simplicity. Immersion in hot springs or Onsen allows the bodies to rest, restore, and revive. For water to be tied with the concept of purity is central to Shintoism. There is an emphasis on spiritual and physical purity and cleanliness. Many ceremonies are acts of purification. The Japanese tend to see the world in clean and dirty rather than good and evil. By purification and ritual perfection man can approach the divine. Kami is to come into being by purification or ritual. Purity rituals correspond to the changes of your inner heart. It is an ebb and flow of life connected to a spiritual world. The purpose of this topic was to seek understanding. This presentation will describe Shintoism's four major tenants, the natural chemical compositions in the water, and the nature that exists around Japan's Onsen. Taking in the experience and interpreting the meaning will be essential to understanding. This qualitative research will be used to discover how spirituality, based on a joyful respect for nature, is a way of life rather than a philosophy or religion.

**Presentation Index:** F-G 9

**Present Time:** 3:20 PM

**Student Presenter(s):**

Brehmer, Rachel

**Sponsor(s):**

Pryately, Margaret

**Department(s)**

Communication Studies

## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

Session F-GN

Social and Behavioral Sciences III

Glacier North

### Major Default: Are Student Loan Default Rates Impacted by Your Choice of Degree?

In a world where financial assets and investment vehicles are traded every day, investors want to find out what constitutes a good investment to increase profits gained from trading. Student loans are one of the newest forms of assets to be bought and sold, and default on those loans is a huge concern as the investor must rely on students' ability to pay back the loan in order to continue to collect interest and principal payments. Over the years, in order to determine the riskiness of the investment, researchers have analyzed many of the factors that contribute to the probability of default on student loans. In this report using regression analysis, I will analyze the causal factors that lead to default with a primary emphasis looking at if there is a correlation between different types of degrees and higher rates of default. State default rates will be my dependent variable, with independent variables separating all degree holders into one of four degree types. State unemployment rates and mean income levels, will also be looked at. I will establish if certain degree holders are more or less likely to default on their student loans.

**Presentation Index:** F-GN 1

**Present Time:** 2:00 PM

**Student Presenter(s):**

Aleckson, Reuben

**Sponsor(s):**

Hughes, Patricia

**Department(s)**

Economics

### How Crude is the Price You Pay at the Pump?

For the past twenty years there has been an increase in the price per barrel of crude oil and the price for gasoline at the pump. In a time of economic recession, consumers are becoming more cost-conscious and want to know the contributing factors to this increase in gasoline prices and if it is in tandem with fluctuating prices for crude oil. In this report I will analyze the impact of crude oil on the price of all three grades of gasoline by estimating a reduced form supply and demand equation using regression analysis, holding the price of the three types of gasoline as my dependant variable. I will establish if a change in the price of crude oil is asymmetrical to gasoline price fluctuations and test if this change impacts the different types of gasoline prices in a similar manner.

**Presentation Index:** F-GN 2

**Present Time:** 2:20 PM

**Student Presenter(s):**

Spann, Joseph

**Sponsor(s):**

Hughes, Patricia

**Department(s)**

Economics

### To Stay or Not To Stay: Labor Markets and International Students' Propensity to Stay in the United States

The growing number of international students has the potential to play an important role in the United States. Their spending boosts the U.S. economy, their skills improve the science and technological development, and their diverse background enriches American culture. Furthermore, many international students become immigrants to the United States. Promising job markets are attractive to those who intend to apply college learning to real-world settings in the United States. I examined international students' propensity to stay in the United States after graduating by analyzing the findings of a survey sent to all international students at St. Cloud State University (SCSU) during Fall 2011. This research used a scientific method and empirical model to contribute to the literature by investigating the intentions of international students who study a variety of subjects at SCSU, including non-degree, undergraduate, and graduate students. Applying a binary logistic model, this study finds that the strength of the U.S. job market is one of the main determinants of a student's propensity to stay. The strong job markets in either the United State or the student's home country are likely to influence international students' choices, especially if they value career goals. Having siblings living in America and a higher GPA produces a positive impact on inclination to stay, and family-owned businesses in their home countries have a negative impact on their decision to stay. The findings of this study provide an understanding for faculty and staff of how to manage international students' intentions to stay in the United States after graduating. Additionally, companies can extend their advertisements and provide incentive packages to attract high skilled international students.

**Presentation Index:** F-GN 3

**Present Time:** 2:40 PM

**Student Presenter(s):**

Lu, Zeqing

**Sponsor(s):**

Rebeck, Kenneth

**Department(s)**

Economics

## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

### Social Networks - Summoning the Winds of Change

The year 2011 was marked by global uprisings all around the world. Such magnitude and scale of public protests from all across the world have not been seen since the youth protests of the 1960s or the anti-communist demonstrations of the 1990s. This research discusses how internet based social networks have been used as tool for social movements through the analysis of articles from plausible newspapers, academic journals and books published on the topic. In this presentation we argue that social networks have empowered the current public unrest. In addition, we will shed light on the impact, these social networks have had on the social unrest in the Middle East, the Occupy Wall Street demonstrations, the 2011 riots in Britain, as well as the current political uprising in the Russian Federation. With the emerging perspective on social networks acting as a tool for reform, this research highlights the future implications of these social networks on politics. With instant updates on several different events from all over the globe within seconds, these social networks have left behind the traditional television set and the newspaper columns and armed itself with a revolutionary platform for democratic reform, with purpose of breaking the geopolitical boundaries and the differences of a multicultural world, to gradually turn it into a tightly knit community.

**Presentation Index:** F-GN 4

**Present Time:** 3:00 PM

**Student Presenter(s):**

Chkhikvadze, Ani; Dutta Gupta, Ankit

**Sponsor(s):**

Greaves, Edward

**Department(s)**

Political Science

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**Session** F-T

**Scholarship in Action**

**Theatre**

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### The Creation of Italian Opera

The philosophy of Baroque music is mainly that a belief in music as a potent tool of communication. The Greeks and Romans were the first ones to believe music was a powerful tool of communication and could evoke any emotion in a listener. Composers started to "imitate" emotions of passion and affection in their compositions through tonal organization. This discovery led to a new creation of a genre: opera. Invention of opera in the early Italian Baroque era included two famous composers and their early operas, musical technique and instrumental color, which played a significant role in the creation of this genre. In music, the Baroque era is the era of style-consciousness. The means of verbal representation in Baroque music were indirect-intellectual and pictorial. Opera is one of the foremost innovations of the Baroque era and it allowed for the realization of extreme affections in music. It represents melodic freedom.

**Presentation Index:** F-T 1

**Present Time:** 2:00 PM

**Student Presenter(s):**

Oseth, Olga

**Sponsor(s):**

Verrilli, Catherine

**Department(s)**

Music

### Virtual STEM Activities Book for the iPad

STEM ETS-153 class was researching STEM activities, finding minimal resources available for a classroom teacher; it was decided to write a book using the latest authoring technology through Apple's iBooks Author. STEM integrates science, technology, engineering, and math into project based classroom activities and prepares students for a globally competitive and technologically literate society. Using class teamwork, a series of chapters were developed using iBooks Authoring software, which includes a background on STEM education, classroom project ideas, teacher lesson plans, and standards for education. To achieve the maximum amount of learning, this textbook was created by dissecting numerous lessons and activities that connect STEM to real world scenarios. The goal is to teach the STEM initiative and open kids up to the world that is STEM. Overall, this project demonstrates a more reactive textbook platform that allows students and educators to access current educational initiatives and information on a faster timeline.

**Presentation Index:** F-T 2

**Present Time:** 2:25 PM

**Student Presenter(s):**

Kratt, Samuel; Eichholz, James; Mulder, Neal;  
Knutson, Keith; Pashina, Christopher; Xiong,  
Toua; Schaller, Patrice

**Sponsor(s):**

Olson, Curtis

**Department(s)**

Environmental and Technological  
Studies

## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

### Improving Operations and Service to the Non Traditional Student Population at SCSU

There are approximately 3,500 non-traditional students at St. Cloud State University. The number has grown in recent years and comprises 20% of the student population on campus. Non-traditional students face unique challenges in a system that was developed to serve a younger generation. This study examined the university's internal supply chain for gaps that pertain to the service of non-traditional students. Recommendations based on the results may be of value to university administrators for improving the system and service.

**Presentation Index:** F-T 3

**Present Time:** 2:55 PM

**Student Presenter(s):**

McCorquodale, Steven

**Sponsor(s):**

Burgeson, John

**Department(s)**

Continuing Studies

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**Session F-VN**

**Complex Systems I**

**Voyageurs North**

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### An Assessment of the Best Supplier Relationship Management Systems Software in the Service Industry

Proper management of supplier relations contributes much towards operational performance and the bottom line. A good supplier relationship management software system facilitates the process, ensures quality, and helps to reduce costs. This study examines three of the most popular SRM software packages on the market today, in terms of current practices in the field of supply chain management. The service industry is unique because material procured does not go directly into the final product. The software packages will be analyzed based on what they do well and what they do poorly. The results will be of value to service companies who are considering buying SRM system software.

**Presentation Index:** F-VN 1

**Present Time:** 2:00 PM

**Student Presenter(s):**

Maloney, Steven; Amundson, Grant;  
Vandersteeg, Antonie

**Sponsor(s):**

Polacco, Alexander

**Department(s)**

Management

### The US and Egypt: Exploring Linkages

The presentation covers the research on the linkages between the United States and Egypt during the last ten years. This Arab country is a strategic element of the U.S. foreign policy in the Middle East. Egypt is the second recipient of American financial aid after Israel. The country gets military supplies from the U.S. which directly influences the issues of "Arab spring" and consequences for the world community. There are many kinds of linkages between Egypt and the United States. The research shows connections in political, military, economic, social, cultural, and educational spheres. There is an emphasis on the influence of getting college degrees by Egyptians in the U.S. on the way of conducting policy in Egypt. Many students see and appreciate democratic values of America while studying here and bring these ideas back to Egypt. During this research we used data on Egypt from the United States Department of State, scientific articles on the chosen topic and the book "Competitive Authoritarianism" by Levitsky and Way. The support of the U.S. tries to help Egyptians promote, develop and build democracy in their country. They focus on economic development and stimulate economic and industrial growth. The stability of Egypt is essential for the progress of the region in general.

**Presentation Index:** F-VN 2

**Present Time:** 2:20 PM

**Student Presenter(s):**

Shishkina, Elena

**Sponsor(s):**

Greaves, Edward

**Department(s)**

Political Science

## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

### **Two Americas: An Analysis of How Chinese Stereotype Americans**

A stereotype is a fixed mental image of a group that is frequently applied to all its members. It is a part of the human condition, a short-cut to help us understand the world since individuals cannot personally experience most of the events in which they have an interest. In other words, stereotypes are an economical way of viewing the world. Plenty of resources and research had been conducted to investigate how Americans stereotype other people, such as Chinese, French or German; however, in reverse, the information about how people from other countries perceive the typical American is relatively sparse, especially how Asian people stereotype Americans. This study is trying to fill this blank and specifically focus on how Chinese, especially Chinese college students and the younger generation think about Americans. The analysis is based on several resources and research from several academic journals and books, as well as the researcher's personal experiences, observations and opinions. The study concludes that Chinese young people have nine main perceptions of a typical American and also America as a country: rich and wealthy; arrogant yet ignorant of other countries and cultures; bullying/hegemonic; open (sexually and in thoughts); democratic yet inefficient; creative/inventive; physically strong yet eating unhealthy; enjoying excellent higher education; and valuing individuality and the American dream (individualistic heroism). However, stereotype is just like a double-edged sword, except that the good side also has its drawbacks. These either positive or negative stereotypes are formed because lack of understanding and positive communication, as well as the effect of modern mass media. Cleaning up those misunderstandings can bring multiple benefits to both countries.

**Presentation Index:** F-VN 3

**Present Time:** 2:40 PM

**Student Presenter(s):**

Li, Guo

**Sponsor(s):**

Heinrich, Lisa

**Department(s)**

Mass Communications

### **The Arab Revolt: A Snowball Effect of Democratic Revolutions in Middle East**

Arab Spring is the virus-like spread of mass uprisings throughout the Middle Eastern countries in 2011. Having originated in Tunisia, the revolutionary mood migrated to Egypt, Libya, Syria, Yemen and Bahrain. This subject caught my interest after reading theoretical basis of historical revolutions and comparative analysis of the mass uprising around the world. It is important to understand the revolutions in Middle East to comprehend the context of intricacies those revolutions might get into and to predict whether they would lead to the rise of democracy or the establishment of a new totalitarian regime. For us, students, citizens of an international community, scholars, it is crucial to study how democracies become predominant because it affects all aspects of our life. During my research I referred to classical readings, documentaries, and articles from the leading analytical journals as *The Economist* and *The Foreign Affairs*. As a result of my research, I learned that there is not one pattern of development that revolutions should follow to succeed; each uprising, by using violence or non-violence can succeed or fail, equally. However, there are few factors that bring success to opposition: strong military presence and foreign intervention. My research not being the definitive answer to all revolutionary movements is subject to a long debate.

**Presentation Index:** F-VN 4

**Present Time:** 3:00 PM

**Student Presenter(s):**

Seidmedova, Shahlo

**Sponsor(s):**

Greaves, Edward

**Department(s)**

Political Science

## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

Session F-VS

Science and Engineering II

Voyageurs South

### R & M Manufacturing

R&M Manufacturing is a full service sheet metal fabrication company located in Buffalo, MN. R&M's existing nutpress and spotweld workstations are insufficient for optimal production of large and heavy parts. The current process is inadequate because the current fixtures require multiple employees to perform slow, heavy lifting. Therefore, this project's focus is on increasing efficiency and improving ergonomics during the production of large and heavy parts. Research, company meetings, and application of engineering design resulted in a model of a bridge crane with a pneumatic lift system. For safety reason's, the bridge crane will be a purchased assembly, leaving the essential design to be of the lift system. Final deliverables to the company are design specifications including part and assembly drawings, and documented time and cost analysis including payback period calculations.

**Presentation Index:** F-VS 1

**Present Time:** 2:00 PM

**Student Presenter(s):**

**Sponsor(s):**

**Department(s)**

Reis, Caitlyn; Donnay, Nicholas; Rausch, Bryan Byun, Jeongmin

Mechanical and Manufacturing  
Engineering

### TCP/IP Packet Manipulation

This presentation will focused on a variety of attacks that can be performed by the process of crafting packets in order to test various OS's robustness and to analyze the responses. This study will demonstrate different ways in which scapy, a packet crafting tool, and the use of python, a language that has the ability import the scapy libraries, can be used to craft packets.

**Presentation Index:** F-VS 2

**Present Time:** 2:20 PM

**Student Presenter(s):**

**Sponsor(s):**

**Department(s)**

Ray, Jonathan; Chehada, Bachar; Biehl,  
Michael

Ghosh, Tirthankar

Computer Science and Information  
Technology

### Mantel's Test for Inference on Longitudinal Categorical Sequences: Is It Good Enough?

Statistical modeling and inference on longitudinal sequences of categorical responses can be very useful to analyze life course data in Social Sciences. The heterogeneity in a set of sequences can be captured by a measure of pairwise similarity between individual sequences and represented as a distance matrix. Such matrices can be analyzed using methods commonly used in Ecological Statistics. Very recent literature and software use the PERMANOVA approach developed by M. J. Anderson. By using simulations, I compared the statistical performance of PERMANOVA with an older, simpler and more generalizable approach, Mantel's test, and found it to be equally powerful. Other tests like MRPP and ANOSIM were also compared. The robustness of the test performance given different stochastic sequence generators, and the analytical similarities among the approaches are also discussed.

**Presentation Index:** F-VS 3

**Present Time:** 2:40 PM

**Student Presenter(s):**

**Sponsor(s):**

**Department(s)**

Zuluaga, Juan

Xu, Hui

Statistics

### Observing Variable Stars in the Winter Sky

Two stars were observed in the winter's night sky to better understand each star's variation in light curve over time. Rho Persei was observed and its magnitude was measured by using two reference stars, Delta Persei and NSV 1055. The data was taken over several nights in February. Omicron 1 Orion was also measured and studied with reference stars, V1032 Orion and V0480. Using this data, light curves were created using a 2nd degree polynomial light curve trend. From this, the expected period of 30 days for Omicron 1 Orion and 50 days for Rho Persei were tested to fit the trend of the light curve. The data for both light curves fit the trend that was predicted from the VSX variable star database.

**Presentation Index:** F-VS 4

**Present Time:** 3:00 PM

**Student Presenter(s):**

**Sponsor(s):**

**Department(s)**

Salzer, Joseph

Foudray, Angela

Physics and Astronomy



## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

Session G-B

Poster Presentations II

Ballroom

### What's Your World?

I am presenting on my practicum experience working for the Education Abroad Office at St. Cloud State University. The Education Abroad Office recently updated their application process from paper to an on-line format. The main project I worked on was updating the pre-departure curriculum that students are required to complete to help them prepare for their Education Abroad experience. I was also responsible for moving the required quizzes from D2L onto the new Studio Abroad site. In addition to this, I managed three short term summer Education Abroad experiences. This included contacting students on missing items, as well as running reports to verify that all applicants had fulfilled all the requirements to participate in their Education Abroad program. I was able to help with St. Cloud State University's Education Abroad Fair, as well as an Education Abroad Fair at Minnesota State University, Mankato. I also helped facilitate a pre-departure orientation experience for students. My practicum experience has been invaluable, and has prepared me to be a professional in the field.

**Presentation Index:** G-B 1

**Present Time:** 2:00 PM

**Student Presenter(s):**

Decock, Paul

**Sponsor(s):**

Imbra, Christine

**Department(s)**

Educational Leadership and Higher Education

### Design and Synthesis of a Novel Alpha-Methylene Lactone Chemotherapeutic Agent

Approximately one in every four deaths in the United States is due to cancer. As the number of people diagnosed with cancer rises, there is an increased sense of urgency toward the development of new and improved chemotherapeutic agents. One source for drug development is natural products. Over fifty percent of all cancer drugs being used today are either found in or derived from nature. This research focuses on the natural product goniotalamin, which was isolated from the bark of shrubs found in rural Malaysia. Goniotalamin has been shown to induce apoptosis, controlled cell death, in a variety of different cancer cell lines. The cytotoxicity of this natural product is hypothesized to come from its ability to react with thiols indigenous to cells. Two mechanisms that lead to goniotalamin's bioactivity will be presented. One mechanism involves depletion of intracellular glutathione levels within the cells and the other mechanism involves the inactivation of an enzyme in the nuclear factor-kappa B pathway. By understanding goniotalamin's mechanism of action, a new synthetic derivative of the natural product has been designed that will potentially exhibit more potent cytotoxicity towards cancer cells. The three-step preparation of this compound containing an exocyclic double bond will be discussed.

**Presentation Index:** G-B 2

**Present Time:** 2:00 PM

**Student Presenter(s):**

Traut, Moriah

**Sponsor(s):**

Mechelke, Mark

**Department(s)**

Chemistry

### Adjustable Scaffolding

The goal of this design project is to create an adjustable platform system which is used during the production of trailers for the Polar Tank Trailer LLC. Currently, the platform system in use at the Opole location is too short for workers to efficiently work on the variety of heights of the trailers being built. According to Occupational Safety and Health Administration (OSHA), the maximum height an employee can climb without being on a platform or safely tied to an anchored structure is 6 feet or 1.8 meters. The current system also lacks proper tie-off points for safety harnesses as OSHA requires workers to tie off while working at any height above six feet on any structure without standardized guardrails on all four sides (a fall protection). Moving the current system is also possible, but the levering system makes it very difficult for employees to safely lift and lock the wheels into place. Ideally, the new scaffolding will be much easier to move around the final trailer assembly area without exerting much energy.

**Presentation Index:** G-B 3

**Present Time:** 2:00 PM

**Student Presenter(s):**

Davis, Jeremy; Kershaw, Adam; Hendrickson, Thomas

**Sponsor(s):**

Sezen, Ahmet

**Department(s)**

Mechanical and Manufacturing Engineering

## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

### Car Collision Warning System

The overall goal of this project is to minimize accidents by controlling and manipulating vehicles' brake lighting system to allow safer driving after dark, alerting other drivers when a sudden brake occurs, and alert the driver when the distance between the car (from front or back) and other objects is small. This will give drivers the ability to note whether the car in front is accelerating or decelerating, allow other drivers to note that an urgent break is taking place ahead of them, and keep drivers aware of unseen objects and close distance. In this project, a system that operates automatically will be developed. This system will eventually be able to be embedded in all vehicles. The power supply system, object sensing, alarming system, acceleration/deceleration calculation, and indication are some of the electrical engineering aspects of the design of this system. These aspects are acquired and learned upon completed classes in our department.

**Presentation Index:** G-B 4      **Present Time:** 2:00 PM

<b>Student Presenter(s):</b>	<b>Sponsor(s):</b>	<b>Department(s)</b>
Javed, Asim; Al-ward, Ahmed; Bartlett, Joseph	Hossain, Md	Electrical and Computer Engineering

### Variable Number Tandem Repeat Analysis of *Bacillus cereus*

Variable Number Tandem Repeat (VNTR) and Polymerase Chain Reaction (PCR) were used to develop a DNA fingerprint of *Bacillus cereus*, a common food borne pathogen. All organisms have regions of repeated nucleotide sequences which are unique to their genome and can be used to identify different strains of that species. The use of PCR amplifies these regions which are then separated by size through agarose gel electrophoresis allowing a visible distinction of variable regions. Using forty-six isolates of *B. cereus*, the Bams 3 and Bams 1 regions provided the greatest diversity of alleles. Moderate diversity was found for vrrA, Bcms 08, Bcms 19, and Bcms 20. Low diversity was found for Bams 28, Bcms 17, and Bcms 18. By distinguishing the different unique VNTR regions, one could then identify the origin of a particular strain of *B. cereus*, which in turn could potentially track the source of food borne outbreaks with this fingerprinting method.

**Presentation Index:** G-B 6      **Present Time:** 2:00 PM

<b>Student Presenter(s):</b>	<b>Sponsor(s):</b>	<b>Department(s)</b>
Gucinski, Mark; Eldeeb, Nadine; Johnson, Kelly; Prigge, Christopher; James, Cameron	Gulrud, Kristin	Biological Sciences

### Antimicrobial Toxicity of Silver Solution on *Escherichia coli* and *Staphylococcus epidermidis*

The antimicrobial effect of Smart Silver was tested on the bacteria *Escherichia coli* and *Staphylococcus epidermidis*. The Smart Silver solution is a homeopathic product created by the company Deseret Biologicals (DesBio). This particular product contains 10ppm silver dispersed in water. Samples of the bacteria were grown in Mueller-Hinton Agar (MHA) along with dilution ratios of water and Smart Silver solution. Each bacterium was grown for 48 hours in the following ratios: 1:2, 1:4, 1:8, and 1:16. Along with the dilution series two controls were included one with only bacteria and MHA and the other MHA and water. After 48 hours the minimum inhibitory concentration (MIC) for *Staphylococcus epidermidis* was 1:4, and the MIC for *Escherichia coli* was also 1:4.

**Presentation Index:** G-B 7      **Present Time:** 2:00 PM

<b>Student Presenter(s):</b>	<b>Sponsor(s):</b>	<b>Department(s)</b>
Prigge, Christopher; James, Cameron; Wendland, Kayce	Gulrud, Kristin	Biological Sciences

## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

### Cardiovascular Risk Assessment - Concepcion, Chile

Obesity and cardiovascular disease is a very prevalent problem in the population of Concepcion, Chile. A National Health Survey done in 2003 identified co-morbidities related to obesity. Hypertension, Hypercholesterolemia, Type II Diabetes, and Sedentary Lifestyle were reported in large numbers of the population. One hundred first time patient records of Victor Manuel Fernandez CESFAM (Centro de Salud Familiar – Center of Family Health) were reviewed and data was collected. Demographics, health status, and lab records were recorded and sorted. Quota sampling was done with a survey to understand the health perception of patients with similar demographics as the patient record sample. A Likert scale was used to determine a self-report of health as well as exercise habits. Of the 100 first time patients surveyed, 36% of patients had a family history of diabetes, 34% were considered obese based on their BMI, but 61% were considered obese based on their abdominal circumference. Sixty percent of males and 34% of women were at risk of becoming hypertensive, with 10% of males and 4% of females considered hypertensive. Forty-one percent of the patients had high cholesterol readings. Eighty-eight percent of the surveyed population led sedentary lifestyles. Since cardiovascular disease encompasses many disorders the goal needs to be directed at reducing overall risk factors so as to decrease the risk of several heart related diseases. Lifestyle changes need to include physical activity and healthy eating habits. Education regarding risk factors for cardiovascular disease especially modifiable risk factors is key in aiding in the prevention of related diseases. Based on the observed findings it is evident that intervention is needed to reduce the risk factors of cardiovascular disease.

**Presentation Index:** G-B 8      **Present Time:** 2:00 PM

<b>Student Presenter(s):</b>	<b>Sponsor(s):</b>	<b>Department(s)</b>
Stang, Jessica; Stang, Katie; Scherbing, Leah	Lenz, Brenda; Hiemenz, Melinda	Nursing Science

### Multiple Use Robot For Following you - MURFFy

The goal of our project is to create a robot to carry a load in a retail setting that can be remote controlled, follow a preprogrammed path, or follow a person that carries a transmitter. This robot will be used within department stores or other similar locations to carry a load so employees may work hands-free. The robot will be built in a scaled down fashion with a lower weight limit and lower cost, while still showing proof of concept. The robot will also have an obstacle detection system, which will stop the robot and notify the user that the robot cannot move until these obstacles are removed. Once completed, the robot should be able to successfully navigate by following a lined track, by remote control, and by following a person carrying a transmitter.

**Presentation Index:** G-B 9      **Present Time:** 2:00 PM

<b>Student Presenter(s):</b>	<b>Sponsor(s):</b>	<b>Department(s)</b>
Bianco, Antonio; Holler, Steffen; Neiss, Zachary	Glazos, Michael	Electrical and Computer Engineering

### How Remedial Courses Affect Success at SCSU

St. Cloud State requested analysis on retention and success in remedial courses, specifically MATH 070, MATH 072, COLL 120, and ENGL 190, as well as who should be enrolled in the remedial courses. This program can potentially provide students with skills required for upper level course work. In the past, the admissions staff did not have strict requirements on who should be taking these remedial courses. Right now they base their decisions on the student's high school cumulative GPA, class rank, and ACT score, but there are other factors that could contribute to a student's overall success here. We analyzed the data provided by the university from Fall 2006 to Spring 2011 for New Entering Freshmen (NEF), but the student names and ID numbers were not included in the data set, to ensure privacy. The analysis we did was accomplished by regression and descriptive statistics to help develop best practices for the university. By using these analysis methods, we are able to create a model that can help the admission staff decide which admitted students should take the remedial courses and what success rate to expect.

**Presentation Index:** G-B 10      **Present Time:** 2:00 PM

<b>Student Presenter(s):</b>	<b>Sponsor(s):</b>	<b>Department(s)</b>
Bernards, Rikki; Homme, Branden	Robinson, David	Statistics

## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

### SCSU Wind Turbine

Currently, St. Cloud State University does not have a renewable energy portfolio. With the ever increasing costs of energy, even a small rise in prices results in a significant increase to the electric bill for the campus. Using meteorological data from the KVSC radio tower and WindPRO Software, an industry level wind resource assessment was completed for a location on campus property as well as an off-site location. The results for these locations will be presented, along with results for a vertical axis wind turbine on an existing structure on campus. The proposed wind turbine would alleviate a percentage of St. Cloud State's dependence on the electrical grid and create partnerships and research opportunities for students in multiple areas of study.

**Presentation Index:** G-B 11      **Present Time:** 2:00 PM

**Student Presenter(s):**

Louks, Anna

**Sponsor(s):**

Kubesh, Rodney

**Department(s)**

Earth and Atmospheric Sciences

### Alumni Relations and the Community College

An important component of college revenue streams can be alumni donations of their time, talent, and financial resources. I recently completed a practicum at North Hennepin Community College (NHCC) in the Foundation office. The goal of the practicum was to help them identify ways to use social media, alumni mentor programs, and existing, established alumni relations program successes at other colleges to increase alumni contributions to the college while also providing benefits to the alumni and existing students in the process. I put together a handbook based on my research of many diverse types of higher education institutions and discussions with NHCC faculty members. The handbook contains research summaries and recommendations for NHCC to employ to increase their use and effectiveness of social media tools, advice for how to proceed with the implementation of a new alumni mentor program, and a proposal for best practices when creating an alumni relations department. This handbook provides NHCC with the tools to more fully engage their alumni resources.

**Presentation Index:** G-B 12      **Present Time:** 2:00 PM

**Student Presenter(s):**

Zahorski Schmidt, Valerie

**Sponsor(s):**

Imbra, Christine

**Department(s)**

Educational Leadership and Higher Education

### Making Therapy More Effective: Key Principles Everyone Should Know

Speech-Language Pathologists work with clients with communication disorders (e.g., stuttering, stroke, Parkinson's disease). Therapy usually involves training Clients to learn new ways to communicate successfully in everyday speaking contexts, leading to improved quality of life. Unfortunately, there is limited research regarding key principles that underlie Clients' learning of new speaking skills. Little is known about which practice schedules (how and when to practice), or different types of feedback and reinforcement lead to significant improvement and retention (long-lasting results). The current study was conducted with 29 graduate and undergraduate students currently enrolled in CSD 432/532 (Fluency Disorders). The research was conducted in SCSU's Applied Principles of Learning (ApPLe) Laboratory with state-of-the-art speech analysis and covert surveillance equipment. Participants were trained to pause in short phrases (e.g., "Hello (pause) how are you?"), and to turn their voice on gradually for the first vowel in a phrase (e.g. aaa small coffee please). Participants were then randomly assigned to four training conditions: Constant Practice = Sentence 1 (5x) Sentence 2 (5x) Sentence 3 (5x); Variable Practice = Sentence 1, Sentence 2, Sentence 3 (15x); Frequent Feedback = participants check accuracy of productions on the computer each time; and Infrequent Feedback = participants check accuracy every 10 productions on the computer. Participants practiced five sentences using the pause technique each 10 times and five sentences using the gradual voicing technique each 10 times (total 100 sentences). After one week participants returned to the lab to record their performance on the same five pausing sentences and the same five gradual voicing sentences they had practiced earlier. This research presentation will present outcomes from this study, revealing which types of practice and feedback result in the greatest improvement and retention.

**Presentation Index:** G-B 13      **Present Time:** 2:00 PM

**Student Presenter(s):**

Swanson, Rochelle; Stenerson, Sandra

**Sponsor(s):**

Smits-Bandstra, Sarah

**Department(s)**

Communication Sciences and Disorders

## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

### Interrupted Field Time of Flight Studies of Trapping Kinetics in Organic Semi-Conductors

This project will consist of high voltage switching at fast nanosecond timescales in order to test photoconductive materials in a process called Interrupted Field Time of Flight (IFTOF). This test reveals impurities in the material that inhibit charge flow and gives information about its charge mobility. There are two main challenges of this project. One challenge involves switching up to 1000 Volts off and on again in 10 nanoseconds while suppressing equipment-damaging current spikes. The other challenge is automating the entire measurement process, which involves coordinating a switching circuit, laser, power supply, and oscilloscope. The duration of this process lasts under 1000 nanoseconds. To conduct an IFTOF measurement, a voltage bias is applied across the material being tested, creating an electric field. A laser is pulsed, which excites the electrons in the material. Due to the strong electric field, the excited electrons travel through the material. When the electrons are near the middle of the material, the voltage is cut completely, stopping the electrons. A short time later (down to 10 nanoseconds in our case) the voltage is reapplied and the electrons continue flowing through the material. However, some electrons remain stuck in the middle of the material due to “deep traps”—these are simply impurities in the material that impede electrons’ travels. By using our automated system, photoconductive materials researchers can perform measurements more efficiently and with more precision while gaining information currently unattainable due to the extremely small timescale. The results of this research will also help advance the field of organic circuitry (for example, organic LEDs).

**Presentation Index:** G-B 14      **Present Time:** 2:00 PM

<b>Student Presenter(s):</b>	<b>Sponsor(s):</b>	<b>Department(s)</b>
Raza, Faisal; Pandey, Chandrashekhar; Heikkinen, Kyle	Lidberg, Russell; Vogt, Timothy	Electrical and Computer Engineering, Physics and Astronomy

### Improving Student Satisfaction in the University's Internal Supply Chain

Class times that are satisfactory to a greater number of students may not be considered in the scheduling process. Enrollment, extracurricular activities, sporting events, and involvement in student organizations all take time and affect student learning and performance. The intent of this research is to examine what class times are considered best for a larger number of students on campus. This study, conducted on a random sample of students on campus, examined what class times are best for a larger number of students on campus. The results will be of value to university scheduling and may lead to increased student satisfaction and enrollment in the school.

**Presentation Index:** G-B 15      **Present Time:** 2:00 PM

<b>Student Presenter(s):</b>	<b>Sponsor(s):</b>	<b>Department(s)</b>
Dahl, Callie; Rolfes, Michael; Quedens, Kirsten; Stay, Jason	Polacco, Alexander	Management

## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

### Flow Cytometric Analysis of the T and B Lymphocyte Populations of Fathead Minnows Exposed to the Muscle Relaxant and Sleeping Aid Pharmaceuticals

Trace amounts of many common pharmaceutical drugs have impacted the aquatic habits of many freshwater systems that are commonly used or have significant exposure to humans via drainage systems, recreation use, etc. The effects of these pharmaceuticals on aquatic organisms have become an area of much research. Drugs such as muscle relaxants (Methocarbamol) and sleeping aids (Temazepam) have well-known effects on humans, but little is known about their effects on fish, specifically on their immune system. The T and B lymphocytes of the immune system are the main cells involved in developing immune responses and fighting pathogens that cause disease. In order to test the effects of the drugs on T and B lymphocytes, a detectable cell surface marker must be determined through staining of lymphocytes with particular antibodies. We obtained 11 potentially effective antibodies from Dr. Bromage of the Veterinary Immune Network. Preliminary results showed that two antibodies were able to detect fathead minnow's T and B lymphocytes by flow cytometry. We hypothesize that exposure of fathead minnows to Methocarbamol and Temazepam will affect the percentages of their T and B lymphocytes. In order to test this hypothesis, fat head minnows will be exposed to Methocarbamol (0.05 µg/L) and Temazepam (0.9 µg/L) for a period of 21 days. Following this period, a single cell suspension will be made from the spleen and anterior kidney, exposed to the antibodies against T and B lymphocytes, and analyzed by flow cytometry. The results of this study will determine the effects of these drugs on an aquatic organism. Furthermore, these findings may indicate possible effects on the human immune system when exposed to water contaminated with these and other pharmaceuticals.

**Presentation Index:** G-B 16      **Present Time:** 2:00 PM

<b>Student Presenter(s):</b>	<b>Sponsor(s):</b>	<b>Department(s)</b>
Scherer, Craig; Phung, Huong; Scott, Andrew; Anderson, Nicole; Kircher, Cole	Cetkovic-Cvrlje, Marina	Biological Sciences

### Performance of DGS Students in Remedial Work at SCSU

This project is a part of the large Enrollment Analytics project undertaken by SCSU. This research focuses on the performance of DGS (Division of General Studies) students at SCSU. Students who fall under the DGS category often must take some of the following courses: MATH 070, MATH 072, COLL 110, and COLL 150. These remedial classes prepare them for other higher level college courses. We used a dataset of 11721 students, who began as freshmen between Fall 2006 and Fall 2011. There were no student names or ID numbers in the dataset, so that student data privacy could be maintained. Our main focus was to determine how DGS students did in their preparatory courses and in the following regular college coursework. To uncover relationships among the different course grades, we also used Math ACT scores and English ACT scores as covariates. We then tracked GPA in MATH 070, GPA in COLL 110, and the overall GPA of the students in different terms at SCSU. Our results will be based on the overall GPA of the DGS students, in determining what are success indicators for these students.

**Presentation Index:** G-B 17      **Present Time:** 2:00 PM

<b>Student Presenter(s):</b>	<b>Sponsor(s):</b>	<b>Department(s)</b>
Pakhreen, Sushma; Thapa, Jenny	Robinson, David	Statistics

## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

### Why Can't Haiti be Like Fiji: Where Has All the Drinkable Water Gone?

Influenced by popular culture, consider two Island countries: one that is financially stable and world renowned because of their water, and another which is poverty stricken, negatively portrayed in the media and struggling to provide citizens with basic "drinkable" water. This project is based on comparing our popular culture ideas here at SCSU; ideas that derive from the media on both island countries of Fiji and Haiti. Through my literature research, combined with surveyed data, the intent is to reveal the impacts and correlation the media plays ultimately into the diffusion of financial aid provided for Haiti. Financial aid that has been used to provide one of the most important basic needs for a human being's existence: drinkable water. The most important interpretation of my research is to apply the knowledge that has been uncovered, to future efforts to sustain suitable, drinkable water in Haiti drafted from other successful countries and resources. Because, "Sure, why can't Haiti be like Fiji?"

**Presentation Index:** G-B 18      **Present Time:** 2:00 PM

**Student Presenter(s):**

Holub, Jamie

**Sponsor(s):**

Blinnikov, Mikhail

**Department(s)**

Geography, Planning and  
Community Development

### The Conservation Reserve Program and Ethanol in MN

The Conservation Reserve Program (CRP) has experienced fluctuations in enrollment acreage in Minnesota during the past decade. Higher corn prices as of late, have greatly contributed to the decline of CRP enrollment. Ethanol production has been shown to increase the price of corn in the areas surrounding the production facilities, which negatively impacts CRP acreage. When corn prices rise, due in part to ethanol production, it then becomes profitable to till and farm less than ideal pieces of land. Much of those pieces had previously been put into CRP, and when the contracts expire, many will never go back into it. The inverse relationship between CRP acreage and ethanol production are expressed cartographically through a series of thematic and choropleth maps. Environmental benefits of CRP are also discussed.

**Presentation Index:** G-B 19      **Present Time:** 2:00 PM

**Student Presenter(s):**

Zwick, Scott

**Sponsor(s):**

Torguson, Jeffrey

**Department(s)**

Geography, Planning and  
Community Development

### Larval Fish Behavior: Effects of E2 Exposure

Estradiol (E2) and other endocrine active compounds have been documented in aquatic ecosystems throughout North America. Previous published studies from our laboratory described an inability of E2 exposed fathead minnow larvae to evade predators. The two experiments conducted as part of this study are investigating the effects of E2 exposure on larval fish behavior. The first experiment is comparing the schooling behavior of unexposed larval fish to that of fish exposed to E2 for 21 days post-hatch. The experimental procedure consists of filming groups of 10 E2 exposed or 10 controlled larvae for a half hour each in a round swimming arena (28 cm diameter, 6.8 cm water depth, 2 cm grid on the bottom). When reviewing the tapes, the swimming activity (number of lines crossed per minute) of each fish is scored individually. Furthermore, the distance of each larval fish from the closest neighboring fish as well as the distance from the center of the swimming arena are also measured. The second experiment adds a small plastic plant on the north side of the container to assess whether E2 exposed larvae use cover to the same degree as unexposed larvae. Together, these two experiments test the hypothesis that E2 exposure does impair normal swimming behavior and increase risk-taking behavior of E2 exposed larvae, potentially resulting in higher rates of predation. This study has been funded by the Legislative-Citizen Commission for Minnesota Resources and has been IACUC approved.

**Presentation Index:** G-B 20      **Present Time:** 2:00 PM

**Student Presenter(s):**

Pichotta, Tia

**Sponsor(s):**

Schoenfuss, Heiko

**Department(s)**

Biological Sciences

## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

### Political Consumerism and Environmental Degradation

Poster presentation that will inform the public of the capitalist consumerism cycle and the strong influence of large corporations.

**Presentation Index:** G-B 21      **Present Time:** 2:00 PM

<b>Student Presenter(s):</b>	<b>Sponsor(s):</b>	<b>Department(s)</b>
Zirbes, Leah	Lindstrom, Sheila	Sociology and Anthropology

### The Effects of Body Image on Memory and Other Cognitive Processes

In our society, unhealthy body image is a significant issue affecting an increasing number of individuals both psychologically and physically. Since the advent of the television, there has been a marked increase in our society on focusing on visual stimuli. My study centers on whether the subjects' memories of pictures of full body shots are affected by their own body image. Body image is the impression an individual has of their own body and is on a continuum from extremely positive to extremely negative. The procedure for my study is as follows. Participants will study pictures of different individuals. Following this, they will take a test which assesses their personal body image. They will then take a recognition memory test. In this test, 25% of the pictures will be initial images from the study phase, 12.5% will be thinner versions of initial images, 12.5% will be heavier versions of initial images, and 50% will be completely new images. The subjects will be shown these pictures and asked to identify whether or not each picture was one of the initial images. My hypothesis is that an extreme body image that is on either end of the spectrum, very positive or very negative, will adversely affect the subjects' ability to accurately recognize the initial images. I further hypothesis that a negative body image will have a larger effect on the subjects' ability to recognize the initial images than any other body image will. The impact body image has on self-esteem will be discussed. Further implications of my study include the effects of body image on memory and other basic cognitive processes. These will also be discussed.

**Presentation Index:** G-B 22      **Present Time:** 2:00 PM

<b>Student Presenter(s):</b>	<b>Sponsor(s):</b>	<b>Department(s)</b>
Blank, Ericka	Valdes, Leslie	Psychology

### First Annotation of Glycine, Serine, Threonine Pathway in *Thiomicrospira Crunogena* XCL-2

*Thiomicrospira crunogena* XCL-2 is a member of a group of deep sea thermal vent inhabitants. It is a spiral shaped sulfur oxidizing gammaproteobacteria with a genome that has 2,427,734 base pairs. Understanding the unique biology of organisms that live in extreme environments may lead to novel chemical processes heretofore never observed on the planet earth. The genome of *Thiomicrospira crunogena* has been completed by the U.S. Department of Energy Joint Genome Institute. SCSU has undertaken the task of determining whether or not the genes for biosynthesis of amino acids are present using comparative genomics. The serine, glycine and threonine biosynthetic pathway is crucial because many biological molecules are composed of these amino acids and the lack of them may lead to diseases and disorders in organisms. Glycine is nonessential, the smallest of the 20 amino acids, and it is the second most common amino acids found in proteins. Glycine is present ubiquitously in almost all organisms, it is a non-essential amino acid that plays important roles in the biosynthesis of nucleic acids, proteins, hemoglobin, bile acids, porphyrins, creatinine phosphate, and other amino acids. It is also an inhibitory neurotransmitter co-released with gamma-aminobutyric acid (GABA) in humans. Serine is hydrophilic, nonessential amino acid and is derived from this pathway. Threonine is an essential amino acid and it is synthesized in plants and microorganisms, but not in humans. The threonine catabolism leads to production of succinyl-coA that is a metabolite in the TCA cycle, which finally leads to production of ATP. The glycine, serine and threonine pathway in *Thiomicrospira crunogena* XCL-2 species may be distinctive due to its survival in extreme environmental conditions. This study may provide interesting cues about the biological processes of the organism that may lead to future research.

**Presentation Index:** G-B 23      **Present Time:** 2:00 PM

<b>Student Presenter(s):</b>	<b>Sponsor(s):</b>	<b>Department(s)</b>
Nawaratnasamy, Sashi; Aden, Fadumo	Kvaal, Christopher	Biological Sciences



## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

### Counting and Viability of the Immune Cells: Hemocytometer Versus Flow Cytometry

The cell counting technique is a basic task that allows researchers to obtain information about the number of immune cells needed in a particular experiment. Historically, the cell counts and viability were obtained by using a hemocytometer and a trypan blue dye that marks the dead cells. The hemocytometer-based cell quantification is a time-consuming, tedious task and prone to human errors. The aim of this study was to use a flow cytometry-based technique for the quantification of cells, that utilize cell counting beads in a combination with fluorescent dyes (propidium iodide (PI) and thiazole orange (TO)), and compare it with hemocytometer-based cell counting. It is possible to distinguish live, dead and injured cell population by using PI and TO fluorescent dyes, along with quantification of cells by counting beads. Leukocytes were isolated from the spleens of C57BL/6 mice and treated with ACK buffer for the elimination of erythrocytes. An aliquot of the cell suspension was diluted in the trypan blue dye and counted by hemocytometer, while the other aliquot was exposed to the PI and TO dyes, as well as the cell counting beads (liquid suspension of fluorescent beads, BD™), vortexed, and analyzed by flow cytometer (BD FACSCalibur). Preliminary results showed that the cell counts obtained by both techniques are comparable ( $9.6 \times 10^6$  by hemocytometer vs  $8.1 \times 10^6$ ) by flow cytometer. However, the cell viability showed significant discrepancy (the percentage of trypan blue-stained dead cells was 24.2 %, while PI-stained cell percentage was 3.2 %). It is suspected that the difference in the results may be due to the penetration of trypan blue dye into both dead and live cells. Overall, these data suggest that both methods are comparable regarding the cell counts. However, the flow cytometric method provides a more precise viability determination compared to the hemocytometer-based method.

**Presentation Index:** G-B 24      **Present Time:** 2:00 PM

**Student Presenter(s):**

Nawaratnasamy, Sashi; Acharya, Subrat; Orth, Cetkovic-Cvrlje, Marina  
Sierra

**Sponsor(s):**

**Department(s)**

Biological Sciences

### Offshore Wind Power Prediction: A Data Mining Approach

Wind energy is an inherently variable resource and this variability has large financial penalties for wind farm operators. A significant portion of this variability lies within the intrinsic conversion of free stream wind speed to actual power generation at a wind turbine. This uncertainty in conversion is largely due to the assumptions made in the published manufacturer's power curve, which is derived within a stable and laminar wind tunnel environment. Using a data mining approach, a more realistic power curve can be derived from the wind turbine SCADA measurements. This derived power curve can provide significant improvements to overall wind power forecasts and reduce the financial penalties associated with load imbalance.

**Presentation Index:** G-B 25      **Present Time:** 2:00 PM

**Student Presenter(s):**

Glynn, Bevan

**Sponsor(s):**

Hansen, Anthony

**Department(s)**

Earth and Atmospheric Sciences

### Practicum in the Department of Campus Involvement

The purpose of this poster session is to display projects I have been working on the Department of Campus Involvement at SCSU. The projects are planning and logistics for the annual Excellence in Leadership Awards ceremony as well as St. Cloud State's first Oxfam Hunger Banquet held in March. In addition to these activities, I also conducted a review of leadership programming offered by SCSU's peer institutions and aspirational peer institutions.

**Presentation Index:** G-B 26      **Present Time:** 2:00 PM

**Student Presenter(s):**

Plachecki, Matthew

**Sponsor(s):**

Imbra, Christine

**Department(s)**

Educational Leadership and Higher Education

## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

### Sonar Testing

Sonar testing is the use of sound waves in the ocean to locate things under water. Sound waves are emitted from a ship or station and travel through the water until they hit something. Then they bounce off and travel back to the place they came from. This makes it possible to locate things under water and figure out how far or near it is. Sometimes when the Navy is testing their equipment they use high frequencies. Under water, the noise is sometimes thousands of times more powerful than a jet engine. This can interfere with and harm aquatic animals that use sonar for their navigation, such as dolphins and whales. It can mess with their hearing causing them to swim into things they would not otherwise swim into or even beach themselves. It can cause serious injury and sometimes even death to the animal. This is important to know about so we can find new ways to do things without causing harm to aquatic animals. All my research has come from the internet. I have found much useful information with many facts and statistics. There are many sites you can go to to help save dolphins and whales from being harmed by sonar testing.

**Presentation Index:** G-B 27      **Present Time:** 2:00 PM

<b>Student Presenter(s):</b>	<b>Sponsor(s):</b>	<b>Department(s)</b>
Pedersen, Mary	Lindstrom, Sheila	Sociology and Anthropology

### Breed and Diurnal Effects on Leptin and Glucose Concentrations in Tropical Cattle

The effect of breed and time of day was evaluated on plasma leptin and glucose concentrations in four breeds of cattle. The breeds were Muturu, White Fulani, Ndama and Muturu x White Fulani cross. Animals were maintained on full feed and had ad-libitum access to water. Further, each animal was weighed daily and bled by jugular venipuncture for three consecutive days. Plasma leptin was determined using the Millipore Multi-species radioimmunoassay and plasma glucose was determined using the Wako Autokit Glucose technique. Plasma leptin was significantly ( $P < .0001$ ) dependent on breed. The Muturu breed had the lowest amount of leptin ( $3.9 \pm 1.8$  ng/ml) while the White Fulani breed had the highest level ( $8.5 \pm 3.2$  ng/ml). There was a significant correlation between bodyweight and leptin. Leptin level was not affected by sex or by time of day. Mean plasma glucose ranged from 42.7 to 54.7 mg/dL and was significantly ( $P = 0.019$ ) dependent on cattle breed. Again, sex and time of day had no effect on plasma glucose concentration. These data indicate that significant breed differences exist in leptin concentrations in tropical cattle. These differences may reflect the disparity in muscularity and adiposity in the

**Presentation Index:** G-B 28      **Present Time:** 2:00 PM

<b>Student Presenter(s):</b>	<b>Sponsor(s):</b>	<b>Department(s)</b>
Yahya, Nawal	Gazal, Oladele	Biological Sciences

### Insulinitis Development in Streptozotocin-treated Autoimmune Type 1 Diabetes in Janus Tyrosine Kinase 3-deficient Mouse Model

Type 1 diabetes (T1D) is a disease in which the beta cells of the pancreas have decreased insulin production due to auto-reactive immune cell, primarily T-cell, attack. Insulin is a hormone that functions in the regulation of blood glucose levels. The invasion of the T-cells during the autoimmune attack of the beta cells is defined as insulinitis. The T-cells contain the molecule, Janus Tyrosine Kinase (JAK3), which is essential for their function. Therefore, it is hypothesized that the diabetes incidence, as well as insulinitis level, will be lower in the experimental model of autoimmune diabetes induced by chemical streptozotocin (STZ) in JAK3-deficient mice, compared to the STZ-treated wild-type mice. The STZ will be administered over the course of a five-day period in a dose of 40mg/kg each day. The mice will be sacrificed on days 7, 14 and 28 following the initial STZ injection, and the pancreata will be collected. The pancreata will then be fixed in formalin and embedded in paraffin. The slide will be stained with a hematoxylin-eosin (H&E) stain and evaluated microscopically for insulinitis levels (on a scale from 0-4, based on the size of the T-cell infiltration of the pancreatic islets). Besides the H&E, staining, pancreatic slides will be evaluated by immunohistochemistry for the insulin expression, in order to confirm decreased/absent levels of insulin in the islets heavily infiltrated by T cells. This data will allow us to understand the importance of the JAK3 molecule in the development of T1D.

**Presentation Index:** G-B 29      **Present Time:** 2:00 PM

<b>Student Presenter(s):</b>	<b>Sponsor(s):</b>	<b>Department(s)</b>
VanDenakker, Tayler; Novak, Travis	Cetkovic-Cvrlje, Marina	Biological Sciences

## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

### Alternative Synthesis and Characterization of PTCDI Derivatives

Primary amines react readily with 3,4,9,10 perylene tetracarboxylic dianhydride through a hydrolysis reaction to produce N,N' disubstituted 3,4,9,10 perylene tetracarboxylic diimides. The reaction was traditionally performed using organic suspension medium, such as imidazole or quinolone. Complications arise in the purification process because of the strong affinity of the suspension medium to the product. An alternate synthesis, where water was the suspension agent, was employed and has been determined to be a superior synthesis. Results of this aqueous synthesis will be presented.

**Presentation Index:** G-B 30

**Present Time:** 2:00 PM

**Student Presenter(s):**

Deurmeyer, Hank

**Sponsor(s):**

Neu, Donald; Lidberg, Russell

**Department(s)**

Chemistry, Physics and Astronomy

### Gene Annotations of Enzymes in the Biosynthetic Pathway of Alanine, Aspartate, and Glutamate in *Thiomicrospira Crunogena* XCL-2

*Thiomicrospira crunogena* XCL-2 is a member of a group of deep sea thermal vent inhabitants. It is a spiral shaped sulfur oxidizing gammaproteobacteria with a genome that is 2,427,734 base pairs. Understanding the unique biology of organisms that live in extreme environments may lead to novel chemical processes heretofore never observed on the planet earth. The genome of *Thiomicrospira crunogena* has been completed by the U.S. Department of Energy Joint Genome Institute. SCSU has undertaken the task of determining whether or not the genes for biosynthesis of amino acids are present using comparative genomics. After automated and manual annotation, the first annotation of the alanine, aspartate and glutamate biosynthetic pathway was presented.

**Presentation Index:** G-B 31

**Present Time:** 2:00 PM

**Student Presenter(s):**

Deurmeyer, Hank; Tilahun, Kaleb

**Sponsor(s):**

Kvaal, Christopher

**Department(s)**

Biological Sciences

### Applied Structural Genomics: A Novel Undergraduate Research Experience

Historically, undergraduate research has been project-based. A student approaches a professor and a mutually appealing project is assigned. This model has three profound weaknesses: 1) It is passive in requiring that students approach professors, 2) Few students can be effectively engaged and, 3) Students typically do not even attempt this conversation until late in their academic career. As we aim to provide experiential undergraduate research opportunities for as many students as possible as early as possible in their academic careers, new approaches are required. One method of achieving this goal is to institute research processes. In an academic environment creating research processes serves more students, and provides leadership and development opportunities that appeal to graduate schools and potential employers while actually reducing faculty workload. For Applied Structural Genomics, students are deliberately recruited as early as the first semester of their freshman year. Teams, composed of students with differing levels of experience, work together to complete shared tasks; mentoring and peer-to-peer support are included by design and "newbies" are trained and encouraged by their peers to accept additional responsibility as their skills develop. In addition to laboratory skills, students develop project management and documentation skills as they plan and execute the project and prepare results for publication. Details of the model as well as results from the spring of 2012 cohort will be presented.

**Presentation Index:** G-B 32

**Present Time:** 2:00 PM

**Student Presenter(s):**

Deurmeyer, Hank; Wagman, Amber;  
Lechleitner, Rebeca

**Sponsor(s):**

Kvaal, Christopher; Jacobson,  
Bruce

**Department(s)**

Biological Sciences

## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

### Growth of Oxide Over-Layers on Magnetite Crystalline Surface

In the environment, iron oxides regulate the movement of trace elements in water and soil systems, including heavy metals. Under environmental conditions with exposure to water and other aqueous species, the surface arrangement of atoms and atomic composition can be altered from the natural arrangement of the mineral. The resultant change in the crystal structure can significantly alter the reactivity of the surface and the rate at which a chemical substance can react. Our research focuses on the studying the changes to the surface structure of the iron oxide, magnetite (Fe<sub>3</sub>O<sub>4</sub>), under environmentally relevant conditions as a function of time. We use complementary electrochemical chronoamperometry (CA) and atomic force microscopy (AFM) to characterize changes to the surface including the formation of oxide over-layer surface structures while investigating growth methods. When Fe<sub>3</sub>O<sub>4</sub> is exposed to an applied oxidative potential of 641 mV in an aqueous solution, pH 5; terraced, triangular structures begin to form where the dimensions and number of these triangular features increase with the duration of the applied oxidative potential. The increased size of these oxide over-layer structures on the Fe<sub>3</sub>O<sub>4</sub> surface result in an increased number of electrons passing through the crystal, which can be used to calculate the depth at which the magnetite crystal is being oxidized.

**Presentation Index:** G-B 33      **Present Time:** 2:00 PM

<b>Student Presenter(s):</b>	<b>Sponsor(s):</b>	<b>Department(s)</b>
Gardner, Colin; Harguth, Jacob	Petitto, Sarah	Chemistry

### Flow Cytometric Analysis of T Cells in Cyclophosphamide (CY)-injected Streptozotocin (STZ) Mouse Model of Type 1 Diabetes

Type 1 Diabetes (T1D) is an autoimmune disease that causes the destruction of pancreatic beta cells. The blood glucose levels increase (hyperglycemia) due to the lack of insulin the beta cells produce. Using streptozotocin (STZ), it is possible to induce autoimmune T1D in the C57BL/6 strain of mice. T cells are responsible for the destruction of beta cells in T1D. It is believed that a particular type of T cells, T regulatory (Treg) cells, can prevent the development of T1D. However, previous studies in our laboratory did not confirm a protective role of that cell population in the STZ model of T1D. We propose to study cyclophosphamide (CY)-enhanced STZ mouse model of T1D, as CY is considered a chemical that can directly diminish Treg population. Because Tregs are considered beneficial against T1D, we hypothesize that CY would promote T1D by destruction of Treg cells. The accelerated development of T1D can be evaluated by immunophenotyping (quantification of T-cell sub-populations via flow cytometry). Our study will include control, STZ-treated and STZ- and CY-treated mice. Mice will be injected with STZ (40 mg/kg/day), followed with CY injections (200 mg/kg/day) on days 6 and 13 post first STZ injection. Hyperglycemia will be monitored on days 7, 14, 21, and 28. On day 28, the mice will be sacrificed, their spleens removed, and single cell suspensions made. Subpopulation of T cells (including the Treg cells) will be detected by flow cytometry using the fluorochrome-labeled antibodies against specific T cell markers.

**Presentation Index:** G-B 34      **Present Time:** 2:00 PM

<b>Student Presenter(s):</b>	<b>Sponsor(s):</b>	<b>Department(s)</b>
Lea, Allan; Thinamany, Sinduja	Cetkovic-Cvrlje, Marina	Biological Sciences

### Effect of COLL 110 on Success in SCSU General Education Courses

This project is part of a large SCSU effort to understand factors that enhance student success in college. The courses COLL 110, COLL 120 and COLL 150 are remedial courses some students take to prepare themselves for regular university level classes. We would like to see if there is any significant effect of taking COLL 110, COLL 120 and COLL 150 before taking three particular core general education courses: PHIL 194, CMST 192 and ENGL 191. We are given a data set of 12,529 students, who entered SCSU as first year students between Fall 2006 and Spring 2011. No student names or ID numbers are included in the data to ensure student data privacy. By the university plan, COLL 110 and COLL 150 are taken mostly by DGS students in their first semester. Our analysis will determine how well these students do in the other classes, when taken at the same time or taken later. We will determine how effective COLL 110 and COLL 150 are in preparing students for the rest of their college coursework. We will compare the success rates of DGS students to non-DGS students.

**Presentation Index:** G-B 35      **Present Time:** 2:00 PM

<b>Student Presenter(s):</b>	<b>Sponsor(s):</b>	<b>Department(s)</b>
Chai, Joyce	Robinson, David	Statistics

## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

### Isolation of CD4+ T Cells by the Isolation Kit II from Miltenyi Biotec

The regulation of the cellular immune response in autoimmune type-1 diabetes (T1D) is not yet fully understood. However, it is known that CD4+T cells play a vital role in the immunopathogenesis of T1D. In order to gain detailed knowledge on the effect and function of these cells in the development of T1D, isolating a pure population of CD4+T cells directly from heterogenous splenic cell population becomes an indispensable method. CD4+T Cell Isolation Kit I (Miltenyi Biotec) and EasySep® Mouse CD4 Positive Selection Kit (StemCell Technologies), previously used in our lab for positive isolation of CD4+T cells, yielded  $70.6 \pm 5.8\%$  and  $88.1 \pm 2.3\%$  purity, respectively, and recovery of  $116.9 \pm 34.2\%$  and  $60.6 \pm 13.0\%$ , respectively. In this study, we aimed to study the purity and recovery of wild-type (WT) and JAK3-deficient (KO) C57BL/6 mice CD4+T cells obtained by a negative selection method using the CD4+T Cell Isolation Kit II (Miltenyi Biotec). Unlike magnetically labeling CD4+T cells in positive selection, CD4+T Cell Isolation Kit II isolates CD4+T cells from single cell suspensions of splenocytes by depleting non CD4+T cells (i.e., B cells, NK cells, monocytes, platelets, dendritic cells, CD8+T cells, granulocytes and erythrocytes), labeled by the biotin-conjugated antibodies. Next, a magnetic column and magnetic separator are used to separate CD4+T cells from the labeled non CD4+T cells. Isolated CD4+T cells are bead- and antibody- free and suitable for any downstream in vitro application, such as proliferation or cytokines assays. Our preliminary results showed  $87.2 \pm 6.9\%$  (WT) and  $76.3 \pm 6.3\%$  (KO) purity, and recovery of  $54.4 \pm 29.3\%$  (WT) and  $36.3 \pm 13.6\%$  (KO), respectively, indicating better purity and recovery rate in WT vs. KO mice.

**Presentation Index:** G-B 36

**Present Time:** 2:00 PM

**Student Presenter(s):**

Gong, Hwee Kiat

**Sponsor(s):**

Cetkovic-Cvrlje, Marina

**Department(s)**

Biological Sciences

### Biological Water Treatment

Water treatment is an industry of mechanics and chemicals. Sewage water can be converted into swimmable, fishable water in a matter of days through a purely natural process. By sending the waste water through a series of emulated ecosystems, we are able to harness the ability to naturally clean water, which the natural world has developed for millions of years.

**Presentation Index:** G-B 37

**Present Time:** 2:00 PM

**Student Presenter(s):**

Dunderi, Lucas

**Sponsor(s):**

Lindstrom, Sheila

**Department(s)**

Sociology and Anthropology

### Pharmaceuticals as a Contaminant of Water

In recent years, increased amounts of pharmaceuticals in our water has become a growing environmental and health concern. This research examines how pharmaceuticals enter our water supply and the effects on the environment and people and explores potential interventions to resolve these health and environmental concerns.

**Presentation Index:** G-B 38

**Present Time:** 2:00 PM

**Student Presenter(s):**

Curtis, Jolene

**Sponsor(s):**

Lindstrom, Sheila

**Department(s)**

Sociology and Anthropology

## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

### The Pendulum Snake

One of the most familiar oscillating systems studied in undergraduate physics is the simple pendulum. Its period of oscillation, independent of mass and amplitude, depends solely on the variation of its length. The purpose of this research, motivated by the manipulation of pendulum length dependencies, investigates the various phase and frequency relationships of a multi-pendulum system due to superposition of harmonic motion. Theoretical and experimental analysis behind pendulum amplitude independence and the correction of small angle approximation are further implicated within the study. The apparatus built for this analysis, models a system of sixteen uncoupled pendula of monotonically increasing lengths, simultaneously oscillating about their fixed pivot positions. Once in motion, the sixteen pendula oscillate at different frequencies due to variations in their lengths. These frequencies, unique to each swinging mass, cause adjacent pendula to swing in and out of phase while undergoing a series of traveling and standing wave configurations. The apparatus is also designed to uniformly change the lengths of each pendula during its cycle, providing the changing wave behavior of a non-fixed system. This multi-pendulum system provides an important physical interpretation of a harmonic oscillator, and its limitations at small angles and the corrections to the period needed for large amplitude oscillations.

**Presentation Index:** G-B 39

**Present Time:** 2:00 PM

**Student Presenter(s):**

Kavouras, John

**Sponsor(s):**

Haglin, Kevin

**Department(s)**

Physics and Astronomy

### Upcycling Great Looks

Upcycling is the process of taking waste materials or useless products and creating them into new products. Discarded materials can be "upcycled" to create accessories, better your fashion, and update your style.

**Presentation Index:** G-B 41

**Present Time:** 2:00 PM

**Student Presenter(s):**

Piehl, Kelli

**Sponsor(s):**

Lindstrom, Sheila

**Department(s)**

Sociology and Anthropology

### Addressing the Specific Needs of the Sophomore Year

The present study sought to inform the College of Education and Human Development (CEHD) to better address the unique needs of sophomore students through advising and career services. Recommendations were made in conjunction with the President's Emerging Leaders Program (PEL). A team was charged by the Office of Undergraduate Education at the University of Minnesota to research the sophomore year and to determine if focused initiatives would positively impact four-year graduation rates and student retention. Based on the analysis, the project team identified areas where focused efforts may improve the sophomore student experience, retention, and graduation rates. The current study seeks to identify the efforts students believe will improve their sophomore year experience (students who have started at the University in the fall of 2010). One academic advisor and three career counselors collaborated to form two surveys to determine sophomores' satisfaction of services received and additional needs they have that are not being met. The two surveys included a Sophomore Student Survey for current sophomores and an Upperclass Student Survey for current juniors and seniors (students who started at the University in the fall of 2008 and 2009). The rationale for doing separate surveys was to see how student perspectives of satisfaction and needs change over time. The Pre-Major Advising Coordinator sent out initial emails to 375 sophomore students and 1,178 upperclass students. Analysis of the results will provide the CEHD community with insight and future recommendations on the types of services that would assist sophomore students' success in academic and career development.

**Presentation Index:** G-B 42

**Present Time:** 2:00 PM

**Student Presenter(s):**

Eiden, Stephanie; Belisle, Andria

**Sponsor(s):**

Klepetar, Adam

**Department(s)**

Counselor Education and  
Educational Psychology

## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

### Deaf and Hearing Visual Memory

The objective of this work is to examine the effect of hearing status and sound/no sound for hearing persons on eyewitness memory. Eyewitnesses and accuracy are important to the criminal justice system. Visual memory recall scores were compiled from ten hearing and ten deaf participants. Scores were used to analyze whether there are differences in deaf and hearing visual memory. These scores were obtained through a survey, after viewing video with footage of a car crash from an eyewitness focal point. It was hypothesized that deaf participants would have a better LVF recall score and total score than hearing participants. Hearing participants were also hypothesized to have a slightly better RVF recall score than deaf participants, but not to a significant degree in the hearing participants who did not have sound.

**Presentation Index:** G-B 43      **Present Time:** 2:00 PM

<b>Student Presenter(s):</b>	<b>Sponsor(s):</b>	<b>Department(s)</b>
Vaske, Hayley	Valdes, Leslie	Psychology

### Undergraduate Learning Assistants

An Undergraduate Learning Assistant (ULA) is an undergraduate student serving as a teaching assistant for undergraduate courses. The St. Cloud State University Mathematics and Statistics Department originally implemented ULAs to reduce DFW rates in courses. This presentation will focus on the impact of ULAs on student learning, pointing to the efficacy of ULAs. It will also include an interesting result that the department had not anticipated — the great impact on the students who work as ULAs.

**Presentation Index:** G-B 44      **Present Time:** 2:00 PM

<b>Student Presenter(s):</b>	<b>Sponsor(s):</b>	<b>Department(s)</b>
Ahrens, Cassandra; Miller, Karri	Hanzsek-Brill, Melissa	Mathematics

### Personality and Metacognition

The purpose of this research is to identify a relationship between personality type and metacognitive ability. The personality types used in this study are: openness, conscientiousness, extraversion, agreeableness, and neuroticism. Metacognition is the knowledge of one's own cognitive processes. It can be broken in to two components of knowledge and processes. A convenience sample of 75 undergraduate students completed the BFI personality assessment and three short stories followed questions to test comprehension. Participants were then asked to predict the number of correct answers on the comprehension questions. Research results showed there is no significant correlation between metacognition and type of personality. Participants with a particular personality type did not score better or worse on the comprehension part of this research.

**Presentation Index:** G-B 45      **Present Time:** 2:00 PM

<b>Student Presenter(s):</b>	<b>Sponsor(s):</b>	<b>Department(s)</b>
Winkels, Andrea	Valdes, Leslie	Psychology

### CN Molecule Collisions with Protons at a Wide Range of Astrophysical Energies

We analyze the quantum-mechanical rotational excitation/de-excitation spectrum and cross sections of CN molecules during low and high-energy collisions with protons, H<sup>+</sup>. The problem is of significant importance in astrophysics of the early Universe, specifically connected with the problems of cosmic microwave background (CMB) radiation. A quantum-mechanical close-coupling method is applied in this work. The cyanide molecule (CN) is treated as a rigid rotor, i.e. the distance between the carbon and nitrogen atoms is fixed at an average equilibrium value. The new results of the excitation/de-excitation cross-sections and corresponding thermal rate coefficients are compared with the results of few previous calculations performed on the basis of few approximate semiclassical frameworks. The interaction potential between CN and H<sup>+</sup> is taken in the following form: proton induced polarization potential + proton-dipole potential + proton-quadrupole potential.

**Presentation Index:** G-B 46      **Present Time:** 2:00 PM

<b>Student Presenter(s):</b>	<b>Sponsor(s):</b>	<b>Department(s)</b>
Sultanova, Madina	Guster, Dennis	Information Systems

## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

### Evaluating the Evocative Effects of an Establishing Operation Using Video-Self Modeling

Video modeling that allows the individual to imitate target behaviors after observing himself or herself successfully engaging in the behavior is known as video-self modeling (VSM). VSM has been shown to be more effective when the individual expresses interest in watching the video. However, few studies have investigated the use of Motivating Operations (MO)s when implementing VSM. MO's are environmental events that affect an organism's behavior by increasing the effectiveness of a given consequence and is an empirically validated principle in applied behavior analysis. The present study was designed to analyze the evocative effects of an MO on noncompliant behavior displayed by a child with autism. The effects of the MO was demonstrated by manipulating pre-session conditions through the use of VSM where the child was exposed to alternating conditions of access to VSM and no access to VSM. A multiple baseline design with an embedded alternating treatments design was used to evaluate the rate of noncompliant and compliant behavior displayed across settings. The results indicated that VSM was effective in reducing noncompliant behavior while increasing the rate of compliant behavior. These findings suggest that an antecedent environmental modification in the form of a motivating operation can be used to increase the effectiveness of VSM when teaching compliance behaviors.

**Presentation Index:** G-B 47

**Present Time:** 2:00 PM

**Student Presenter(s):**

Ashbeck, Hazel

**Sponsor(s):**

Edrisinha, Chaturi

**Department(s)**

Counseling and Community  
Psychology

### The Story of a Variable Star: W Geminorum

Due to the large number of stars in our night sky, amateur astronomers can actively support and add to the databases used by professional astronomers and scientists, such as the American Association of Variable Star Observers (AAVSO). Stars are large collections of mostly hydrogen gas that undergo nuclear fusion in their cores. The life of these stars is strongly dependent on their mass giving a variety of processes and outcomes. Viewing and analyzing the light from stars allows us to determine their range of properties. We investigated the period of magnitude variation to determine distance, temperature, and size of the variable star W Geminorum. This star is a Cepheid type variable where the period of fluctuation can be directly used to calculate its distance away from Earth. Cepheid variable stars can be used as distance measures to map the distances of our galactic neighborhood. Naked eye observations as well as the use of a CCD camera were used in gathering the magnitude data. A telescope, specifically a refractor and Maksutov-Newtonian telescope, were used to collect the star light. The images collected by the CCD camera were processed such that the signal-to-noise ratio was maximized as well as the image flattened and normalized. The image processing methods practiced in this project exemplify techniques used in photometry. The results have shown that W Geminorum is fluctuating with the same period and range as has been measured by other sources. The current models for Cepheid variables match the observations. The period found was 7.87 days with an average apparent magnitude of 6.9. From this period the calculated distance was 4,831 light years. The average temperature was found to be 5,000 Kelvin with an average radius of 70 solar radii.

**Presentation Index:** G-B 48

**Present Time:** 2:00 PM

**Student Presenter(s):**

DeStefano, Anthony

**Sponsor(s):**

Foudray, Angela

**Department(s)**

Physics and Astronomy



## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

### Geographical Distribution of Horse Stables in Stearns, Benton, and Sherburne County.

For most of recorded human existence horses, as a domesticated animal, have played a vital role. With the invention of the automobile and advancing farming techniques, the role of domesticated farm animals as a means of production has greatly diminished. With the role of horses gone, the industry reinvented its self into an industry that focuses on horses for riding and keeping as companions. Today, there are thousands of horse stables across the country and more spring up each day. Since this is a relatively new industry, little has been done to document its impact on local and state economy. This study is trying to shed some light on this industry by creating a database of documented professional horse stables in the Stearns tri-county area in Minnesota to see just how many are in the area and where there is potential for expansion. To do this, I cross referenced multiple accredited state horse associations with each other to get a complete list.

**Presentation Index:** G-B 50

**Present Time:** 2:00 PM

**Student Presenter(s):**

Offord, Bryce

**Sponsor(s):**

Torguson, Jeffrey

**Department(s)**

Geography, Planning and  
Community Development

### Dilantin Inhibits Chemoconvulsant Induced Seizure-Like Activity in Planarian

Planaria or flatworms are invertebrates that live in seas and some in fresh water. They enjoy living under rocks to keep away from the light. Planarian has a very comparable nervous system to vertebrates. One unique feature of planarian is the fact that they can repair and replace tissue that is lost or damaged after injury or during growth. Over the years, planarians have become one of the most used models to study convulsants and anti-convulsants drugs. This research shows that planarians when exposed to picrotoxin, a chemoconvulsant drug, produced induced seizure-like activity in a dose-dependent method. Phenytoin (Dilantin) exhibits anti-convulsive effects on planaria by inhibiting the effects of picrotoxin. Picrotoxin induced dose-dependent seizure behaviors in planaria, with 5.0 mM picrotoxin showing maximum seizure behaviors. The cumulative mean of planarian seizure-like activity (pSLA) induced by picrotoxin decreased dose-dependently when increasing concentrations of phenytoin was co-applied with 5 mM picrotoxin. We have tested 1-100  $\mu$ M concentrations of phenytoin with 5 mM picrotoxin and the results from these behavioral experiments will be presented in this colloquium. The outcome from these experiments shows that anti-seizure drug phenytoin helps lower the picrotoxin-induced seizure activity in planaria.

**Presentation Index:** G-B 51

**Present Time:** 2:00 PM

**Student Presenter(s):**

Roberts, Mornjay

**Sponsor(s):**

Ramakrishnan, Latha

**Department(s)**

Chemistry

### An Analysis of Traffic Accident Locations in St. Cloud, MN

Several studies have shown that the type of road intersection has an effect on the number of traffic accidents that occur. This study will examine the significance of intersection type and location, in relation to the number of traffic accidents that occur in St. Cloud, MN. Using ArcGIS will allow the data from the St. Cloud Police Department as well as the St. Cloud Transportation/Traffic Engineering Department to be cartographically displayed. With the potential to improve road safety, this data will be examined and compared to aid in illustrating patterns at the intersection types and locations in St. Cloud, MN which may have an increased accident rate.

**Presentation Index:** G-B 52

**Present Time:** 2:00 PM

**Student Presenter(s):**

Engelen, Brandon

**Sponsor(s):**

Torguson, Jeffrey

**Department(s)**

Geography, Planning and  
Community Development

## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

### **Esox Muskellunge**

The Minnesota DNR is planning on introducing muskies into the Sauk River chain of lakes through a stocking program. The muskie is considered a prize game fish that can be a challenge to catch. Currently in Minnesota, there are only 116 waterways that hold these fish and the DNR is looking to increase this number. Behind this issue are the consequences of introducing these muskies into the ecosystem. People of society feel that introducing a large predator fish in these lakes will hurt the populations of current game fish that reside in these lakes. To find out if this stigma is true I put together a survey that would ask specific questions to find out how people feel about this issue. I went to Scheel's sporting goods store and administered the survey. During this period of time when I was administering the survey I had 87 volunteers that actively participated. After analyzing the results I have determined that my audience had very little knowledge on the subject and my results did not answer my original question of how people feel about introducing muskies into the Sauk River chain of lakes.

**Presentation Index:** G-B 53

**Present Time:** 2:00 PM

**Student Presenter(s):**

Nixon, Barron

**Sponsor(s):**

Simpson, Patricia

**Department(s)**

Biological Sciences

### **Historical Development and Environmental Value of the St. Cloud Beaver Islands**

The Beaver Islands are an archipelago containing over twenty islands located on the Mississippi River. The Beaver Islands of the Mississippi River are great environmental assets located in close proximity to St. Cloud. There is a lack of scholarly attention and historical development of the islands, as well as a lack of understanding people may have about them. There is a lot of wilderness-like qualities of the Beaver Islands people can experience and yet residents of St. Cloud may not be aware of such opportunities. Researching the Beaver Islands provides more attention to the historical development of Stearns County and the role of the Beaver Islands within that history. Knowledge and information was acquired through field work by various visits to the islands, archival research, and through the analysis and interpretation of other primary and secondary sources. Through interpretation and analysis of the available sources, a more detailed and complete history of Stearns County has been created; with this research providing a much needed academic interpretation of the Beaver Islands.

**Presentation Index:** G-B 54

**Present Time:** 2:00 PM

**Student Presenter(s):**

Mooreson, Ryan

**Sponsor(s):**

Torguson, Jeffrey

**Department(s)**

Geography, Planning and  
Community Development

### **Variance in Student Confidence Levels and Their Success Throughout Spring 2012 Semester General Chemistry I (CHEM210)**

Many education professionals have stated the "self-fulfilling prophecy" at one point in time. A student's confidence level and that impact on their success in a class can be of high significance to educators in understanding the variance of their students' success. This can also allow educators to plan lessons accordingly and to help students who might otherwise fail to understand the course materials, and therefore pass the course. In scholarly articles that have been found, many students have done poorly in classes they felt less confident about. Whereas in courses they felt confident students have had a high level of success. The research that will be conducted will be used to compare students' confidence levels with the amount of effort they put into General Chemistry I (CHEM210) and their success in the class. The question at hand is: Do students' confidence levels affect their success on scheduled exams in General Chemistry I? From there we could also ask: How do their confidence levels vary with their exam scores? In order to analyze students' confidence levels, we need to survey them throughout the General Chemistry I course. Due to presentation scheduling, only three surveys can be given in order to meet the presentation deadline. The project will be conducted during spring semester 2012 for St. Cloud State University students. I will be presenting the research, the reasoning, and the process to the students at the beginning of the semester to all the General Chemistry 1 sections (excluding the online section). General Chemistry I students will be anonymously surveyed at the beginning of the semester. They will then be anonymously surveyed after the first and second test of the semester. The surveys are papers surveys and tallied up by myself twice for accuracy.

**Presentation Index:** G-B 55

**Present Time:** 2:00 PM

**Student Presenter(s):**

Lamp, Amber

**Sponsor(s):**

Petitto, Sarah

**Department(s)**

Chemistry

## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

Session H-GN

Economics

Glacier North

### The Economic Impact of Professional Sports Franchises: Are They Worth Public Subsidization?

This research investigates the relationship between professional sports franchises and real personal per capita income. It examines 43 metropolitan statistical areas in the United States from 1969 to 2010. The empirical model used takes into account the entry and exit of professional baseball, basketball, football, and hockey franchises, as well as real per capita personal income of the entire United States over this time, and uses these to attempt to explain per capita personal income in the MSA's. Like previous studies on this matter, this research questions whether the economic basis for public subsidy of these franchises is supported by actual data. Past studies have found that the primary beneficiaries of these investments are the franchise owners, not the taxpaying citizens they claim to help.

**Presentation Index:** H-GN 1

**Present Time:** 3:30 PM

**Student Presenter(s):**

Rajewsky, Michael

**Sponsor(s):**

Hughes, Patricia

**Department(s)**

Economics

### Entertainment or Economics

Minnesota is facing the decision of whether to build a new stadium, renovate the old one, or lose the Vikings. Advocates of a new stadium argue that it will stimulate the local economy, but is this a true argument? There is an assumption among society that professional sports, its teams and stadiums, affect economic growth, this research looks into the validity of this claim. The model uses per capita income as the indicator for economic growth, other empirical data accounts for the entry and exit of professional sports teams (football, basketball, baseball and hockey are the four leagues being analyzed) and the presence of sports facilities, along with employment and education as factors affecting economic growth. The result of this research is to find out if tax payer money is really being put to good use, investing in a new stadium or if we might be just as well off without the Vikings and a new stadium.

**Presentation Index:** H-GN 2

**Present Time:** 3:50 PM

**Student Presenter(s):**

Buchmayer, Nicollet

**Sponsor(s):**

Hughes, Patricia

**Department(s)**

Economics

### Local Government Budgets and the Great Recession

The funding of local government has changed greatly over the last fifty years. Instead of relying on local sources of revenue, most local governments have become dependent on state and federal grants to fund the services that they provide. For this project, I will examine if grants from the state government of Minnesota and from the federal government affect the rate of property taxation across all eighty-seven Minnesota counties. As a secondary part of this project, I am going to examine if spending by Minnesota county governments on specific expenditures like social services, highway projects, or healthcare have an effect on property taxes. In order to complete this research, I have reviewed five journal articles that analyze the ways in which local governments can generate revenue. The results from this research are mixed showing that property taxes will fluctuate with the level of grants provided, but these fluctuations are dependent on decisions by local government officials. Based on this research, I am going to create a model that utilizes an ordinary least squares regression in order to analyze the effects of state and federal grants on property taxes for Minnesota counties. The results of this model will allow citizens, government officials, and local government administrators to better understand the impact of changes in the levels of aid provided to local governments on the level of property taxes.

**Presentation Index:** H-GN 3

**Present Time:** 4:10 PM

**Student Presenter(s):**

Johnson, Chad

**Sponsor(s):**

Hughes, Patricia

**Department(s)**

Economics

## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

### Student Loan Default Rates: Are They Headed Towards a Financial Crisis?

The current financial crisis has changed the landscape of expectations for the college graduate. The value gained by attending college is offset by the expense of paying for tuition and boarding. The GSL loan program helps those who are in financial need pay for college, and default rates on these loans has been increasing. Default rates are connected to individual characteristics such as race, parental income, graduation rates, and employment status based on other research. Most of these factors are not in control of the students using the GSL program. They are based on who their parents are, where they live, and opportunities extended because of these factors. These conditions are also driving factors influencing the decision to attend college. This model uses macro data sets of economic factors indicative of why they default. The model goal is to connect economic conditions and national graduation rates and tuition changes as factors of default rates. This model addresses how much control students have over default rates based on these questions: Can we expect the default rates to increase with a detracting business cycle? What factors can policy makers identify to help control the default rate in GSL program? The model will be used to identify other factors, if any, are also at cause to default rates and test the significance of that connection.

**Presentation Index:** H-GN 4

**Present Time:** 4:30 PM

**Student Presenter(s):**

Kunkel, Chadwick

**Sponsor(s):**

Hughes, Patricia

**Department(s)**

Economics

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**Session H-GS**

**Sociology**

**Glacier South**

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### Community Building and Gardening: How to Organize Resources in Your Community

We have identified in the St. Cloud area at least fourteen different community gardens. Each one has found success without networking outside of their own garden. We collected their information and created a directory with them to share resources, knowledge, or connect to broaden their ability to connect to a larger membership of people. These gardens exist independently in the community and networking them is possible through shared information and collaboration of time and talent. The directory is a tool that can enable communities to plug into networks based on local system of knowledge around growing food. This process brings together resources and pre-established systems to connect those curios about gardening and living local. The ultimate goal for this process is to build community bonds through growing, eating and sharing food. The second part of the goal is the connections of knowledge around the skills to create your own food and building links between community members that strengthen a commitment to being active in your local neighborhood. We contacted several leaders of larger gardens and developed a "map" of garden coordinators to coalesce information about each identified garden. With this information and outside resources, we developed a directory that contains the community gardens in St. Cloud. This directory goal has been to connect time, talent, and resources. This has led to the recreation of the Community garden network in St. Cloud and data utilization at the state level by the non-profit group Gardening Matters. The goal in this presentation is to lay out the steps of how this can be done in other communities.

**Presentation Index:** H-GS 1

**Present Time:** 3:30 PM

**Student Presenter(s):**

Stay, Karen; Kunkel, Chadwick

**Sponsor(s):**

Finan, Ann-Marie

**Department(s)**

Sociology and Anthropology

## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

### **Movies and Video Games as Aesthetics, Minorities as Gamers and Moviegoers**

Books, movies, video games, TV shows, comics, cartoons, paintings, and drawings are a few of the “entertainment mediums” permeating our lives and culture. These mediums would not have survived to see this day had people not enjoyed both making them and “consuming” them. If this research had a larger scope it would focus on coming to a sociological understanding of all of these things. However, the focus of this presentation will be on two particular “entertainment mediums”; film media and video games. There are two reasons for this focus; these aspects of entertainment culture tend to marginalize minorities the most and they tend to be the most controversial. This presentation will not only explore film media and video games as Aesthetics, but also look at how these mediums have been primarily dominated by white males (or in the case of video games white and Japanese males who some might argue are more racist and sexist than white males). When coming to a sociological understanding of movies and video games, it is important to understand how the two are connected. Though many potential connections exist, for simplicity's sake, this research will only concern it's self with two; how they affect children as they grow up and how they affect us in our adult lives. This research will argue that the way in which these particular mediums affect us as we grow up affect what we come to believe and how we think, thus reinforcing stereotypes and false understandings of minorities.

**Presentation Index:** H-GS 2

**Present Time:** 3:50 PM

**Student Presenter(s):**

Sherman, Sonny

**Sponsor(s):**

Freilinger, Rebecca

**Department(s)**

Sociology and Anthropology

### **Becoming an Artisan in San Juan de Oriente, Nicaragua**

San Juan de Oriente, a small village in Nicaragua, is renowned for the stunning tradition in ceramics. The culture of this community is built around the practice of ceramic making. The purpose of this investigation was to discover the nature of relationships in the towns social system formed around the artisan profession. In order to gain a firsthand understanding of the work involved in making ceramics in San Juan de Oriente I undertook a two-week apprenticeship with three artisan masters in San Juan de Oriente to document and practice the techniques used in the local ceramic styles; Rustic, Pre-Colombian, and Creación Libre (Free cration). During this time I lived in the village and conducted 23 interviews with community members to collect the history of how the indigenous practice of pottery making was developed into the community's major source of employment and shared identity. I gathered local definitions of levels of artisan and other important roles as I mapped the network of labor division of the ceramic process. In doing so, I recorded my informants experience in the process to becoming an artisan. The results of this study gave insight into how these artisans have been able to adapt to a global market by utilizing and reinventing their traditional practices through creative means rather than forfeiting them in the face new economic situation.

**Presentation Index:** H-GS 3

**Present Time:** 4:10 PM

**Student Presenter(s):**

Frost, Hannah

**Sponsor(s):**

Lavenda, Robert

**Department(s)**

Anthropology and Sociology

## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

### Theory and Praxis: Implications on the Uses of Film in the Social Sciences

The aim of this project is to give critical suggestions to social scientists regarding the use of film. In this project, there is a short historical background on the study of film in academia. Based on the historical background, the importance of this project has its basis in both theory and methodology. In both theory and methodology, there are multiple tensions revealing disciplinary splits. The juxtaposed case studies of filmmakers Jean-Luc Godard and Michael Moore are starting points to aid in revealing the tension between the theory and practice of film study. Next, I suggest what additions to make to the study of film in the social sciences. Then, I address three theoretical tensions. The theoretical tensions are between critical literary theory and critical social theory, between film theory and auteur theory, and between formalist film theory and Marxist film theory. Within the third tension is the use of apparatus theory, which suggests that all of the elements in filmmaking are ideological. There are three tensions in the theoretical applications. The tensions in application of theory are between the practices of film studies and genres, between academic film criticism and journalistic film criticism, and between the inclusion and exclusion of representation. I make three suggestions for social scientists to work towards closing the research gap between the study of film and its use in the social sciences. My closing remarks are on the findings related to the case studies, theoretical tensions, and practical tensions. The overall argument of this project is that social scientists should work towards closing the research gap between the study of film and its uses in the social sciences.

**Presentation Index:** H-GS 4

**Present Time:** 4:30 PM

**Student Presenter(s):**

Pickar, Michael

**Sponsor(s):**

Phillion, Stephen

**Department(s)**

Sociology and Anthropology

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**Session H-VN**

**Behavioral Studies and Humanities**

**Voyageurs North**

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### Stealers

We evaluated a visual prompt procedure based on the principles of applied behavior analysis to evaluate if individuals will return a lost wallet to the lost and found at the Information Desk in Atwood. A woman's wallet and man's billfold was dropped in the basement of Atwood during separate sessions. The wallets contained \$23 cash, some old receipts, a driver license, punch cards, and loose change. During baseline participants were not given a visual prompt of where to return the lost wallet and we observed if participants returned the wallet to the designated lost and found at the Atwood Information Desk. During intervention, a visual prompt giving instruction to return the lost items to the Atwood Information Desk was placed in the vicinity of the lost wallet and around the Atwood building. Visual prompting consisted of posters that displayed information on the location of the lost and found. Visual prompting was evaluated using an ABAB Reversal Multielement Design. Following the completion of the ABAB design, we conducted several follow up probes to examine if the posters had a carry-over effect after their removal on increasing the return of lost items to the Atwood Information Desk. Results indicated that very few participants returned the wallet/billfold to the Atwood Information Desk during baseline. Once intervention was implemented; a visual prompt in the form of a poster, participants were more likely to return the item to the lost and found. This was shown by the increase rate of returns to the Atwood Information Desk. This data suggests that visual prompts are an effective strategy to teaching and promoting behavior.

**Presentation Index:** H-VN 1

**Present Time:** 3:30 PM

**Student Presenter(s):**

Ibs, Rachel; Esselman, Paige; Carlson, Bruce;  
Lucking, Samantha; Schlagel, Leah

**Sponsor(s):**

Edrisinha, Chaturi

**Department(s)**

Counseling and Community  
Psychology

## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

### Litter 'R' Us

Litter is the improper disposal of trash; it is one of the most neglected and obvious forms of environmental degradation. The consequences of inaccurately discarding trash affect society, yet there is not a conscious effort to reduce the problem of litter. Thus, the purpose of our study was to examine the percentage of people that pick up "litter" on campus. The experimenters placed decoy trash in designated locations and observed whether individuals would pick up or ignore the litter. Results showed the percentage of people picking up the litter was nonexistent, an average of 0%. Therefore, an intervention was implemented to increase the amount of people that pick up litter. The study continued to place decoy trash in designated areas and observe individuals; however, an extra stimulus of a garbage can mascot with the words PICK UP TRASH was added to influence the behavior. Results following the intervention still showed a low percentage of individuals picking up litter, an average of .04%. Out of 26 sessions and a total of 4,301 individuals passing the decoy trash only 183 picked it up. Therefore, our study concludes the likelihood of someone to pick up litter on campus is exceedingly low.

**Presentation Index:** H-VN 2

**Present Time:** 3:50 PM

**Student Presenter(s):**

Winchester, Kimber; Trettin, Karen;  
Christenson, Heidi; Chiinze, Thandeka

**Sponsor(s):**

Edrisinha, Chaturi

**Department(s)**

Counseling and Community  
Psychology

### Dead Reckoning: How Wasting Time in Libraries Helps One to Read Philosophy

Inductive thinking is difficult to analyze retrospectively, especially when it generates new frameworks of thought. Using ethnographic notes to trace the path of particular discoveries made during browsing sessions in the library, I explore the pedagogical value of this process. Part of an independent study investigating the hierarchical ranking of ideas into formal subject heading categories, these browsing sessions involved open-ended goals that could lead in any direction. The only requirement was that I situate the core arguments in each book within the library's classification system that organized the books according to their scope and purpose (from B-philosophy, through D-history, G-earth sciences, H-social science, J-law, L-education, M-music, N-art, P-literature to the hard sciences-Q). This task of empirically discovering existing structure led to the discovery of exceptional books whose organizing logic crossed over to distant call number sites in seemingly regular ways having little to do with the overarching hierarchical structure of the library. I will probe the ontological status of these exceptional books and unexpected linkages. Using a browsing session that led to a particularly powerful discovery involving three books found at random, I consider the nature of the inductive events that led to this discovery. Working backwards from the logic in the third book which argued for a naturalized epistemology assimilating the insight drawn from first two books (G465, ML3531) into a BD161 topic, I found myself asking quite solid questions about the relationship between ontology, epistemology, and the natural sciences. Did the insight of linking the G and ML books exist naturally, independent of my subjective reading of them; or did I draw a tangential connection between them unrelated to the topics they discussed? As this initial question led to more focused queries, I conclude that random browsing in the library is a good way to learn philosophy.

**Presentation Index:** H-VN 4

**Present Time:** 4:30 PM

**Student Presenter(s):**

Fonken, Gael

**Sponsor(s):**

Johnson, Carla

**Department(s)**

Philosophy

## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

Session H-VS

Mechanical and Manufacturing Engineering II

Voyageurs South

### Ergonomic Study of Metal Finishing Area at Tescom

The project involves an ergonomic study at the metal finishing area at Tescom, an Original Equipment Manufacturer of pressure reducing industrial regulators. There are approximately ten steps involved with cleaning a typical regulator piece part and it is a repetitive, labor-intensive process. The project analyzes the technician's working environment that puts stress on his body. The study shows how completing a single task in the metal finishing area may not seem to cause any physical strain to the technician, but repeating this work numerous times throughout the day, can unwittingly cause significant musculoskeletal injury. Several options were presented to the company on how to prevent these injuries, which included the addition of stress reducing aids and providing educational information to the technicians and management. The implication of the study is to reduce the risk of injury to the technician and create a safe working environment.

**Presentation Index:** H-VS 1

**Present Time:** 3:30 PM

**Student Presenter(s):**

Rayamajhi, Pranesh; Rensberger, Lee

**Sponsor(s):**

Shah, Hiral

**Department(s)**

Mechanical and Manufacturing  
Engineering

### Current State Value Stream Mapping of Tank Assembly Line at Polar Tank Trailers

Polar Tank Trailer has achieved success through customer-focused manufacturing. With a full line of stainless steel, aluminum and mild steel trailers, Polar can provide equipment suited to a vast spectrum of transport applications. Polar has been witnessing a continuous increase in the demand of trailers. Based on the current production rate, Polar cannot meet the requirements of the customers. Also, the current process flow has a lot of material handling problems. The scope of our project is to create a current state value stream map from the receiving end of raw materials until the assembly line. The main objective of this project is to identify and eliminate the non-value added time and to identify the potential weakness of the process. By identifying and reducing the non-value added time productivity can be increased. The current value stream map will be created using Microsoft Visio by calculating the takt time and analyzing the material and information flow. The details and outcome of the study will be discussed during the presentation.

**Presentation Index:** H-VS 3

**Present Time:** 4:10 PM

**Student Presenter(s):**

Mohite, Mayur; Li, Ling; Siddique, Abubucker;  
Liu, Zhiyu

**Sponsor(s):**

Shah, Hiral

**Department(s)**

Mechanical and Manufacturing  
Engineering



## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

### Comparison Between Two Computer Forensic Programs

Computer forensics is the study of digital forensic science, from legal evidence found in electronic devices to computer systems and networks. Computer forensics is relatively new and was not developed until the 1980s when law enforcement recognized that computer crimes were drastically increasing. It has been used worldwide in high profile cases, and has become a very reliable and widely acceptable tool within the US and European court systems. The field of digital forensics is a relatively new field of study. Many of the techniques used in computer forensics have not been formally defined. Computers are becoming more powerful as technology advances, forcing the field of computer forensics to constantly develop and grow. This research paper will focus on the different forensics software available, more importantly which software is more efficient. This research will focus on the way the software is able to back up data and retrieve deleted and hidden files from hard drives. The research will compare the difference between these types of software and investigate if free software offers similar attributes to software available only for purchase. There are many forensic tools and programs in the field of computer forensics. It is important to use the correct forensic tools and programs during an investigation, in order to maximize the amount of information or data found. Different forensic tools and programs will be used to examine various hard drives. The research will focus on the benefits and disadvantages of two programs as well as which program allows the investigator to maximize the results. The two programs that will be utilized are FTK Toolkits and ProDiscover. Working with these two programs will give the researcher a chance to examine the various hard drives and analyze the results in order to determine which program is more efficient.

**Presentation Index:** H-VS 4

**Present Time:** 4:30 PM

**Student Presenter(s):**

Al-Mansour, Feras

**Sponsor(s):**

Schmidt, Mark

**Department(s)**

Information Systems

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**Session I-B**

**Poster Presentations III**

**Ballroom**

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### Surface Characterization of Organic Electro-optic Materials

Organic electro-optic materials are the future of electronics. The use of these materials as opposed to inorganic materials provides a less costly and eco-friendly alternative to current electronic materials. These materials have numerous device applications ranging from transistors, photovoltaics, and light emitting diodes. This research focuses on characterization of the surfaces of two classes of these materials, polyacenes single crystals including tetracene and nanofibers of perylene tetracarboxylic diimide (PTCDI) derivatives. It is important to understand surface morphology because the electronic and optical properties of a number of devices are influenced by the surface of the material, which may potentially dictate the performance of the device. The imaging of these single crystals and nanofibers will be conducted using scanning probe techniques (Atomic Force Microscopy - AFM), Scanning Electron Microscopy (SEM), and standard optical imaging.

**Presentation Index:** I-B 2

**Present Time:** 4:00 PM

**Student Presenter(s):**

Rottiger, Trent; Rowe, Casey

**Sponsor(s):**

Neu, Donald; Lidberg, Russell

**Department(s)**

Chemistry, Physics and Astronomy

## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

### The First Annotation of the Valine, Leucine and Isoleucine Biosynthetic Pathways of *Thiomicrospira crunogena* XCL-2

*Thiomicrospira crunogena* XCL-2 is a member of a group of deep sea thermal vent inhabitants. It is a spiral shaped sulfur oxidizing gammaproteobacteria with a genome that is 2,427,734 base pairs. Understanding the unique biology of organisms that live in extreme environments may lead to novel chemical processes heretofore never observed on the planet earth. The genome of *Thiomicrospira crunogena* has been completed by the U.S. Department of Energy Joint Genome Institute. SCSU has undertaken the task of determining whether or not the genes for biosynthesis of amino acids are present using comparative genomics. Valine, Leucine and Isoleucine are non-polar amino acids and have aliphatic hydrocarbon side chains ranging in size from a methyl group for Valine to isomeric butyl group for Leucine and Isoleucine. The three branched-chain amino acids - isoleucine, leucine, and valine - constitute approximately 70% of the amino acids in the body proteins. As such, their value in the formation and maintenance of structural and functional integrity in humans is unmeasured. Valine, Leucine and Isoleucine inhibit the growth of anthrax bacillus, whereas a mixture of the three stimulates the growth. We hypothesize that these amino acids have biosynthetic pathways in *Thiomicrospira crunogena* XCL-2, and that we will be able to identify the genes responsible for the synthesis of these amino acids using a comparative genomics approach.

**Presentation Index:** I-B 3

**Present Time:** 4:00 PM

**Student Presenter(s):**

Rai, Arbin; Gopali, Bishow

**Sponsor(s):**

Kvaal, Christopher

**Department(s)**

Biological Sciences

### Pesticides and Health Risks to Children

Pesticides pose serious risks to human health with the most vulnerable population being children. The effects from the chemicals in pesticides include cancer, emotional abnormalities, and impaired cognitive functioning. The objective of my project is to inform others of the health risks and dangers that pesticides pose on our children.

**Presentation Index:** I-B 4

**Present Time:** 4:00 PM

**Student Presenter(s):**

Quarve, Greta

**Sponsor(s):**

Lindstrom, Sheila

**Department(s)**

Sociology and Anthropology

### Detecting the Geometry of the River and Its Ice Thickness

We are trying to find ways to make measurements on a frozen river to find the ice thickness and river depth so that the AHS department can see how the frozen river forms a type of pipe, and what the effects of this are. There are three different ways for us to do this. The three methods include laser, sonar, and ground penetrating radar. Laser will use light waves to make the measurements and time it takes to catch the reflected light. Sonar will use sound waves to make the measurements needed by propagating the sound waves through the ice and water and catch the reflections. Sonar also measures the time it takes to catch the reflected waves and calculates the distance the sound waves have traveled. Ground Penetrating Radar uses Electro-magnetic waves to make the measurements. Ground penetrating radar propagates the EM waves through the ice and water and catches the reflected waves, and calculates the distance it has traveled to find the ice thickness and water depth. These are the three methods that we will be investigating to find the shape and structure of the frozen river, so that the dimensions of an artificial pipe can be measured and recreated for simulations by the AHS department.

**Presentation Index:** I-B 5

**Present Time:** 4:00 PM

**Student Presenter(s):**

Almasalmh, Bandar; Almasalmh, Firass;  
Ulrich, Keith

**Sponsor(s):**

Petzold, Mark

**Department(s)**

Electrical and Computer Engineering

## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

### The First Annotation of the Cysteine and Methionine Biosynthetic Pathways of *Thiomicrospira crunogena* XCL-2

*Thiomicrospira crunogena* XCL-2 is a member of a group of deep-sea thermal vent inhabitants. It is a spiral shaped sulfur-oxidizing gammaproteobacteria with a genome that is 2,427,734 base pairs. Understanding the unique biology of organisms that live in extreme environments may lead to novel chemical processes heretofore never observed on the planet earth. The genome of *Thiomicrospira crunogena* has been completed by the U.S. Department of Energy Joint Genome Institute. SCSU has undertaken the task of determining whether or not the genes for biosynthesis of amino acids are present using comparative genomics. Cysteine is a hydrophilic amino acid due to its Thiol group interacting with water. It is a semi-essential amino acid so it can be biosynthesized in an organism. It acts as an antioxidant and plays a role in mucous breakdown in the body. Methionine is an essential non-polar amino acid, and is known as the start codon for mRNA. It is important, similarly to cysteine, due to its antioxidant properties from the sulfur residue in the amino acid. Methionine is also important in the breakdown of fats, preventing build-up in the arteries, while it produces ethylene in plants. We hypothesize that these two amino acids have biosynthetic pathways in *Thiomicrospira crunogena*, and that we will be able to identify the genes responsible for the synthesis of these amino acids using a comparative genomics approach.

**Presentation Index:** I-B 6

**Present Time:** 4:00 PM

**Student Presenter(s):**

Grenier, Garrett; Patel, Nehalkumar

**Sponsor(s):**

Kvaal, Christopher

**Department(s)**

Biological Sciences

### Views of Retirement Amongst the Hmong

The older Hmong population in Minnesota came without the concept of Hmong retirement. This research explores whether the views they had for retirement changed when they immigrated to the United States and what these views are in comparison to views about retirement of the Hmong born in the US. Oral interviews were conducted on the Hmong population within the Minneapolis/St. Paul area. Three age groups were asked questions about their thoughts concerning retirement. Almost every one of the youngest age group (18-33) had favorable views on retirement. Some of the middle-aged group (39-53), and the majority of the older age group (55-72), did not view retirement as a concept in the Hmong culture. They expected others to take care of them or to "work until death." Much of this research focused on the translation of the concept of retirement and its meaning or, non-existence, in the Hmong culture.

**Presentation Index:** I-B 7

**Present Time:** 4:00 PM

**Student Presenter(s):**

Vue, KongMeng

**Sponsor(s):**

Devoe, Marlene

**Department(s)**

Psychology

### Recreational Boating Impacts on the Mississippi River

The amount of recreational boating on the Mississippi River has reached a high in the past few years and it is having many environmental effects on the river. Some of the effects are emissions and exhaust, propeller contact, turbulence from the propulsion system, waves produced by movement, noise, and movement itself. Sediment resuspension is on the rise, as well as water pollution and disturbance of fish and wildlife. The height and frequency are factors for rates of erosion affecting the entire stream bank. The shorelines are eroding 2-3 feet a year, that is 20-30 feet of shoreline lost over a decade. Some of the things that we can do to help are to create more no wake zones, reducing the overall amount of boat activity, and limit the impact from high-speed boats.

**Presentation Index:** I-B 8

**Present Time:** 4:00 PM

**Student Presenter(s):**

LaBau, Hannah

**Sponsor(s):**

Lindstrom, Sheila

**Department(s)**

Sociology and Anthropology

## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

### Synthetic Biology

Synthetic biology advances conventional biotechnology to enable greater “designer” control of genetic engineering. In biotechnology practiced today, sections of genes found in one organism are inserted into another to accomplish this goal, such as making a plant resistant to a pesticide. Synthetic biologists may use computers to design gene sequences that don’t exist in nature, have those sequences chemically synthesized, and then insert them into the genome of existing organisms. The innovating science behind it is enabling technology that is changing the nature of basic biological research and as a powerful tool of applied biotechnology with the potential for developing new pharmaceuticals, biological sources of transportation fuels, and manufacturing of other bio-based products. However, society remains wary about the possible implications of synthetic biology such as, effects on the environment and human well-being. The purpose of my research was to determine high school student’s knowledge, beliefs and experiences with this controversial topic. Students were given a sheet of paper with a brief explanation of synthetic biology and then were instructed to answer ten survey questions. With synthetic biology being such a debatable topic, I wanted to see how education and media biases had affected the student’s knowledge, beliefs, and experiences on the issue. My results showed that the majority of students surveyed had not gathered much knowledge about the topic previously, but understood not only the risks but the benefits of synthetic biology as well.

**Presentation Index:** I-B 9

**Present Time:** 4:00 PM

**Student Presenter(s):**

**Sponsor(s):**

**Department(s)**

Holdman, Anna

Minger, Mark; Simpson, Patricia

Biological Sciences

### Investigation of Sorority Affiliation Using Focus Groups at a Mid-Size Public University

This project is focusing on the reasons why more women at a mid-size, public university are not seeking affiliation with Greek-letter sororities. Two focus groups will be utilized. Participants in one focus group will be affiliated women and participants in a second focus group will be unaffiliated. Participants will participate in one, two hour focus group session. Audiotape recordings and field notes will be taken by the principal investigator.

**Presentation Index:** I-B 10

**Present Time:** 4:00 PM

**Student Presenter(s):**

**Sponsor(s):**

**Department(s)**

Schluter, Makenna

Knutson-Kolodzne, Beth

Campus Involvement

### Testing of Bluetooth Communication and Android Proximity Pinging

Programmable mobile phones (“Smartphone”) can collect objective data from onboard sensors. To be effective for medical monitoring and behavior therapy objective, measures must be connected to context. An important context measure is proximity to a particular object (refrigerator, television) or person. This level of resolution is not available for existing geo-location services. Smartphones with Bluetooth can search for local wireless devices with a relatively low power ‘ping’. Most pings are effective from more than 20 m; this is too far for context in a personal space. We constructed a proximity detector by placing a Bluetooth headset inside an aluminum box 0.053×0.038×0.027 m, 0.002 m thick that attenuated the RF signal. Detection range was tested with boxes containing, round holes 0.001 m diameter on both top and bottom (Type I), and triangular 0.01×0.01×0.01 m (Type II), and 0.023×0.023×0.023 m (Type III) at a variety of orientations relative to line-of-sight to an Android Defy Smartphone. Tests were performed with Motorola MB525 and Samsung HM1000 Bluetooth headset. With Type I, >90% of pings were received within 0.6 m, 60-80% within 1.2m, and no pings beyond 1.8 m. Type II had pinging at 100% within 0.6 m, 60-70% within 1.2m, and less than 40% over 1.8m, while Type III pinged 75% at 2.4 m. The relatively thick aluminum box allowed pinging at appropriate distances with simple construction. However, in these tests only one Bluetooth headset was paired with the Smartphone at a time. Testing with a variety of Smartphones, headsets, and boxes is needed before a system can be used clinically.

**Presentation Index:** I-B 11

**Present Time:** 4:00 PM

**Student Presenter(s):**

**Sponsor(s):**

**Department(s)**

Wang, LuLu

Moon, Jon; Sieling, Jared

Electrical and Computer Engineering,  
Medical Laboratory Science

## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

### Honors Fall Retreat

The Honors Fall Retreat was implemented to help build a community within Honors and to create connections between first-year Honors students and current Honors students at St. Cloud State University. Students took a survey before and after participating in the Honors Fall Retreat to assess how helpful the activities were in creating an environment where they were able to build relationships, create community, and establish connections to the University Honors Program. Nancy Schlossberg's transitions theory was used to assess how the Honors Fall Retreat helped Honors Students in their transition to St. Cloud State University and the University Honors Program.

**Presentation Index:** I-B 12

**Present Time:** 4:00 PM

**Student Presenter(s):**

Friese, Kaelyn

**Sponsor(s):**

Klepetar, Adam

**Department(s)**

Counselor Education and  
Educational Psychology

### The Effect of Lead Tackle on the Minnesota Loon Population

I had two questions when starting my research. First, does lead tackle have a negative effect on the environment and Minnesota's Loon population? Second, how do Minnesota anglers feel about lead tackle? To answer my environment question I used research performed by two independent sources, one in Minnesota and the other in New York. They both had similar findings on how lead affected both Loons and the overall water environment. For my Minnesota anglers question I conducted a survey. I surveyed an upper level Biology class on their fishing habits. I asked questions about how often they went fishing in the past year, how often they lost tackle, and other environmental based questions on how they felt lead effected the environment and if they were willing to stop using lead tackle altogether.

**Presentation Index:** I-B 13

**Present Time:** 4:00 PM

**Student Presenter(s):**

Lehnen, Jesse

**Sponsor(s):**

Minger, Mark

**Department(s)**

Biological Sciences

### The Impact of Personal Watercraft on Aquatic Ecosystems

Increased use of personal water crafts and boats on lakes is harming the aquatic ecosystems in numerous ways. It affects the water clarity, water quality, causes shoreline erosion and of course effects the living creatures in and around the lakes. Noise or harassment also may cause some wildlife to vacate nests or leave their eggs or young vulnerable to predators.

**Presentation Index:** I-B 14

**Present Time:** 4:00 PM

**Student Presenter(s):**

Waste, Jamie

**Sponsor(s):**

Lindstrom, Sheila

**Department(s)**

Sociology and Anthropology

## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

### Effect of Goose Population

The goose population is rising dramatically and beginning to have an effect on people and the environment. The problems that are at risk because of the excessive goose population deal with negative effects on the environment as well as other animal populations. Geese eat vegetation in such a great amount that there is a risk of losing indigenous vegetation. Geese leave so much excretion that another risk of losing vegetation is at stake because of the negative effects it has on vegetation. Research was done to determine the knowledge, behaviors, and beliefs on Biology 103 students in dealing with goose population. The variables being examined are the student knowledge of the goose population, students' behaviors in dealing with the goose population and students' beliefs in dealing with the goose population. One hundred surveys were distributed in order to find the results of the research questions formulated. The group of individuals which were interviewed consisted of students in Jon Cornell's Biology 103 class on October 28th at 11am. Surveys were distributed at the beginning of class and collected immediately upon completion. There are a 104 students total in the class but only fifty five copies were collected out of the one hundred which were distributed back and limited final results. Results indicated that their knowledge of geese is low which shows that this issue is not talked about or pushed very much. Based off the little knowledge that students showed, it seems as though students only know about geese based off of what they observe in their communities. Overall students' experiences seemed to lead to the fact that they have had problems with geese, but that it was not necessarily close to home. Students probably do not typically live near desirable goose habitats and so they do not experience problems there.

**Presentation Index:** I-B 15      **Present Time:** 4:00 PM

**Student Presenter(s):**

Wolf, Kendall

**Sponsor(s):**

Minger, Mark

**Department(s)**

Biological Sciences

### Spatial and Statistical Analysis of Violent Crime in Minnesota, 2000-2011

Crime mapping is becoming a very influential tool in many justice departments across the United States. These maps are beneficial and help give spatial imagery to the crime occurring across a given region. Violent crime is something that everyone worries or thinks about from time to time and this study looks at crimes that the Federal Bureau of Investigation (FBI) records such as murder, robbery, aggravated assault, property crime, burglary, larceny, motor vehicle theft, and arson. This data is then statistically examined using formulas such as the Pearson R, Getis-Ord G, Spearman rank, and other similar statistics. The data is also analyzed spatially in order to determine areas with high crime rates along with those that have lower crime rates and to show which types of crimes are more rampant in each county. The data is acquired from the FBI's Uniform Crime Reports (UCR) and methods are being derived from various different journals on the subject of crime mapping.

**Presentation Index:** I-B 16      **Present Time:** 4:00 PM

**Student Presenter(s):**

Aaberg, Zachary

**Sponsor(s):**

Torguson, Jeffrey

**Department(s)**

Geography, Planning and  
Community Development

## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

### **Riluzole Reverses Semicarbazide-induced Seizure-like Activity in Planaria: Behavioral and Immunological Assays**

Planarians are invertebrates that belong to the phylum, *Platyhelminthes*. Planarians, though invertebrates, are found to be the closer to human beings than other invertebrate model organisms, such as fruit fly and roundworm due to the presence of a mammalian-like bilaterally symmetric nervous system and all major neurotransmitter systems. Presence of major excitatory as well as inhibitory neurotransmission systems such as glutamate and  $\gamma$ -aminobutyric acid in the nervous system of planaria is demonstrated through many immunological, pharmacological, and molecular biological studies. Our project was to quantify the increase in planarian seizure-like activity (pSLA) induced by Semicarbazide Hydrochloric Acid (SCZ) and reversal of SCZ-induced pSLA by Riluzole. We tested the planarians in the presence of Artificial Pond Water (APW, control), SCZ, and a mixture of both SCZ and Riluzole at different concentrations of each of the drugs. The sample size used for both control as well as test experiments was at least 10 planaria for each group. The pSLA was quantified by measuring the number of distinct pSLA behaviors exhibited by each planarian individually in the respective control or test solutions minute-by-minute for five minutes in duration. As we hypothesized, we found out that the SCZ increased the seizure-like activity in planarians in a dose-dependent manner, while a mixture of three mM SCZ with different concentrations of Riluzole decreased the average number of pSLA. The most important implication we found is that SCZ inhibits glutamic acid decarboxylase (GAD) and stops the production of GABA, which decreases pre-synaptic availability of glutamate and to some extent nullifies the biochemical effects of SCZ and decreases SCZ-induced pSLA.

**Presentation Index:** I-B 17      **Present Time:** 4:00 PM

<b>Student Presenter(s):</b>	<b>Sponsor(s):</b>	<b>Department(s)</b>
Shrestha, Bibita; Karki, Pratima; Elshikh, Amira	Cetkovic-Cvrlje, Marina; Ramakrishnan, Latha	Biological Sciences, Chemistry

### **Comparative Between Paper Towel and Cotton Towel**

This environmental research gives us a different perspective on paper towels and cotton towels, explaining which ones are more efficient and result in less harm to the environment.

**Presentation Index:** I-B 18      **Present Time:** 4:00 PM

<b>Student Presenter(s):</b>	<b>Sponsor(s):</b>	<b>Department(s)</b>
Tran, Thang	Lindstrom, Sheila	Sociology and Anthropology

### **Spatial Movement of Cottingham Family in the United States from 1635 compared to John Hudsons Migration Findings**

This project is on the relationship between the migration pattern of the Cottingham family and John C. Hudson's research of English migration in the United States from 1635 to present day. The problem is to determine if the Cottingham's migration from E. Yorkshire, England in 1635 is representative of the migration route with those identified by John C. Hudson and other authors. This is of significance because I am learning about the history of my own family. This will be mapped out to show the route that the Cottingham family took and that of John C. Hudson's research.

**Presentation Index:** I-B 19      **Present Time:** 4:00 PM

<b>Student Presenter(s):</b>	<b>Sponsor(s):</b>	<b>Department(s)</b>
Cottingham, Kerri	Torguson, Jeffrey	Geography, Planning and Community Development

## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

### Amazon Deforestation

The subject of deforestation of the Amazon is something that is of great interest to everyone on Earth. The Amazon forest is responsible for housing a great deal of the world's organisms and its destruction is leading to excess carbon being released into the atmosphere due to slash and burn tactics. It is also a STS issue with a great deal of evidence compiled. Many different articles were researched, cited and are available in the bibliography. The purpose of this research was to find out the facts on Amazon deforestation, how it affects the Earth, and how much students understand or believe they understand about the Amazon deforestation. To do this, Earth science middle school students (137) were surveyed in November of 2010 and were asked 11 questions about deforestation based on three research questions. The research questions asked: what do the students know about deforestation, what were the students beliefs about the use of rainforest land and what are the students' behaviors regarding buying products from the Amazon rainforest? The results of the survey indicate that a majority of the students are not knowledgeable about the deforestation of the Amazon, but a strong majority is knowledgeable about the effects deforestation has on world pollution. The majority of students also have strong beliefs that the Amazon rainforests should be preserved for environmental reasons. These results lead me to believe that our students are not educated on what is going on in the Amazon and new steps will need to be taken to inform them.

**Presentation Index:** I-B 20      **Present Time:** 4:00 PM

**Student Presenter(s):**

Wilhelm, Daniel

**Sponsor(s):**

Minger, Mark

**Department(s)**

Biological Sciences

### Sociophonetic Research Project: Vowel Format Analysis

Without the technicalities of a proper acoustic analysis, the speech of a Canadian native English speaker from Eastern Ontario, and that of a native English speaker from Minnesota appear very similar. However, Eastern Ontario and Minnesota are separate geographical locations, where the English spoken has been influenced by varying factors overtime, therefore, the speaker's native to each location should have slightly different dialects. I grew up in Eastern Ontario, but have studied in Minnesota for the past five years. It is natural that when people move to a new geographical location, they will acquire characteristics of the dialect spoken there. While there is plenty of research done regarding the variety of vowel sounds amongst American dialects, there is little information on the variation between Minnesotan and Canadian English. This project is a three-way comparison between my vowel sounds and the vowel sounds of a Canadian native English speaker who has studied in Canada. Additionally, my vowel sounds, and the other Canadians will be compared to data of American vowel sounds. The participants in this study include me, and a Canadian native English speaker. Vowel sounds were obtained as each participant said eleven words three times, (heed, hid, head, had, hayed, hawed, hoed, hod, hood, who'd and hud). Each of the eleven words contained a different English phonemic vowel sound. The recordings were analyzed using PRATT. Data was obtained for the F1, F2, pitch, intensity, and duration of each word. The results showed a significant variation between my vowel sounds, the Canadians vowel sounds, and the American data. For example, in both my speech and the Canadians the vowel /ʌ/ is higher than the American data. The raising of /ʌ/ can be explained by the 'Canadian Raising', a vowel shift that occurred in Canada during the past century.

**Presentation Index:** I-B 21      **Present Time:** 4:00 PM

**Student Presenter(s):**

Walden, Melissa

**Sponsor(s):**

Koffi, Ettien

**Department(s)**

English



## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

### **Bactericidal Effects of Essential Oils on *Staphylococcus epidermidis* and *Escherichia coli***

For decades, essential oils have been used as all natural antimicrobial, antiviral, and antifungal agents because they offer a safe alternative to chemical cleaning treatments. This experiment was conducted to test the bactericidal activity of essential oils on *Staphylococcus epidermidis* and *Escherichia coli*, two common bacteria that can both cause infection. The hypothesis of this experiment was that the essential oil cleaner would have significant bactericidal activity on the strains tested. The oil used was Thieves Household Cleaner, a blend of the oils clove, lemon, cinnamon bark, eucalyptus radiata and rosemary. This blend was chosen to be tested first not only because it is a cleaner, but because it contains oils that have been shown to cause significant antimicrobial activity. The experimental design consisted of a series dilution followed by a viable count, using tryptic soy broth as the agar and dilution broth. The cleaner was compared to a sterile water control. The results yielded reproducible data that was not in favor of the hypothesis when tested on *Staphylococcus epidermidis*. The bactericidal activity was within one log of the control, and is therefore not significant enough to support the hypothesis. Tests on *Escherichia coli* are currently being conducted. The experiment will be repeated using *Pseudomonas aeruginosa* and furthermore, the Thieves Household Cleaner oil constituents will be tested individually.

**Presentation Index:** I-B 22      **Present Time:** 4:00 PM

**Student Presenter(s):**

Danford, Mallory

**Sponsor(s):**

Gulrud, Kristin

**Department(s)**

Biological Sciences

### **Bee Colony Collapse Disorder**

Honey Bees have been declining in population in North America and other parts of the world; commonly known as Colony Collapse Disorder. This is a concern because they are major pollinators of the plants that supply much of our food. There are several theories as to why this is happening. My research will highlight ways in which people are confronting this issue.

**Presentation Index:** I-B 23      **Present Time:** 4:00 PM

**Student Presenter(s):**

Pazandak, Nicholas

**Sponsor(s):**

Lindstrom, Sheila

**Department(s)**

Sociology and Anthropology

### **Cloth vs. Disposable**

This research examines why people should use cloth instead of disposable diapers. It is important for our society to become more knowledgeable about this topic as it relates to the well being of our children as well as mother earth. Disposable diapers take up a countless amount of space in landfills as well as taking 500 years to fully biodegrade.

**Presentation Index:** I-B 24      **Present Time:** 4:00 PM

**Student Presenter(s):**

Anderson, Laura

**Sponsor(s):**

Lindstrom, Sheila

**Department(s)**

Sociology and Anthropology

### **An Investigation of Use of Real-World Examples by High School Chemistry Teachers**

Literature has shown that when teachers use a context-based approach to chemistry teaching, students scored better on tests and had better understanding of the content. This study investigates chemistry teachers' use and views on effectiveness of real-world examples in their teaching. The subjects completed an instrument regarding their utilization, beliefs about the effectiveness, and complications of incorporating real-world examples as part of their teaching of chemistry concepts. Both open-ended and likert-scale questions were used. The results from this investigation will identify teacher perceived barriers to incorporating real-world examples into their classroom. Recommendations for teaching and supporting the use of real world examples in high school chemistry teaching will be presented.

**Presentation Index:** I-B 25      **Present Time:** 4:00 PM

**Student Presenter(s):**

Tabbert, Jacob

**Sponsor(s):**

Krystyniak, Rebecca

**Department(s)**

Chemistry

## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

### Restoration of Eastern White Pine (*Pinus strobus*) at Mille Lacs Kathio State Park

Eastern white pines (*Pinus strobus*) often tower above the rest of the forest canopy throughout their geographic range. Individuals from all backgrounds appreciate the size and history of these majestic trees, making them a high priority for restoration. Due to widespread logging practices in the later 1800s, natural regeneration has been minimal; this is due to the lack of mature seed trees. There has been an ongoing restoration effort at Mille Lacs Kathio State Park since the 1980s. Although there has been over 40,000 white pine seedlings planted since 2000, the success of them becoming established has been minimal. One of the main reasons it has been so minimal is due to the population of white-tailed deer (*Odocoileus virginianus*). The foliage provides deer with nutrition and the seedlings are browsed heaviest in late winter and early spring when other food sources have become depleted. In early May 2011, 800 white pine seedlings were planted at Mille Lacs Kathio State Park. Of these 800, 400 were two-years old and the other 400 were one-year old. There are eight separate plots with 100 trees in each, half one-year old and half two-years old. These plots are planted in sets of two with one plot's edge 30 meters and the other plot 500 meters from the road that runs through the park. There are four different locations throughout the park and each plot is planted under a closed deciduous canopy. Half of the seedlings were randomly selected to be bud-capped in October 2011; bud-capping deters deer browsing by establishing a barrier between the seedling and deer. Data is being collected through 2013 and will be analyzed to determine the most effective way to restore the conifer forest of Mille Lacs Kathio State Park.

**Presentation Index:** I-B 26      **Present Time:** 4:00 PM

**Student Presenter(s):**

Arola, Kyle

**Sponsor(s):**

Cook, William

**Department(s)**

Biological Sciences

### Economic Indicators of the Former Yugoslav Republics

In this project I will attempt to answer the question of why there are great discrepancies in economic indicators of former Yugoslav republics. The primary republics that I will analyze are: Slovenia, Croatia, Bosnia, and Serbia. The indicators that will help me discover these answers are: GDP, GNI, Urban Development, unemployment rates, and HDI. What differences have arisen in these indicators and what policies have lead to them? I will present my results using maps, charts, and graphs. The answer I seek will provide me with the understanding for the current economic conditions of the region, and how it will possibly change in the near future.

**Presentation Index:** I-B 27      **Present Time:** 4:00 PM

**Student Presenter(s):**

Dedic, Meho

**Sponsor(s):**

Blinnikov, Mikhail

**Department(s)**

Geography, Planning and  
Community Development

## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

### Lateral Field Time of Flight Determination of Charge Carrier Mobility

The application of organic based electronics, such as thin film solar cells, field effect transistors, and light emitting diodes has motivated investigation of electrical properties of new organic materials. The primary goal of such investigation is to determine and maximize charge carrier mobility. Mobility is defined as the ease with which charge carriers travel through a given material in response to an applied electric field. Mobility is dependent on the solid state packing structure of the organic molecule and may vary significantly at the surface of materials; this is an important device consideration in organic photovoltaics because charge transport and recombination processes occur at the surface. A lateral time of flight apparatus was designed and constructed that will allow the measurement of lateral surface carrier mobility in organic crystals. Pulsed UV laser incidents in a line on the sample surface to create electron hole pairs between two electrodes. A CCD Camera images the surface in order to align the laser spot between the electrodes. This method creates charge carriers on site rather than by injection through contacts, allowing the measurement of the intrinsic electronic properties without the experimental artifacts of field effect measurements. By recording the current across the surface, we are able to calculate the time-of-flight, from which mobility is calculated. This method allows the charge density to be controlled by regulating the photon flux. Both the electron and hole mobilities can be independently measured by changing the polarity of the applied electric field. This mobility data provides a method that can experimentally evaluate current theoretical models of charge carrier transport behavior in molecular organic semiconductor materials. One can then use these theoretical results to engineer optimal materials and structures to produce high performance devices.

**Presentation Index:** I-B 28      **Present Time:** 4:00 PM

**Student Presenter(s):**

Schulzetenberg, Aaron; Harter, Joseph;  
Davies, Andrew

**Sponsor(s):**

Lidberg, Russell

**Department(s)**

Physics and Astronomy

### The Hinterlands of Lake Liquors

Central place theory has long tried to determine the distance to which an individual or group of individuals will go to reach a particular area that contains a food group or habitat, in the case of animals or birds, or a service or point of interest, in the case for consumers. Typically, in the case for consumers, this distance is generally equidistant around the point of interest. However, how is this distance affected by the existence of a major or semi-major arterial corridor in a rural setting? Lake Liquors is an off sale retail municipal liquor store located in Big Lake, MN within Sherburne County. With permission gained from management the postal zip codes of the customers home address was collected at the point of sale (POS). This data then was collected monthly and tabulated within a geodatabase that was used within ArcGIS version 10. Maps were created using shape files to depict both the zip code areas and the primary and secondary roads and highways within the state of Minnesota. The subsequent choropleth maps that were created displayed a dispersion of sales to customers along the Highway 10 corridor that runs between the northwest corner of the Twin Cities metropolitan area and the St. Cloud metropolitan area. Conversely, and quite unexpectedly, there was also a secondary dispersion along the Highway 25 corridor that runs from Buffalo, MN to Big Lake, MN. Therefore, a rural area with a major or semi-major arterial corridor does impact the distance to which individuals will go to get to a service that meets their needs.

**Presentation Index:** I-B 29      **Present Time:** 4:00 PM

**Student Presenter(s):**

Flick, Sean

**Sponsor(s):**

Torguson, Jeffrey

**Department(s)**

Geography, Planning and  
Community Development

## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

### Effect of Galantamine on Amylin (1-37) Aggregation: Investigations using Atomic Force Microscopy and Spectrofluorimetry

$\beta$ -cells are an important cell type present in the pancreas which secrete the well-known hormone insulin along with the lesser known islet amyloid polypeptide (IAPP), or simply amylin. Amylin, a 37-amino acid peptide appears to compliment insulin as a means of glycemic control, yet it diverges from insulin in its tendency to form insoluble  $\beta$ -sheets that result in characteristic amyloid plaques. These plaques are found in the islets of  $\beta$ -cells in 90% of type II diabetic patients and are, therefore, of great interest in preventing and/or reducing disease. Many small molecular drugs and short peptide inhibitors have been tested against amylin and other amyloid plaques, including the FDA approved drug galantamine (Gal), which has been shown to reduce amyloid- $\beta$  (A $\beta$ ) plaques in Alzheimer's disease. The structural and behavioral similarities between amylin and A $\beta$  suggest that Gal would be effective in reducing amylin plaques, forming the basis of this study. To test this hypothesis, a spectrofluorimeter will be used to detect thioflavin T (ThT) fluorescence intensity changes in amylin solutions with the addition of various concentrations of galantamine after a period of incubation, with the expectation that fluorescence will decrease with aggregation. The incubation will take place at two temperatures, 25 and 37°C for 4 days and 1 hour, respectively, where qualitative measurements will be taken under each condition with an atomic force microscope (AFM). The morphological and metric analysis under AFM will aid in understanding the process of amylin aggregation and the fluorescence studies will provide a Gal concentration of optimal effectiveness, together forming a comprehensive approach to testing Gal in reducing amylin aggregation.

**Presentation Index:** I-B 30

**Present Time:** 4:00 PM

**Student Presenter(s):**

Rose, Bradley

**Sponsor(s):**

Ramakrishnan, Latha

**Department(s)**

Chemistry

### Transfer of Therapy Skills: Key Principles Everyone Should Know

Speech-Language Pathologists work with clients with communication disorders (e.g., stuttering, stroke, Parkinson's disease). Therapy usually involves training clients to learn new ways to communicate successfully in everyday speaking contexts, leading to improved quality of life. It is critical that skills trained in the clinic transfer or extend to real-life situations in the client's life. Unfortunately, there is limited research regarding key principles that underlie transfer of new speaking skills. Little is known about which practice schedules (how and when to practice), or different types of feedback and reinforcement lead to significant change and transfer. The current study was conducted with 29 graduate and undergraduate students currently enrolled in CSD 432/532 (Fluency Disorders). The research was conducted in SCSU's Applied Principles of Learning (ApPLe) Laboratory with state of the art speech analysis and covert surveillance equipment. Participants were trained to pause in short phrases (e.g., "Hello (pause) how are you?"), and to turn their voice on gradually for the first vowel in a phrase (e.g. aaa small coffee please). Participants were then randomly assigned to four training conditions: Constant Practice = Sentence 1 (5x) Sentence 2 (5x) Sentence 3 (5x); Variable Practice = Sentence 1, Sentence 2, Sentence 3 (15x); Frequent Feedback = participants check accuracy of productions on the computer each time; and Infrequent Feedback = participants check accuracy every 10 productions on the computer. Participants practiced five sentences using the pause technique each 10 times and five sentences using the gradual voicing technique each 10 times (total 100 sentences). After one week participants wore "SPY PENS" to record their performance saying the practice sentences in various places on campus. This research presentation will present outcomes from this study, revealing which type of practice and feedback results in the greatest improvement and transfer.

**Presentation Index:** I-B 31

**Present Time:** 4:00 PM

**Student Presenter(s):**

Onken, Jessica; Daleiden, Jillian; Regnier, Stacy

**Sponsor(s):**

Smits-Bandstra, Sarah

**Department(s)**

Communication Sciences and Disorders

## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

### Fractional Dynamics

The purpose of the research is to develop fractance materials and devices available for commercial and industrial use. We will be obtaining data that will allow development of dynamical models of how fractional order systems respond to transients in the environment that change the fractional order. This presentation outlines a proposal for a series of research projects that could ultimately lead to making a new class of electronic circuit elements available for commercial and industrial use. The motivation behind the development of fractance materials and devices with tunable fractional order comes from advances in control systems as well as signal processing. Of scientific interest, fractional order systems represent a significant class of dynamical systems. Studying these systems will provide vital insight into the basic science of dynamical systems while leading directly to engineering applications of such systems. By using the theory of Hysteresis (delayed response), we have to build test instrumentation to determine the specific characteristics of the devices and materials.

**Presentation Index:** I-B 32      **Present Time:** 4:00 PM

<b>Student Presenter(s):</b>	<b>Sponsor(s):</b>	<b>Department(s)</b>
Raza, Faisal; Mitiku, Aida; Smith, Russell	Bohannon, Gary	Physics and Astronomy

### Leadership: A College Experience

Leadership as a college experience is truly the journey I have had throughout my college years. However, with the University restructuring, and reductions in funding, there was a lack of leadership programming available. This lack of leadership programs was especially evident for first year students. The practical gap that the Leadership Series filled was that we need to continue leadership programming specifically with the more diverse community of students we are seeing attend college. Over the summer, I reviewed leadership books and articles trying to figure out how to fit leadership in a college course and develop a leadership series. After reviewing many options, I developed a leadership series from a variety of material most specifically, Exploring Leadership: For college students who want to make a difference. While this leadership series was a bandaid for the overall lack of leadership programming, I realize the success would lie in having a fully funded continual program.

**Presentation Index:** I-B 34      **Present Time:** 4:00 PM

<b>Student Presenter(s):</b>	<b>Sponsor(s):</b>	<b>Department(s)</b>
Schultz, Nathaniel	Imbra, Christine	Educational Leadership and Higher Education

### Practicum at Century College

The main goal of my practicum is working at Century College in the Student Club Center to create a Leadership Institute 2. The Leadership Institute 2 is the follow-up to the Leadership Institute 1 and focuses on the teambuilding and application of the skills learned previously. This institute is a free overnight retreat for participants to develop skills in conflict management, personal motivation and group development. Century College has never done the Student Leadership Institute 2 before. I will be helping to develop it from inception to execution. This will also be teaching me more about the logistics of following campus procedures and the policies of event planning.

**Presentation Index:** I-B 35      **Present Time:** 4:00 PM

<b>Student Presenter(s):</b>	<b>Sponsor(s):</b>	<b>Department(s)</b>
Waisanen, Lauri	Imbra, Christine	Educational Leadership and Higher Education

## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

### **Racism at a University: Survey Responses that are Neutral and Do Not Know**

This research compares campus climate surveys taken by students of color and white students regarding their attitudes and beliefs about racism as measured in the surveys taken in 2005 and 2011. The 2005 analysis compared the responses of students of color to white students to questions rated on a five point scale from "Strongly Agree" to "Strongly Disagree" with a sixth option of "Do Not Know." In 2011, the survey designers combined the "Neutral" and "Do Not Know" response options making longitudinal comparisons difficult. Some survey items had a third of respondents selecting "Neutral/Do Not Know." This study presents a subset of 2011 survey item results using 2005 results as a model. This research offers possible remedies for extrapolating longitudinal results from surveys with similar, but not identical, response options.

**Presentation Index:** I-B 36

**Present Time:** 4:00 PM

**Student Presenter(s):**

Johnson, Monir

**Sponsor(s):**

Imbra, Christine

**Department(s)**

Educational Leadership and Higher Education

### **SCSU to NMMU an Internship in South Africa**

The experience of being a graduate intern in the Student Counselling Career and Development Centre at Nelson Mandela Metropolitan University (NMMU) in Port Elizabeth South Africa. During my time in South Africa I utilized my knowledge of student development theory and knowledge of students learned at St. Cloud State University to further my development as a Student Affairs professional. I had the opportunity to work with a diverse group of students and co-workers furthering my multicultural competence. The history of South Africa and of NMMU allowed me to have a unique experience that could not be had any other place in the world.

**Presentation Index:** I-B 37

**Present Time:** 4:00 PM

**Student Presenter(s):**

Beeman, Ashley

**Sponsor(s):**

Klepetar, Adam

**Department(s)**

Counselor Education and Educational Psychology

### **Job Search Resources for Students with Disabilities**

The focus of this project was to obtain additional job search resources for students with disabilities for a university Career Services website. The impetus for the project was anecdotal evidence at the university level that indicates students with disabilities have a difficult time finding employment; national statistics also reflect persons with a disability have a harder time finding employment than those who do not have a disability. Through internet research, an interview with a disability services professional, and student interviews, new resources were added to the Career Services website.

**Presentation Index:** I-B 38

**Present Time:** 4:00 PM

**Student Presenter(s):**

Hansen, Carrie

**Sponsor(s):**

Imbra, Christine

**Department(s)**

Educational Leadership and Higher Education

## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

### Design and Synthesis of Natural Product-based NF-kB Inhibitor

Cancer is the second leading cause of death in the world. It is, therefore, extremely important to find a cure. Natural products are one potential source for new chemotherapeutic drugs. This research focuses on the natural product Rugulactone. Rugulactone is known to inhibit a protein complex in cells called NF-kB. The NF-kB protein plays a key role in cell division. NF-kB is retained in the cell cytoplasm when inactive, but when activated it is released into the nucleus and starts the process of cell division. It is found that NF-kB is continuously active in cancerous cells, but in healthy cells, it is found to be mostly inactive. Therefore, inhibition of the NF-kB complex results in selective cytotoxicity toward cancer cells. Rugulactone inhibits the pathway that leads to the activation of NF-kB. To fully understand rugulactone's mechanism of action, the functional group that is responsible for rugulactone's NF-kB inhibitory properties needs to be identified. It is hypothesized that rugulactone's cytotoxicity is due to the alpha,beta-unsaturated carbonyl functional groups that are found in the molecule. Rugulactone contains two of these groups. To determine if one or both of these groups is responsible for rugulactone's bioactivity, an analogue has been prepared in which one of the alpha,beta-unsaturated carbonyls has been removed. This novel rugulactone analogue was prepared in four synthetic steps. It is anticipated that the bioactivity of this analogue will help determine the specific functional group responsible for rugulactone's cytotoxicity.

**Presentation Index:** I-B 39

**Present Time:** 4:00 PM

**Student Presenter(s):**

Aldridge, Jared

**Sponsor(s):**

Mechelke, Mark

**Department(s)**

Chemistry

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**Session J-G**

**Communicating with Asia IV**

**Granite**

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### The Cultural Significance of Lucky Cats in Japan

It is not strange to see a wide variety of lucky cats (also known as beckoning cat, welcoming cat, money cat, or fortune cat) at the entrance of many Asian stores, with either a stationary or a slow-moving paw beckoning. Since ancient times, cats have been regarded as the mascot of good luck and wealth by the Japanese. Western people who travel to Japan may not understand the meaning or the culture significance of the lucky cats. It is common for people to misunderstand the cats as a god or toy. By providing my research information on lucky cats, it would be helpful to understand cats as a significant culture aspect in Japan.

**Presentation Index:** J-G 1

**Present Time:** 5:00 PM

**Student Presenter(s):**

Chen, Binghua

**Sponsor(s):**

Pryately, Margaret

**Department(s)**

Communication Studies

### The Mystery of the Color Red in China

The motivation to write about the color red was with respect that this color is observed during the holidays in China. This curiosity leads to questions and the interest in researching in depth for the reason of the color red and why it is so important to the Chinese. The investigation of the topic reveals that the Chinese believe that the color red originated from folklore. However, going into depth, the real reason for the color red traces back to Egypt. This was adapted from the Jewish holiday called the Passover, where the color red was originally the blood of a sacrificed lamb.

**Presentation Index:** J-G 2

**Present Time:** 5:10 PM

**Student Presenter(s):**

Jawad, Mohammed

**Sponsor(s):**

Pryately, Margaret

**Department(s)**

Communication Studies

## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

### Fishing in South Korea

Due to a large interest in fishing in the state of Minnesota, research was done on fishing in South Korea and the different impacts it has on the social structure, collectivist culture and the job market. Research was done with five different articles and papers. After completing the reading from the above articles and papers, we learned that different Korean folklores use the theme of fishing in the stories. Also, South Korea is one of the most densely populated countries in the world and the fishery production is crucial for food security. Job security is aided by the 330 fish markets present in South Korea. After reading this paper, a person will understand the importance of fishing in South Korea in a much deeper sense than just as food for the South Korean people.

**Presentation Index:** J-G 3

**Present Time:** 5:20 PM

**Student Presenter(s):**

Jorgenson, Andrea

**Sponsor(s):**

Pryately, Margaret

**Department(s)**

Communication Studies

### The Historical and Cultural Significance of Desserts in India

This presentation will discuss the concept of desserts in the country of India. I chose desserts in India, because I didn't know anything about them. We were told to pick something we were interested in and go from there and desserts are of interest to almost everyone including myself. Due to the fact that desserts are a fairly new concept to Indian cuisine, they are not consumed daily or even weekly. Desserts are set aside for more formal occasions and events such as festivals, weddings, and traditional dinner parties. India being such a large country has different influences in different regions of the country. These influences play a role in dessert ingredients, cooking style and eating habits. The north, south, east, and west regions all have different specialty desserts that are common to their area. Each dessert chosen for each region plays a role in the heritage of Indian cuisine, either historically or culturally. This presentation then goes on to discuss desserts pertaining to the region and their significance to the history or the culture of India.

**Presentation Index:** J-G 4

**Present Time:** 5:30 PM

**Student Presenter(s):**

Nadeau, Rachel

**Sponsor(s):**

Pryately, Margaret

**Department(s)**

Communication Studies

### How to Tell a Joke in China: an Analysis of the Chinese Style of Humor

The subtleties of intercultural communication are probably nowhere more apparent than in communication which involves humor. In different cultures, the idea of "funny" is rarely translatable and is highly personal, contextually and culturally specific. There is a common misconception of there being very little humor in the Chinese culture. However, this article argues the opposite. The Chinese style of comedy is influenced by many elements, including philosophy, culture, and politics, and manifests itself in a popular style of Chinese comedy called xiangsheng, or "crosstalk." Knowing the rules of this speech act is a powerful tool for gaining insight into the culture. Analyzing seven sources, xiangsheng is explained through these different elements. The primary discovery was a humor that was more cooperative as well as subtle.

**Presentation Index:** J-G 5

**Present Time:** 5:40 PM

**Student Presenter(s):**

Giacomino, Lindsay

**Sponsor(s):**

Pryately, Margaret

**Department(s)**

Communication Studies



## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

### The Cultural Relevance of Capsule Hotels in Japan

A great passion of mine is to travel, and one country on my list of top places to travel is Japan. When I travel, I like to experience things the culture in that area takes part in. In Japan, one of the things I would like to experience is the capsule hotels. Japan is the only place in the world that there are capsule hotels and I find them very interesting. The reason capsule hotels are only in Japan is because they have a cultural tie to the culture and religion in Japan. I believe that capsule hotels could be successful in other busy places in the world, but without people having the opportunity to experience them; this great invention will not take off. To research capsule hotels I analyzed six different online sources to learn more about the topic. I learned that capsule hotels are a very practical and inexpensive way to stay overnight and travel. To use capsule hotels is very efficient and economically responsible. If more places in the world had capsule hotels, traveling would be more cost effective and accessible.

**Presentation Index:** J-G 6

**Present Time:** 5:50 PM

**Student Presenter(s):**

Nelson, Shane

**Sponsor(s):**

Pryately, Margaret

**Department(s)**

Communication Studies

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**Session** J-GS

**Anthropology and Sociology**

**Glacier South**

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### Friendship in Ruins: Ethnographic Research Among Student Archaeologists

How does social networking influence the lifecycle of friendships? How do relationships form and progress in the setting of a foreign field school? The research for this presentation was conducted in Rome, Italy during the summer of 2011. I was accepted to participate in an archaeology excavation of the old sea port of Ostia Antica through the AIRC. To complete the cultural anthropology field school through SCSU, I decided to study the group interaction and social networking of the AIRC group, as many of the participants had never met before. I followed 42 students during an archaeology field school in Rome to see how social networking was used in making, maintaining, and ending friendships. I tie face to face group interaction with the online social networking site of Facebook. I discuss the history of the areas of excavation as well as the rise and fall of relationships among the groups. I found that the nature of friendships and relationships are sped up in a six week field school and that sabotaging the relationship is sometimes easier than saying goodbye.

**Presentation Index:** J-GS 1

**Present Time:** 5:00 PM

**Student Presenter(s):**

Holmstrom, Jane

**Sponsor(s):**

Branam, Kelly

**Department(s)**

Anthropology and Sociology

### Material Culture of Road-rides: How Group Rides Construct Shared Identity and Community Among Bicyclists

In this presentation, I explore how bicyclists in Minnesota incorporate the material culture of road-riding to create a shared identity and sense of community by engaging in group bicycle rides. While the social nature of group-riding is a platform for the expression of community, it is the material culture of this social phenomenon that creates a common identity by which a sense of community is derived. Arguing there is just as much meaning in the production of technologies as there is in the appropriation of them, Marcia-Anne Dobres contends; "what necessarily weaves together the material and meaningful nature of human technologies into a holistic experience are the social relations and contexts in which both materials and people are produced, reproduced, and transformed." Taking an ethnographic approach, I reveal how bicycles, as technological entities, are reproduced and transformed into tools of human social identity through group bike rides. Group rides bring people from diverse backgrounds together and through material culture they construct a shared identity and community through tool-use, dress, food-sharing, and play, or rather the passion for bicycling. While community is built from group riding, especially within bicycling clubs, it transcends the activity of cycling, drawing members together for a variety of reasons.

**Presentation Index:** J-GS 2

**Present Time:** 5:20 PM

**Student Presenter(s):**

Robeck, Ashley

**Sponsor(s):**

Branam, Kelly

**Department(s)**

Anthropology and Sociology

## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

### Exhaustive Food Movements: Theory Versus Practice

Something is askew, when in the same day (or month) I volunteer at the Salvation Army Food Shelf handing out poor quality processed foods and return home to my Three-Sister's Garden to grow organic food that is saving our environment. The purpose of this research is to explain the frustrations that I experienced while growing a Three-Sisters Garden, over the summer of 2011 and the experience of volunteering at the Salvation Army Food Shelf during the fall of 2011. In the process of growing an eco-friendly Three-Sister's Garden I came up against some obstacles, mostly, not having enough time to maintain the garden before and after work. I began to wonder how people can grow a garden for themselves that will provide enough food to supplement store bought food, while at the same time working and taking care of a family. Is this why I hand out poor quality processed foods at the Salvation Army Food Shelf? With so many food movements in the U.S., why are we providing poor people with poor food? Why am I so concerned over what food movement I identify with? In this presentation, building on Janet Poppendieck's article, "Want Amid Plenty", I will show that a change in discourse is needed from "undernutrition to unfairness, from hunger to inequality."

**Presentation Index:** J-GS 3

**Present Time:** 5:40 PM

**Student Presenter(s):**

Peterson, Erin

**Sponsor(s):**

Branam, Kelly

**Department(s)**

Anthropology and Sociology

### Community Gardens: Spaces for Small Scale Social Movement Organization

As the St. Cloud State University garden continues to grow physically, its organizational structure is in need of redesign. The SCSU garden has gained permanence on the university campus and has been recognized as a resource to the community. In order to ensure the garden will continue after current members are no longer participating, formal organization is needed to maintain the gardens existing values. While the director and many other members are in support of such a process, initiating non-hierarchical restructuring has been the primary issue. As I studied community and social movements at the garden, I came to believe that the garden's openness, egalitarianism, and growth by natural progression can be maintained by applying a culturally sensitive approach to restructuring. In order to understand the garden's restructuring, I will also situate the garden as a small scale social movement by reference to works published by Lofland and Stoecker on categorization and implications of social movements.

**Presentation Index:** J-GS 4

**Present Time:** 6:00 PM

**Student Presenter(s):**

Quintus, Carly

**Sponsor(s):**

Branam, Kelly

**Department(s)**

Anthropology and Sociology

## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

Session J-VS

Complex Systems II

Voyageurs South

### Spam Forensics

Spam is a major part of the traffic on the internet today. Although email spam is a well-researched area and there are number of tools to classify email spam, it is still an evolving area, with significant issues in spam classifications still being talked about. Spam creates unnecessary traffic and causes bandwidth overload, but it can also be used as a source of useful forensic information in an investigation. This information may be achieved by using forensic investigation techniques on these emails (those classified as spam) to identifying similar patterns. Spam emails are often used for fraud and unlawful activity with a ferocity that can be calculated in monetary value. Some spam emails provide false information about an unknown "imaginary" company in order to lure people to buy its stocks. Other spam emails are selling pirated software, illegal drugs, or promoting online gambling. Even though these kinds of spam emails have violated laws and caused damage, it is difficult for law enforcement personnel to stop them for the following reasons: 1) the daunting volume of spam emails has made it virtually impossible for humans to collect evidence from it; 2) criminals who create and distribute spam emails are using various techniques to disguise their true identities and make it hard to track them down. By analyzing email headers and using other forensic techniques, we can find the origin of the fraud and the correlation between various related emails spam operations. Evaluating the various techniques and solutions showcased in other articles can help shed more light on the subject and find the current legal and economic ramifications for fighting spam as these anti-spam strategies have their own cost implications.

**Presentation Index:** J-VS 1

**Present Time:** 5:00 PM

**Student Presenter(s):**

Neupane, Prabhakar

**Sponsor(s):**

Schmidt, Mark

**Department(s)**

Information Systems

### Sex Allocation in Tree Swallows

Sex biases within broods have been documented in many avian species including tree swallows, *Tachycineta bicolor*. Female birds are heterogametic, while males are homogametic. Thus, a variety of maternal hormones have been implicated, but the precise mechanism of avian sex allocation is unknown. Many avian species have more sons when food is plentiful and more daughters when food is limited. Male nestlings generally have a faster growth rate than female nestlings and need more food, but have higher reproductive potential. Females have lower reproductive potential, but they need less food and tend to disperse more than males, potentially escaping poorer foraging conditions. Male-biased broods in tree swallows are reported when females are in good condition, and in broods without extra-pair offspring. Tree swallows are secondary cavity nesters and will compete aggressively for nest boxes and other cavities. Aggressive behavior is linked with testosterone. Thus, I hypothesized that testosterone was the proximate mechanism for brood sex ratio biases in tree swallows and predicted that testosterone and male-biased broods would be positively correlated. To test my hypothesis, I drew blood from adult females and their nestlings. I tested the testosterone levels of the females using a commercial testosterone kit validated for use with avian plasma. I determined the sex of offspring using molecular sexing: amplification of a selected portion of each sex chromosome, digestion with a restriction enzyme followed by electrophoresis. Two bands on electrophoresis indicated a female, one band indicated a male. In this first year of a multi-year study, my data are limited and no statistically significant trends are observed. However, observational data of nest-defense suggests continued study is warranted.

**Presentation Index:** J-VS 2

**Present Time:** 5:20 PM

**Student Presenter(s):**

Jansky, Carol

**Sponsor(s):**

Restani, Marco

**Department(s)**

Biological Sciences

## STUDENT RESEARCH COLLOQUIUM ABSTRACTS

### Peer Email Mentor Program

In offering higher education, academic success is of chief importance. In spring 2011, within the Department of Social Work at St. Cloud State University, the Peer Mentor Program was launched and co-piloted between an undergraduate student and an assistant professor. The launch of this program was initiated with the desire to increase student opportunities for success and provide another medium of resource for culturally-diverse students. Using SW345: Marginalized Populations as the trial course, the Peer Mentor Program offers to address possible challenges and barriers to successful learning and academic achievement. The services offered include helping students to better understand assignments and what is required, how to navigate and procure relevant professional resources, how to fully address tasks within an assignment, and how to integrate what they are learning in class into their assignments. Peer Mentor communication is primarily through email serving as a convenient medium to address these issues with students. The Peer Mentor also is available to meet with students face-to-face when needed, as requested. This program, according to evaluation data, suggests students utilizing the program found it to be beneficial for a number of reasons. Perhaps the most significant finding is related to student's self report of their own increased academic improvement. The larger implications of these findings suggest further development of similar programs may help to promote academic success with students, and provide them with appropriate alternatives to faculty support through a familiar and easily-accessed medium such as email. There are also benefits to student mentors as they can use this opportunity to enhance their resume, pre professional skills, and connection to peers, faculty, and the department. The mentor provides this service at a convenient time, which is typically evenings and weekends. The program provides more time for faculty to address the most pressing needs of students.

**Presentation Index:** J-VS 3

**Present Time:** 5:40 PM

**Student Presenter(s):**

Gross, Linda

**Sponsor(s):**

Zehringer, Paula

**Department(s)**

Social Work

### STUDENT PRESENTER INDEX

<u>Student Presenter</u>	<u>Project Title</u>	<u>Sponsor(s)</u>	<u>Time</u>	<u>Room</u>
Aaberg, Zachary	Spatial and Statistical Analysis of Violent Crime in Minnesota, 2000-2011	Torguson, Jeffrey	4:00 PM	Ballroom
Aarestad, Corrine	Walkability of Cokato	Lenz, Brenda; Hiemenz, Melinda; Henry, Vonna	9:00 AM	Ballroom
Abeykoon, Kasun	Analyzing Behaviour of Operating Systems to Crafted Packets Using Scapy	Ghosh, Tirthankar	10:10 AM	Voyageurs South
Abeykoon, Thusith	Analyzing Behaviour of Operating Systems to Crafted Packets Using Scapy	Ghosh, Tirthankar	10:10 AM	Voyageurs South
Acharya, Jyotindra	The First Annotation of the Arginine and Proline Biosynthetic Pathways of <i>Thiomicrospira crunogena</i> XCL-2	Kvaal, Christopher	9:00 AM	Ballroom
Acharya, Subrat	Counting and Viability of the Immune Cells: Hemocytometer Versus Flow Cytometry	Cetkovic-Cvrlje, Marina	2:00 PM	Ballroom
Aden, Fadumo	First Annotation of Glycine, Serine, Threonine Pathway in <i>Thiomycrospora crunogena</i> XCL-2	Kvaal, Christopher	2:00 PM	Ballroom
Adriaens, Joseph	XCEL Energy Coal Removal Process	Zhao, Yongli; Vogt, Adam	11:00 AM	Voyageurs South
Ahlijah, Martin	Using Quality Points as an Indicator of Student Performance	Robinson, David	9:00 AM	Ballroom
Ahrens, Cassandra	Undergraduate Learning Assistants	Hanzsek-Brill, Melissa	2:00 PM	Ballroom
Alama, Dustin	Apollo High School Survey Spring 2012	Zerbib, Sandrine	11:40 AM	Glacier South
Aldridge, Jared	Design and Synthesis of Natural Product-based NF- $\kappa$ B Inhibitor	Mechelke, Mark	4:00 PM	Ballroom
Aleckson, Reuben	Major Default: Are Student Loan Default Rates Impacted by Your Choice of Degree?	Hughes, Patricia	2:00 PM	Glacier North
Alhajri, Faiz	Assistance Device for the Deaf	Glazos, Michael	9:00 AM	Ballroom
Alkhatib, Einas	Flow Cytometric Quantification of T- and B-cells in the Fathead Minnow ( <i>Pimephales promelas</i> ) with Treatments of Opioids and Antidepressants	Cetkovic-Cvrlje, Marina	9:00 AM	Ballroom
Al-Mansour, Feras	Comparison Between Two Computer Forensic Programs	Schmidt, Mark	4:30 PM	Voyageurs South
Almasalmh, Bandar	Detecting the Geometry of the River and Its Ice Thickness	Petzold, Mark	4:00 PM	Ballroom
Almasalmh, Firass	Detecting the Geometry of the River and Its Ice Thickness	Petzold, Mark	4:00 PM	Ballroom
Al-ward, Ahmed	Car Collision Warning System	Hossain, Md	2:00 PM	Ballroom
Ames, Alexander	Mansions of Memories: Preservation, Destruction, and the Construction of Place in Central Minnesota	Wingerd, Mary	11:55 AM	Glacier North

## STUDENT PRESENTER INDEX

<u>Student Presenter</u>	<u>Project Title</u>	<u>Sponsor(s)</u>	<u>Time</u>	<u>Room</u>
Amundson, Grant	An Assessment of the Best Supplier Relationship Management Systems Software in the Service Industry	Polacco, Alexander	2:00 PM	Voyageurs North
Anderson, Cassie	The Effects of Temporary Employment on Somali Workers in Central Minnesota	Panicker, Ajaykumar	11:20 AM	Glacier South
Anderson, Laura	Cloth vs. Disposable	Lindstrom, Sheila	4:00 PM	Ballroom
Anderson, Mallory	Keepin' It Clean	Edrisinha, Chaturi	11:20 AM	Cascade
Anderson, Nicole	Flow Cytometric Analysis of the T and B Lymphocyte Populations of Fathead Minnows Exposed to the Muscle Relaxant and Sleeping Aid Pharmaceuticals	Cetkovic-Cvrlje, Marina	2:00 PM	Ballroom
Appicelli, Jordan	First Year Leadership: Creation, Implementation and Assessment of a Workshop Series for First Year Students	Klepitar, Adam	9:00 AM	Ballroom
Arola, Kyle	Restoration of Eastern White Pine (<em>Pinus strobus</em>) at Mille Lacs Kathio State Park	Cook, William	4:00 PM	Ballroom
Arpellet, Magnificat S G	Treat Your Spouse As Your Best Customer	Daneshpour, Manijeh	9:00 AM	Ballroom
Ashbeck, Hazel	Evaluating the Evocative Effects of an Establishing Operation Using Video-Self Modeling	Edrisinha, Chaturi	2:00 PM	Ballroom
Atkielski, Lisa	Healthy Shopping in Meeker County	Lenz, Brenda; Hiemenz, Melinda; Bajari, Ann	9:00 AM	Ballroom
Bachwani, Madhu	A Survey to Evaluate the Effectiveness of Agile Project Management Methodology	Shah, Hiral	9:50 AM	Voyageurs South
Backowski, Jessica	Lesbian and Bisexual Women in LGBT Specific Treatment: The Relationship Between Internalized Homonegativity, Identity Development, and Self-Esteem	Livingston, Tina	9:00 AM	Ballroom
Baertlein, Elizabeth	Critical Pedagogy in a College ESL Classroom	Serrano, Ramon; Robinson, James	10:30 AM	Glacier North
Bang, Katherine	Hands Off	Edrisinha, Chaturi	11:40 AM	Voyageurs North
Barg, Diana	Faunal Analysis and Taphonomy at the Hudson-Meng site, Sioux County, Nebraska	Muniz, Mark	9:50 AM	Glacier South
Bartell, Holly	An Assessment of Health Care Providers in Kandiyohi County Regarding Adolescent Sexual Health	Warner, Susan; Lenz, Brenda; Hiemenz, Melinda	9:00 AM	Ballroom
Bartkowitz, Marissa	Stearns County Public Health Referrals	Lenz, Brenda; Hiemenz, Melinda	9:00 AM	Ballroom
Bartlett, Joseph	Car Collision Warning System	Hossain, Md	2:00 PM	Ballroom
Becker, Marie	Keepin' It Clean	Edrisinha, Chaturi	11:20 AM	Cascade

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<u>Student Presenter</u>	<u>Project Title</u>	<u>Sponsor(s)</u>	<u>Time</u>	<u>Room</u>
Beebe, Taylor	SCSU Spring 2012 Survey: Apollo High School Students	Zerbib, Sandrine	12:00 PM	Glacier South
Beeman, Ashley	SCSU to NMMU an Internship in South Africa	Klepetar, Adam	4:00 PM	Ballroom
Belisle, Andria	Addressing the Specific Needs of the Sophomore Year	Klepetar, Adam	2:00 PM	Ballroom
Bennett, Michael	Production and Isolation of Transferrin Receptors for Evaluation of Novel African Sleeping Sickness Vaccine	Jacobson, Bruce	9:00 AM	Ballroom
Benney, Lauren	Presentation of Annual Spring SCSU Student Survey	Zerbib, Sandrine; Frank, Stephen; Wagner, Steven; Hammes, Michelle; Kulas, John	8:00 AM	Voyageurs North
Bentley, Carol	Old Crow Wing: A Walking Tour of History	Chisholm, Bradley	11:10 AM	Glacier North
Berg, Michael	Experiences of Somali Immigrant Students at Apollo High School	Zerbib, Sandrine	11:00 AM	Glacier South
Bernards, Rikki	How Remedial Courses Affect Success at SCSU	Robinson, David	2:00 PM	Ballroom
Bianco, Antonio	Multiple Use Robot For Following you - MURFFy	Glazos, Michael	2:00 PM	Ballroom
Biehl, Michael	TCP/IP Packet Manipulation	Ghosh, Tirthankar	2:20 PM	Voyageurs South
Blank, Ericka	The Effects of Body Image on Memory and Other Cognitive Processes	Valdes, Leslie	2:00 PM	Ballroom
Bloch, Daniel	Analysis of Data for Stearns County Community Corrections	Robinson, David; Xu, Hui	9:00 AM	Glacier South
Blomstrom, Susan	Parents' Medical and Support Services Informational Needs Related to Children with Trisomy 13 or 18	Devers, Monica; Nelson Crowell, Rebecca	9:00 AM	Ballroom
Boreland, Roshane	Opportunities for Green Sourcing Along the SCSU Supply Chain	Polacco, Alexander	9:00 AM	Ballroom
Braun, Michele	Assessment Surveys: Factors that Influence Students' Persistence and Degree Attainment while Matriculating through the Doctoral in Education (Ed.D.) Program	Silvestre, Gabriela	8:00 AM	Glacier North
Braun, Michele	Career Services Center Practicum Experience	Imbra, Christine	9:00 AM	Ballroom
Brehmer, Rachel	An Investigation into Knowledge, Beliefs, and Behaviors of Japanese and Relaxation	Pryately, Margaret	3:20 PM	Granite
Brengman, Nicole	Healthy Shopping in Meeker County	Lenz, Brenda; Hiemenz, Melinda; Bajari, Ann	9:00 AM	Ballroom
Brix, Rachel	Stearns County Public Health Referrals	Lenz, Brenda; Hiemenz, Melinda	9:00 AM	Ballroom
Buchmayer, Nicollet	Entertainment or Economics	Hughes, Patricia	3:50 PM	Glacier North

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<u>Student Presenter</u>	<u>Project Title</u>	<u>Sponsor(s)</u>	<u>Time</u>	<u>Room</u>
Buechner, Nathan	Value of Sumo Wrestling in Japan	Pryately, Margaret	2:10 PM	Granite
Cai, Shoujie	Supply Chain Management Risks and Remedies in International Business	Polacco, Alexander	9:00 AM	Ballroom
Camara, Cheick	Time Series Analysis of Jail Population for Stearns County Jail	Robinson, David; Xu, Hui	8:40 AM	Glacier South
Carlson, Bruce	Stealers	Edrisinha, Chaturi	3:30 PM	Voyageurs North
Carlson, Caitlin	Glacier National Park, the Blackfeet, and the Great Northern Railway	Wingerd, Mary	11:35 AM	Glacier North
Carlson, Kelsey	Coldwater Spring Contested: American Wilderness and Imperialism within a Dakota Homeland	Torguson, Jeffrey; Blinnikov, Mikhail; Branam, Kelly; St Clair, Darlene	12:00 PM	Cascade
Carpenter, Mary	Addressing Proto and Self-Injurious Behaviors in Young Children by Increasing Functional Communication Skills	Edrisinha, Chaturi; Estrem, Theresa	2:00 PM	Cascade
Cenolli, Eglantina	Promoting Leadership for Women	Imbra, Christine	9:00 AM	Ballroom
Cenolli, Eglantina	The Reasons Why Adult Students Pursue Master Studies at SCSU	Silvestre, Gabriela	11:20 AM	Granite
Chai, Joyce	Effect of COLL 110 on Success in SCSU General Education Courses	Robinson, David	2:00 PM	Ballroom
Chehada, Bachar	TCP/IP Packet Manipulation	Ghosh, Tirthankar	2:20 PM	Voyageurs South
Chen, Binghua	The Cultural Significance of Lucky Cats in Japan	Pryately, Margaret	5:00 PM	Granite
Chiinze, Thandeka	Litter 'R' Us	Edrisinha, Chaturi	3:50 PM	Voyageurs North
Chitrakar, Baadal	The First Annotation of the Arginine and Proline Biosynthetic Pathways of <i>Thiomicrospira crunogena</i> XCL-2	Kvaal, Christopher	9:00 AM	Ballroom
Chitrakar, Neeva	Nutrient and Coliform Study of the Sauk River	Bender, Michner	9:00 AM	Ballroom
Chkhikvadze, Ani	Social Networks - Summoning the Winds of Change	Greaves, Edward	3:00 PM	Glacier North
Christenson, Heidi	Litter 'R' Us	Edrisinha, Chaturi	3:50 PM	Voyageurs North
Cortte, Christopher	Keepin' It Clean	Edrisinha, Chaturi	11:20 AM	Cascade
Cottingham, Kerri	Spatial Movement of Cottingham Family in the United States from 1635 compared to John Hudsons Migration Findings	Torguson, Jeffrey	4:00 PM	Ballroom
Cragin, Chelsie	SCSU Spring 2012 Survey: Apollo High School Students	Zerbib, Sandrine	12:00 PM	Glacier South
Croghan, Katrina	Sexual Selection in the Domestic Guppy	Marcattilio, Anthony	11:40 AM	Cascade
Curtis, Jolene	Pharmaceuticals as a Contaminant of Water	Lindstrom, Sheila	2:00 PM	Ballroom



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<u>Student Presenter</u>	<u>Project Title</u>	<u>Sponsor(s)</u>	<u>Time</u>	<u>Room</u>
Dahl, Callie	Improving Student Satisfaction in the University's Internal Supply Chain	Polacco, Alexander	2:00 PM	Ballroom
Daleiden, Jillian	Transfer of Therapy Skills: Key Principles Everyone Should Know	Smits-Bandstra, Sarah	4:00 PM	Ballroom
Dalhoff, Zachary	Investigating the Mechanism of Semicarbazide Induced Seizure-like Activity in Planaria: Measurement of Glutamate and GABA Using HPLC	Ramakrishnan, Latha	9:00 AM	Voyageurs South
Danford, Mallory	Bactericidal Effects of Essential Oils on <em>Staphylococcus epidermidis</em> and <em>Escherichia coli</em>	Gulrud, Kristin	4:00 PM	Ballroom
Daubert, Michelle	Mindfulness Based Stress Reduction Observations	Macari, Daniel	9:00 AM	Ballroom
Davies, Andrew	Lateral Field Time of Flight Determination of Charge Carrier Mobility	Lidberg, Russell	4:00 PM	Ballroom
Davis, Jeremy	Developing a Preventive Maintenance Management System at Polar Tank Trailer	Shah, Hiral	8:00 AM	Voyageurs South
Davis, Jeremy	Adjustable Scaffolding	Sezen, Ahmet	2:00 PM	Ballroom
Decock, Paul	What's Your World?	Imbra, Christine	2:00 PM	Ballroom
Dedic, Meho	Economic Indicators of the Former Yugoslav Republics	Blinnikov, Mikhail	4:00 PM	Ballroom
DeStefano, Anthony	The Story of a Variable Star: W Geminorum	Foudray, Angela	2:00 PM	Ballroom
Deurmeyer, Hank	Alternative Synthesis and Characterization of PTCDI Derivatives	Neu, Donald; Lidberg, Russell	2:00 PM	Ballroom
Deurmeyer, Hank	Applied Structural Genomics: A Novel Undergraduate Research Experience	Kvaal, Christopher; Jacobson, Bruce	2:00 PM	Ballroom
Deurmeyer, Hank	Gene Annotations of Enzymes in the Biosynthetic Pathway of Alanine, Aspartate, and Glutamate in <em>Thiomicrospira Crunogena</em> XCL-2	Kvaal, Christopher	2:00 PM	Ballroom
Dhein, Leah	Presentation of Annual Spring SCSU Student Survey	Zerbib, Sandrine; Frank, Stephen; Wagner, Steven; Hammes, Michelle; Kulas, John	8:00 AM	Voyageurs North
Dickey, Jordan	Supply Chain Management Risks and Remedies in International Business	Polacco, Alexander	9:00 AM	Ballroom
Dirks, Elizabeth	Presentation of Annual Spring SCSU Student Survey	Zerbib, Sandrine; Frank, Stephen; Wagner, Steven; Hammes, Michelle; Kulas, John	8:00 AM	Voyageurs North
Dirks, Elizabeth	Apollo High School Survey Spring 2012	Zerbib, Sandrine	11:40 AM	Glacier South

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<u>Student Presenter</u>	<u>Project Title</u>	<u>Sponsor(s)</u>	<u>Time</u>	<u>Room</u>
Donnay, Nicholas	Ergonomic Cart Redesign to Improve Worker Efficiency at Polar Tank Trailer LLC	Shah, Hiral	10:30 AM	Voyageurs South
Donnay, Nicholas	R & M Manufacturing	Byun, Jeongmin	2:00 PM	Voyageurs South
Duerkop, Peter	Prescribed Fire Management Impacts on Vegetation	Cook, William	9:00 AM	Ballroom
Dunai, Cordelia	Does JAK3-deficiency Prevent the Development of Cyclophosphamide-exacerbated Streptozotocin-induced Type 1 Diabetes?	Cetkovic-Cvrlje, Marina	8:20 AM	Voyageurs South
Dunai, Cordelia	Following the Autoimmune Response in STZ-induced Diabetic JAK3-deficient Mice by Flow Cytometric Analysis of Isolated CD4+ T Helper Cells and Their Cytokines	Cetkovic-Cvrlje, Marina	8:40 AM	Voyageurs South
Dunderi, Lucas	Biological Water Treatment	Lindstrom, Sheila	2:00 PM	Ballroom
Duong, Quyen	Using Quality Points as an Indicator of Student Performance	Robinson, David	9:00 AM	Ballroom
Dutta Gupta, Ankit	Assistance Device for the Deaf	Glazos, Michael	9:00 AM	Ballroom
Dutta Gupta, Ankit	Social Networks - Summoning the Winds of Change	Greaves, Edward	3:00 PM	Glacier North
Ebensteiner, Jenna	Parkers	Edrisinha, Chaturi	11:20 AM	Voyageurs North
Edwards, Samantha	Apollo High School Survey Spring 2012	Zerbib, Sandrine	11:40 AM	Glacier South
Eggerichs, Michael	Inhibition of L- Glutamate Induced Planarian Seizure Activity by Riluzole	Ramakrishnan, Latha	9:00 AM	Ballroom
Eichholz, James	Virtual STEM Activities Book for the iPad	Olson, Curtis	2:25 PM	Theatre
Eiden, Stephanie	Addressing the Specific Needs of the Sophomore Year	Klepetar, Adam	2:00 PM	Ballroom
Eisenschenk, Glen	The First Annotation of the Histidine Biosynthetic Pathway of <i>Thiomicrospira crunogena</i> XCL-2.	Kvaal, Christopher	9:00 AM	Ballroom
Eldeeb, Nadine	Variable Number Tandem Repeat Analysis of <i>Bacillus cereus</i>	Gulrud, Kristin	2:00 PM	Ballroom
Elshikh, Amira	Riluzole Reverses Semicarbazide-induced Seizure-like Activity in Planaria: Behavioral and Immunological Assays	Cetkovic-Cvrlje, Marina; Ramakrishnan, Latha	4:00 PM	Ballroom
Engelen, Brandon	An Analysis of Traffic Accident Locations in St. Cloud, MN	Torguson, Jeffrey	2:00 PM	Ballroom
Esselman, Paige	Stealers	Edrisinha, Chaturi	3:30 PM	Voyageurs North
Eveland, Mark	Husky Shuttle Thank You Project	Edrisinha, Chaturi	2:20 PM	Cascade
Fabre, Ahmed	Experiences of Somali Immigrant Students at Apollo High School	Zerbib, Sandrine	11:00 AM	Glacier South
Fernando, Warnakulasuriya	Husky Motorsports 2011-2012 Formula Car	Zhao, Yongli	12:00 PM	Voyageurs South

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<u>Student Presenter</u>	<u>Project Title</u>	<u>Sponsor(s)</u>	<u>Time</u>	<u>Room</u>
Ferris, Andrew	Cultural Precedence of Gold in India	Pryately, Margaret	10:00 AM	Granite
Fiala, Emily	Opportunities for Green Sourcing Along the SCSU Supply Chain	Polacco, Alexander	9:00 AM	Ballroom
Flick, Sean	The Hinterlands of Lake Liquors	Torguson, Jeffrey	4:00 PM	Ballroom
Flores, Mariesther	Experiences of Somali Immigrant Students at Apollo High School	Zerbib, Sandrine	11:00 AM	Glacier South
Flores, Mariesther	Leadership Experiences of Women in Higher Education: The Case of St Cloud State University	Duque, Richard	12:00 PM	Granite
Fonken, Gael	Dead Reckoning: How Wasting Time in Libraries Helps One to Read Philosophy	Johnson, Carla	4:30 PM	Voyageurs North
Frieler, Shawn	Healthy Shopping in Meeker County	Lenz, Brenda; Hiemenz, Melinda; Bajari, Ann	9:00 AM	Ballroom
Friese, Kaelyn	Honors Fall Retreat	Klepetar, Adam	4:00 PM	Ballroom
Frost, Hannah	Becoming an Artisan in San Juan de Oriente, Nicaragua	Lavenda, Robert	4:10 PM	Glacier South
Gahm, Noah	McDonald's Poetry Program: McKnowledge is Potential Power	Wells, Scott	11:00 AM	Glacier North
Ganser, Bethany	Chinese Foot Binding: A Tradition Lost But Not Forgotten	Pryately, Margaret	2:40 PM	Granite
Gardner, Colin	Growth of Oxide Over-Layers on Magnetite Crystalline Surface	Petitto, Sarah	2:00 PM	Ballroom
George, Sasha	An Assessment of Health Care Providers in Kandiyohi County Regarding Adolescent Sexual Health	Warner, Susan; Lenz, Brenda; Hiemenz, Melinda	9:00 AM	Ballroom
Giacomino, Lindsay	Comparative Analysis of Acoustic Vowel Space in MN and Spanish Vowels	Koffi, Ettien	9:30 AM	Glacier North
Giacomino, Lindsay	How to Tell a Joke in China: an Analysis of the Chinese Style of Humor	Pryately, Margaret	5:40 PM	Granite
Girmay, Mehret	A New Public Health Epidemic	Antunez, Hector	9:00 AM	Ballroom
Glynn, Bevan	Offshore Wind Power Prediction: A Data Mining Approach	Hansen, Anthony	2:00 PM	Ballroom
Godziek, Andrew	Presentation of Annual Spring SCSU Student Survey	Zerbib, Sandrine; Frank, Stephen; Wagner, Steven; Hammes, Michelle; Kulas, John	8:00 AM	Voyageurs North
Goenner, Cecilia	Stearns County Public Health Referrals	Lenz, Brenda; Hiemenz, Melinda	9:00 AM	Ballroom

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<u>Student Presenter</u>	<u>Project Title</u>	<u>Sponsor(s)</u>	<u>Time</u>	<u>Room</u>
Gong, Hwee Kiat	Isolation of CD4+ T Cells by the Isolation Kit II from Miltenyi Biotec	Cetkovic-Cvrlje, Marina	2:00 PM	Ballroom
Goonetilleke, Shiyanke	LGBT Resources at SCSU	Klepetar, Adam	11:00 AM	Granite
Gopali, Bishow	The First Annotation of the Valine, Leucine and Isoleucine Biosynthetic Pathways of <i>Thiomicrospira crunogena</i> XCL-2	Kvaal, Christopher	4:00 PM	Ballroom
Grangroth, Douglas	Developing a Preventive Maintenance Management System at Polar Tank Trailer	Shah, Hiral	8:00 AM	Voyageurs South
Granlund, Donald	Nutrient and Coliform Study of the Sauk River	Bender, Michner	9:00 AM	Ballroom
Greene, Eric	Stearns County Public Health Referrals	Lenz, Brenda; Hiemenz, Melinda	9:00 AM	Ballroom
Grenier, Garrett	The First Annotation of the Cysteine and Methionine Biosynthetic Pathways of <i>Thiomicrospira crunogena</i> XCL-2	Kvaal, Christopher	4:00 PM	Ballroom
Grier, Megan	Nutrient and Coliform Study of the Sauk River	Bender, Michner	9:00 AM	Ballroom
Gross, Linda	Peer Email Mentor Program	Zehringer, Paula	5:40 PM	Voyageurs South
Gucinski, Mark	The Development of a DNA Fingerprinting Method for <i>Bacillus cereus</i>	Gulrud, Kristin	12:30 PM	Cascade
Gucinski, Mark	Variable Number Tandem Repeat Analysis of <i>Bacillus cereus</i>	Gulrud, Kristin	2:00 PM	Ballroom
Gudding, Jennifer	Addressing Proto and Self-Injurious Behaviors in Young Children by Increasing Functional Communication Skills	Edrisinha, Chaturi; Estrem, Theresa	2:00 PM	Cascade
Guo, Yizhi	Husky Motorsports 2011-2012 Formula Car	Zhao, Yongli	12:00 PM	Voyageurs South
Hansen, Carrie	Job Search Resources for Students with Disabilities	Imbra, Christine	4:00 PM	Ballroom
Hardwick, Daryn	Putting Manual Cartographic Techniques Back into the Digital Era	Torguson, Jeffrey	9:00 AM	Ballroom
Harguth, Jacob	Growth of Oxide Over-Layers on Magnetite Crystalline Surface	Petitto, Sarah	2:00 PM	Ballroom
Harter, Joseph	Lateral Field Time of Flight Determination of Charge Carrier Mobility	Lidberg, Russell	4:00 PM	Ballroom
Hayes, Anne	Hands Off	Edrisinha, Chaturi	11:40 AM	Voyageurs North
Heikkinen, Kyle	Interrupted Field Time of Flight Studies of Trapping Kinetics in Organic Semi-Conductors	Lidberg, Russell; Vogt, Timothy	2:00 PM	Ballroom
Hendrickson, Thomas	Adjustable Scaffolding	Sezen, Ahmet	2:00 PM	Ballroom
Herickhoff, Kevin	Husky Motorsports 2011-2012 Formula Car	Zhao, Yongli	12:00 PM	Voyageurs South
Hernandez-Wilson, Brittanie	Non-verbal Communication when Initiating Same-Sex Relationships	Rehling, Diana	12:00 PM	Voyageurs North
Herrala, Bruce	Husky Motorsports 2011-2012 Formula Car	Zhao, Yongli	12:00 PM	Voyageurs South

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<u>Student Presenter</u>	<u>Project Title</u>	<u>Sponsor(s)</u>	<u>Time</u>	<u>Room</u>
Hiivala, Braeten	Cultural Significance of Weddings in China	Pryately, Margaret	9:30 AM	Granite
Hillukka, Darrell	Husky Motorsports 2011-2012 Formula Car	Zhao, Yongli	12:00 PM	Voyageurs South
Holdman, Anna	Synthetic Biology	Minger, Mark; Simpson, Patricia	4:00 PM	Ballroom
Holler, Steffen	Multiple Use Robot For Following you - MURFFy	Glazos, Michael	2:00 PM	Ballroom
Holmberg, Nicole	An Investigation of the Regulation of Activity on the PGC-1 Family to Identify Drug Targets for the Treatment of Parkinson's Disease	Olson, Brian	9:00 AM	Ballroom
Holmes, Kelley	Are Aerobic and Anaerobic Capacities in USSA Junior Alpine Ski Racers Improving? A Seven Year Follow-up.	Bacharach, David; Blegen, Mark	9:00 AM	Ballroom
Holmstrom, Jane	Friendship in Ruins: Ethnographic Research Among Student Archaeologists	Branam, Kelly	5:00 PM	Glacier South
Holub, Jamie	Why Can't Haiti be Like Fiji: Where Has All the Drinkable Water Gone?	Blinnikov, Mikhail	2:00 PM	Ballroom
Homme, Branden	How Remedial Courses Affect Success at SCSU	Robinson, David	2:00 PM	Ballroom
Howland, Jennifer	Incarceration Statistics in United States	Zuo, Jiping	9:00 AM	Ballroom
Huls, Calista	Filter Freaks	Edrisinha, Chaturi	11:00 AM	Voyageurs North
Ibs, Rachel	Stealers	Edrisinha, Chaturi	3:30 PM	Voyageurs North
Idifle, Abdikadir	Analysis of Data for Stearns County Community Corrections	Robinson, David; Xu, Hui	9:00 AM	Glacier South
Indieke, Peter	Walkability of Cokato	Lenz, Brenda; Hiemenz, Melinda; Henry, Vonna	9:00 AM	Ballroom
Irving-Hewey, Ruby	A Comparative Analysis of Two Residential Stormwater Ponds and their Ability to Reduce Contaminants	Schoenfuss, Heiko	10:30 AM	Voyageurs North
Ivanova, Jelena	Flow Cytometric Quantification of T- and B-cells in the Fathead Minnow ( <i>Pimephales promelas</i> ) with Treatments of Opioids and Antidepressants	Cetkovic-Cvrlje, Marina	9:00 AM	Ballroom
Jacobson, Sara	Smoke Free Policy	Edrisinha, Chaturi	2:40 PM	Cascade
James, Cameron	Antimicrobial Toxicity of Silver Solution on <i>Escherichia coli</i> and <i>Staphylococcus epidermidis</i>	Gulrud, Kristin	2:00 PM	Ballroom
James, Cameron	Variable Number Tandem Repeat Analysis of <i>Bacillus cereus</i>	Gulrud, Kristin	2:00 PM	Ballroom
Jansky, Carol	Sex Allocation in Tree Swallows	Restani, Marco	5:20 PM	Voyageurs South
Javed, Asim	Car Collision Warning System	Hossain, Md	2:00 PM	Ballroom

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<u>Student Presenter</u>	<u>Project Title</u>	<u>Sponsor(s)</u>	<u>Time</u>	<u>Room</u>
Jawad, Mohammed	The Mystery of the Color Red in China	Pryately, Margaret	5:10 PM	Granite
Jelsing, Jason	Measuring the Effects of High School on SCSU Student Performance	Robinson, David	9:00 AM	Ballroom
Jevne, Jeremy	XCEL Energy Coal Removal Process	Zhao, Yongli; Vogt, Adam	11:00 AM	Voyageurs South
Johnson, Chad	Local Government Budgets and the Great Recession	Hughes, Patricia	4:10 PM	Glacier North
Johnson, Jason	XCEL Energy Coal Removal Process	Zhao, Yongli; Vogt, Adam	11:00 AM	Voyageurs South
Johnson, Jennifer	Division of General Studies and Social Norms Theory	Klepeter, Adam	9:00 AM	Ballroom
Johnson, Kelly	Variable Number Tandem Repeat Analysis of <i>Bacillus cereus</i>	Gulrud, Kristin	2:00 PM	Ballroom
Johnson, Monir	Racism at a University: Survey Responses that are Neutral and Do Not Know	Imbra, Christine	4:00 PM	Ballroom
Jorgenson, Andrea	Fishing in South Korea	Pryately, Margaret	5:20 PM	Granite
Justin, Hannah	Eyewitness Testimony: What Law Enforcement Personnel Have Been Doing Wrong	Widner, Robert	9:00 AM	Ballroom
Kafle, Bikal	Presentation of Annual Spring SCSU Student Survey	Zerbib, Sandrine; Frank, Stephen; Wagner, Steven; Hammes, Michelle; Kulas, John	8:00 AM	Voyageurs North
Kannas, Amanda	Presentation of Annual Spring SCSU Student Survey	Zerbib, Sandrine; Frank, Stephen; Wagner, Steven; Hammes, Michelle; Kulas, John	8:00 AM	Voyageurs North
Karki, Kabir	A Novel Annotation of the Aromatic Amino Acids; Phenylalanine, Tyrosine and Tryptophan Biosynthetic Pathways of <i>Thiomicrospira crunogena</i> XCL-2	Kvaal, Christopher	9:00 AM	Ballroom
Karki, Pratima	Riluzole Reverses Semicarbazide-induced Seizure-like Activity in Planaria: Behavioral and Immunological Assays	Cetkovic-Cvrlje, Marina; Ramakrishnan, Latha	4:00 PM	Ballroom
Karki, Sanjina	A New Public Health Epidemic	Antunez, Hector	9:00 AM	Ballroom
Kasten, Kody	Flow Cytometric Quantification of T- and B-cells in the Fathead Minnow ( <i>Pimephales promelas</i> ) with Treatments of Opioids and Antidepressants	Cetkovic-Cvrlje, Marina	9:00 AM	Ballroom
Kavouras, John	The Pendulum Snake	Haglin, Kevin	2:00 PM	Ballroom

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<u>Student Presenter</u>	<u>Project Title</u>	<u>Sponsor(s)</u>	<u>Time</u>	<u>Room</u>
Kellander, Wayne	An Assessment of Health Care Providers in Kandiyohi County Regarding Adolescent Sexual Health	Warner, Susan; Lenz, Brenda; Hiemenz, Melinda	9:00 AM	Ballroom
Kellar, Donald	Presentation of Annual Spring SCSU Student Survey	Zerbib, Sandrine; Frank, Stephen; Wagner, Steven; Hammes, Michelle; Kulas, John	8:00 AM	Voyageurs North
Kelly, Valerie	Genetically Modified Organisms are a Health Risk to Children	Lindstrom, Sheila	9:00 AM	Ballroom
Kershaw, Adam	Adjustable Scaffolding	Sezen, Ahmet	2:00 PM	Ballroom
Khan, Adib	Smart Grid System	Hossain, Md	9:00 AM	Ballroom
King, Amber	An Acoustic Account of the Allophonic Realizations of /t/	Koffi, Ettien	9:50 AM	Glacier North
Kircher, Cole	Flow Cytometric Analysis of the T and B Lymphocyte Populations of Fathead Minnows Exposed to the Muscle Relaxant and Sleeping Aid Pharmaceuticals	Cetkovic-Cvrlje, Marina	2:00 PM	Ballroom
Kloskowski, Maisie	Husky Shuttle Thank You Project	Edrisinha, Chaturi	2:20 PM	Cascade
Klug, Savannah	Stearns County Public Health Referrals	Lenz, Brenda; Hiemenz, Melinda	9:00 AM	Ballroom
Knutson, Keith	Virtual STEM Activities Book for the iPad	Olson, Curtis	2:25 PM	Theatre
Kollar, Jamie	Walkability of Cokato	Lenz, Brenda; Hiemenz, Melinda; Henry, Vonna	9:00 AM	Ballroom
Kratt, Samuel	Virtual STEM Activities Book for the iPad	Olson, Curtis	2:25 PM	Theatre
Kroll, Amanda	Husky Shuttle Thank You Project	Edrisinha, Chaturi	2:20 PM	Cascade
Krznarich, Lauren	First Year Programs and Study Abroad: The Transition Home	Klepetar, Adam	9:00 AM	Ballroom
Kueppers, Michael	Nutrient and Coliform Study of the Sauk River	Bender, Michner	9:00 AM	Ballroom
Kunde, Kristopher	Predicting Jail Time for Stearns County Inmates	Robinson, David; Xu, Hui	8:00 AM	Glacier South
Kunde, Kristopher	Time Series Analysis of Jail Population for Stearns County Jail	Robinson, David; Xu, Hui	8:40 AM	Glacier South
Kunkel, Chadwick	Community Building and Gardening: How to Organize Resources in Your Community	Finan, Ann-Marie	3:30 PM	Glacier South
Kunkel, Chadwick	Student Loan Default Rates: Are They Headed Towards a Financial Crisis?	Hughes, Patricia	4:30 PM	Glacier North
Kuriki, Chinami	Banchan and Health: The Importance of Side Dishes in Korean Cuisine	Pryately, Margaret	8:50 AM	Granite

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<u>Student Presenter</u>	<u>Project Title</u>	<u>Sponsor(s)</u>	<u>Time</u>	<u>Room</u>
LaBau, Hannah	Recreational Boating Impacts on the Mississippi River	Lindstrom, Sheila	4:00 PM	Ballroom
Lachermeier, Jason	A Novel Annotation of the Aromatic Amino Acids; Phenylalanine, Tyrosine and Tryptophan Biosynthetic Pathways of <i>Thiomicrospira crunogena</i> XCL-2	Kvaal, Christopher	9:00 AM	Ballroom
Lachermeier, Jason	Novel Drug Targets for Potential Parkinson's Treatments: Regulation of PGC-1 $\alpha$ by Stabilizing or Degrading with HectH9 Protein	Olson, Brian	9:00 AM	Ballroom
Lahr, Katie	Presentation of Annual Spring SCSU Student Survey	Zerbib, Sandrine; Frank, Stephen; Wagner, Steven; Hammes, Michelle; Kulas, John	8:00 AM	Voyageurs North
Lamp, Amber	Variance in Student Confidence Levels and Their Success Throughout Spring 2012 Semester General Chemistry I (CHEM210)	Petitto, Sarah	2:00 PM	Ballroom
Lamsal, Vivek	The First Annotation of the Histidine Biosynthetic Pathway of <i>Thiomicrospira crunogena</i> XCL-2.	Kvaal, Christopher	9:00 AM	Ballroom
Lang, Rachel	An Assessment of Health Care Providers in Kandiyohi County Regarding Adolescent Sexual Health	Warner, Susan; Lenz, Brenda; Hiemenz, Melinda	9:00 AM	Ballroom
LaQuier, Nicolas	Experiences of Somali Immigrant Students at Apollo High School	Zerbib, Sandrine	11:00 AM	Glacier South
LaQuier, Nicole	Experiences of Somali Immigrant Students at Apollo High School	Zerbib, Sandrine	11:00 AM	Glacier South
Le, Tuan	Sartell Dancer's Overtake Local Just for Kix Studio	Torguson, Jeffrey	9:00 AM	Ballroom
Lea, Allan	Flow Cytometric Analysis of T Cells in Cyclophosphamide (CY)-injected Streptozotocin (STZ) Mouse Model of Type 1 Diabetes	Cetkovic-Cvrlje, Marina	2:00 PM	Ballroom
LeBlanc, Rachel	Keepin' It Clean	Edrisinha, Chaturi	11:20 AM	Cascade
Lechleitner, Rebeca	Applied Structural Genomics: A Novel Undergraduate Research Experience	Kvaal, Christopher; Jacobson, Bruce	2:00 PM	Ballroom
Lee, Ka Ye	Stearns County Public Health Referrals	Lenz, Brenda; Hiemenz, Melinda	9:00 AM	Ballroom
Lee, Kesa	The Symbolic Values of Koi in Japanese Culture	Pryately, Margaret	2:50 PM	Granite
Lee, Yunsung	Using Quality Points as an Indicator of Student Performance	Robinson, David	9:00 AM	Ballroom
Lehnen, Jesse	The Effect of Lead Tackle on the Minnesota Loon Population	Minger, Mark	4:00 PM	Ballroom



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<u>Student Presenter</u>	<u>Project Title</u>	<u>Sponsor(s)</u>	<u>Time</u>	<u>Room</u>
Lesteberg, Kelsey	Anatomy and Performance: The Contribution of Red Muscle Fibers to Climbing Endurance in Hawaiian Freshwater Fish	Schoenfuss, Heiko	9:30 AM	Voyageurs North
Lesteberg, Kelsey	Development of Immunological Assays for the Fathead Minnow ( <i>Pimephales promelas</i> ), a Model Species of Aquatic Toxicology	Schoenfuss, Heiko; Cetkovic-Cvrlje, Marina	11:00 AM	Cascade
Li, Guo	Two Americas: An Analysis of How Chinese Stereotype Americans	Heinrich, Lisa	2:40 PM	Voyageurs North
Li, Ling	Current State Value Stream Mapping of Tank Assembly Line at Polar Tank Trailers	Shah, Hiral	4:10 PM	Voyageurs South
Li, Zhengyi	Predicting Jail Time for Stearns County Inmates	Robinson, David; Xu, Hui	8:00 AM	Glacier South
Lian, Wen	Projecting Fall Enrollment at SCSU	Robinson, David	9:00 AM	Ballroom
Lian, Wen	Importance of Being First: First Generation College Students and Academic Achievement	Rebeck, Kenneth	3:00 PM	Cascade
Lingl, Sara	Healthy Shopping in Meeker County	Lenz, Brenda; Hiemenz, Melinda; Bajari, Ann	9:00 AM	Ballroom
Liu, Xingcai	How Does Internationalization Matter to Community Colleges	Silvestre, Gabriela	9:00 AM	Glacier North
Liu, Zhiyu	Current State Value Stream Mapping of Tank Assembly Line at Polar Tank Trailers	Shah, Hiral	4:10 PM	Voyageurs South
Long, Damas	An Assessment of Health Care Providers in Kandiyohi County Regarding Adolescent Sexual Health	Warner, Susan; Lenz, Brenda; Hiemenz, Melinda	9:00 AM	Ballroom
Long, Jason	Analysis of Data for Stearns County Community Corrections	Robinson, David; Xu, Hui	9:00 AM	Glacier South
Lore, Bradley	Frisbee Golf in Japan and the Affects of Religion	Pryately, Margaret	3:10 PM	Granite
Louks, Anna	SCSU Wind Turbine	Kubesh, Rodney	2:00 PM	Ballroom
Lu, Zeqing	Projecting Fall Enrollment at SCSU	Robinson, David	9:00 AM	Ballroom
Lu, Zeqing	To Stay or Not To Stay: Labor Markets and International Students's Propensity to Stay in the United States	Rebeck, Kenneth	2:40 PM	Glacier North
Lucking, Samantha	Stealers	Edrisinha, Chaturi	3:30 PM	Voyageurs North
Luhning, Alicia	Smoke Free Policy	Edrisinha, Chaturi	2:40 PM	Cascade
Malone, Kayla	Applying Succession Theory to Invasive-Dominated Prairie Areas	Arriagada, Jorge	9:00 AM	Ballroom
Maloney, Steven	An Assessment of the Best Supplier Relationship Management Systems Software in the Service Industry	Polacco, Alexander	2:00 PM	Voyageurs North

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Manandhar, Samendra	Automatic Transfer Switch with Power Monitoring System	Hossain, Md	9:00 AM	Ballroom
Mann, Shaynna	Identification of PGC-1 Regulators: A Family of Proteins Implicated in Neurodegenerative Disorders	Olson, Brian	9:00 AM	Ballroom
Marinovic, Jovana	Comparative Acoustic Vowel Space of Serbian and English	Koffi, Ettien	10:10 AM	Glacier North
Markfort, Brandi	Judicial System Funnel Analysis	Robinson, David; Xu, Hui	8:20 AM	Glacier South
Martinez-Schuldt, Ricardo	Presentation of Annual Spring SCSU Student Survey	Zerbib, Sandrine; Frank, Stephen; Wagner, Steven; Hammes, Michelle; Kulas, John	8:00 AM	Voyageurs North
Mason, Keesha	The Language of the Lost Girls	Bineham, Jeffery	10:30 AM	Glacier South
Mattocks, Jenna	An Assessment of Health Care Providers in Kandiyohi County Regarding Adolescent Sexual Health	Warner, Susan; Lenz, Brenda; Hiemenz, Melinda	9:00 AM	Ballroom
Mattson, Mathew	Analysis of the Grand Portage National Monument Gunflint Assemblage	Muniz, Mark	9:30 AM	Glacier South
McCorquodale, Steven	Improving Operations and Service to the Non Traditional Student Population at SCSU	Burgeson, John	2:55 PM	Theatre
McQuin, Michael	Investigations into the Burghduff Site, S.D., Using Radiocarbon Dating and Phytolith Analysis	Muniz, Mark	9:00 AM	Ballroom
Menden, Allison	A Study of Foundations in Minnesota: Implications for Professional Development of St. Cloud State Students	Eyo, Basseyy	11:40 AM	Granite
Metzger, Nathan	Identification of PGC-1 Regulators: A Family of Proteins Implicated in Neurodegenerative Disorders	Olson, Brian	9:00 AM	Ballroom
Miller, Jennifer	Walkability of Cokato	Lenz, Brenda; Hiemenz, Melinda; Henry, Vonna	9:00 AM	Ballroom
Miller, Karri	Undergraduate Learning Assistants	Hanzsek-Brill, Melissa	2:00 PM	Ballroom
Minor, Maxwell	Monitoring Site-Specific Stream Characteristics in Relation to Effluent Discharge	Schoenfuss, Heiko	9:50 AM	Voyageurs North
Mitiku, Aida	Fractional Dynamics	Bohannan, Gary	4:00 PM	Ballroom
Mohan, Nandini	Regulation of PGC-1 alpha Protein in Patients Suffering From Diabetes and Parkinsons: A Biological Investigation	Olson, Brian	9:00 AM	Ballroom
Mohite, Mayur	Current State Value Stream Mapping of Tank Assembly Line at Polar Tank Trailers	Shah, Hiral	4:10 PM	Voyageurs South

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<u>Student Presenter</u>	<u>Project Title</u>	<u>Sponsor(s)</u>	<u>Time</u>	<u>Room</u>
Mooreson, Ryan	Historical Development and Environmental Value of the St. Cloud Beaver Islands	Torguson, Jeffrey	2:00 PM	Ballroom
Motzko, Jessicajean	Filter Freaks	Edrisinha, Chaturi	11:00 AM	Voyageurs North
Mulder, Neal	Virtual STEM Activities Book for the iPad	Olson, Curtis	2:25 PM	Theatre
Nadeau, Rachel	The Historical and Cultural Significance of Desserts in India	Pryately, Margaret	5:30 PM	Granite
Najmee, Taha	Smart Grid System	Hossain, Md	9:00 AM	Ballroom
Nakayama, Yoshimi	Skimming: A Comparison of the Use of Reading Strategies between Skilled Readers and Less Skilled Readers	Mueller, Isolde	10:10 AM	Glacier South
Nawaratnasamy, Sashi	Counting and Viability of the Immune Cells: Hemocytometer Versus Flow Cytometry	Cetkovic-Cvrlje, Marina	2:00 PM	Ballroom
Nawaratnasamy, Sashi	First Annotation of Glycine, Serine, Threonine Pathway in <i>Thiomycrospora Crunogena</i> XCL-2	Kvaal, Christopher	2:00 PM	Ballroom
Ndayiziga, Mika	Eyes are the Window of the Soul	Pryately, Margaret	10:20 AM	Granite
Neiss, Zachary	Multiple Use Robot For Following you - MURFFy	Glazos, Michael	2:00 PM	Ballroom
Nelson, Briegette	Inhibition of L- Glutamate Induced Planarian Seizure Activity by Riluzole	Ramakrishnan, Latha	9:00 AM	Ballroom
Nelson, Kayleen	Stearns County Public Health Referrals	Lenz, Brenda; Hiemenz, Melinda	9:00 AM	Ballroom
Nelson, Rebecca	Husky Shuttle Thank You Project	Edrisinha, Chaturi	2:20 PM	Cascade
Nelson, Shane	The Cultural Relevance of Capsule Hotels in Japan	Pryately, Margaret	5:50 PM	Granite
Nettleton, Angela	SCSU Spring 2012 Survey: Apollo High School Students	Zerbib, Sandrine	12:00 PM	Glacier South
Neupane, Prabhakar	Spam Forensics	Schmidt, Mark	5:00 PM	Voyageurs South
Newton, Erica	An Assessment of Health Care Providers in Kandiyohi County Regarding Adolescent Sexual Health	Warner, Susan; Lenz, Brenda; Hiemenz, Melinda	9:00 AM	Ballroom
Nguyen, Nhan	What Most Men Do Not Know: They Can Get Breast Cancer	Antunez, Hector	9:00 AM	Ballroom
Niklaus, Jamie	The Relevance of Saju Cafes in Korean Culture	Pryately, Margaret	10:10 AM	Granite
Nixon, Barron	Esox Muskellunge	Simpson, Patricia	2:00 PM	Ballroom
Noggle, Laura	Stearns County Public Health Referrals	Lenz, Brenda; Hiemenz, Melinda	9:00 AM	Ballroom
Nordstrom, Cassandra	Walkability of Cokato	Lenz, Brenda; Hiemenz, Melinda; Henry, Vonna	9:00 AM	Ballroom

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<u>Student Presenter</u>	<u>Project Title</u>	<u>Sponsor(s)</u>	<u>Time</u>	<u>Room</u>
Novak, Travis	Insulinitis Development in Streptozotocin-treated Autoimmune Type 1 Diabetes in Janus Tyrosine Kinase 3-deficient Mouse Model	Cetkovic-Cvrlje, Marina	2:00 PM	Ballroom
Noyes, Joseph	Characterizing a Putative Binding Protein of cdk1 in the Lifecycle of <i>Toxoplasma gondii</i> ; Using In Vitro as Well as In Silico Analysis	Kvaal, Christopher	11:40 AM	Voyageurs South
Nwoke, Uchechukwu	Measuring the Effects of High School on SCSU Student Performance	Robinson, David	9:00 AM	Ballroom
Nwoke, Uchechukwu	Projecting Fall Enrollment at SCSU	Robinson, David	9:00 AM	Ballroom
Offord, Bryce	Geographical Distribution of Horse Stables in Stearns, Benton, and Sherburne County.	Torguson, Jeffrey	2:00 PM	Ballroom
Olson, Sheryl	Analysis of Students Transferring into a Four-Year University	Imbra, Christine	9:00 AM	Ballroom
Olstad, Kyle	SCSU Spring 2012 Survey: Apollo High School Students	Zerbib, Sandrine	12:00 PM	Glacier South
Onken, Jessica	Transfer of Therapy Skills: Key Principles Everyone Should Know	Smits-Bandstra, Sarah	4:00 PM	Ballroom
Orth, Sierra	Counting and Viability of the Immune Cells: Hemocytometer Versus Flow Cytometry	Cetkovic-Cvrlje, Marina	2:00 PM	Ballroom
Ortquist, Cassondra	The Significance of the Traditional Bridal Apparel of Japan	Pryately, Margaret	8:20 AM	Granite
Oseth, Olga	The Creation of Italian Opera	Verrilli, Catherine	2:00 PM	Theatre
Pakhreen, Sushma	Performance of DGS Students in Remedial Work at SCSU	Robinson, David	2:00 PM	Ballroom
Pandey, Chandrashekhar	Interrupted Field Time of Flight Studies of Trapping Kinetics in Organic Semi-Conductors	Lidberg, Russell; Vogt, Timothy	2:00 PM	Ballroom
Parker, Derek	The Historical Significance of Body Art in Japanese Culture	Pryately, Margaret	2:00 PM	Granite
Pashina, Christopher	Virtual STEM Activities Book for the iPad	Olson, Curtis	2:25 PM	Theatre
Patankar, Neha	Developing a Preventive Maintenance Management System at Polar Tank Trailer	Shah, Hiral	8:00 AM	Voyageurs South
Patankar, Neha	Assessment of Ring Retention and Probe Removal in Synovis GEM Flow Coupler Device	Covey, Steven	9:30 AM	Voyageurs South
Patel, Nehalkumar	The First Annotation of the Cysteine and Methionine Biosynthetic Pathways of <i>Thiomicrospira crunogena</i> XCL-2	Kvaal, Christopher	4:00 PM	Ballroom
Pazandak, Nicholas	Bee Colony Collapse Disorder	Lindstrom, Sheila	4:00 PM	Ballroom
Pearson, Kristi	Smoke Free Policy	Edrisinha, Chaturi	2:40 PM	Cascade
Pedersen, Mary	Sonar Testing	Lindstrom, Sheila	2:00 PM	Ballroom
Peterson, Bradley	Husky Motorsports 2011-2012 Formula Car	Zhao, Yongli	12:00 PM	Voyageurs South

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<u>Student Presenter</u>	<u>Project Title</u>	<u>Sponsor(s)</u>	<u>Time</u>	<u>Room</u>
Peterson, Erin	Exhaustive Food Movements: Theory Versus Practice	Branam, Kelly	5:40 PM	Glacier South
Pham, Nguyen	Institutional Policies for Students: The Catalyst for Promoting Student Enrollment	Silvestre, Gabriela	8:20 AM	Glacier North
Pham, Nguyen	Strategies to Enhance Community Partners and Increase External Funding	Imbra, Christine	9:00 AM	Ballroom
Phung, Huong	Flow Cytometric Analysis of the T and B Lymphocyte Populations of Fathead Minnows Exposed to the Muscle Relaxant and Sleeping Aid Pharmaceuticals	Cetkovic-Cvrlje, Marina	2:00 PM	Ballroom
Pichotta, Tia	Larval Fish Behavior: Effects of E2 Exposure	Schoenfuss, Heiko	2:00 PM	Ballroom
Pickar, Michael	Theory and Praxis: Implications on the Uses of Film in the Social Sciences	Philion, Stephen	4:30 PM	Glacier South
Piehl, Kelli	Upcycling Great Looks	Lindstrom, Sheila	2:00 PM	Ballroom
Pierce, Kathryn	Cultural Underpinnings of Japanese Cat Cafes	Pryately, Margaret	8:40 AM	Granite
Plachecki, Matthew	Practicum in the Department of Campus Involvement	Imbra, Christine	2:00 PM	Ballroom
Poudyal, Sushant	ConnexSys Joint Technology	Covey, Steven	1:30 PM	Cascade
Pravdica, Cecilie	Flow Cytometric Quantification of T- and B-cells in the Fathead Minnow ( <i>Pimephales promelas</i> ) with Treatments of Opioids and Antidepressants	Cetkovic-Cvrlje, Marina	9:00 AM	Ballroom
Price, Travis	Opportunities for Green Sourcing Along the SCSU Supply Chain	Polacco, Alexander	9:00 AM	Ballroom
Prigge, Christopher	Antimicrobial Toxicity of Silver Solution on <i>Escherichia coli</i> and <i>Staphylococcus epidermidis</i>	Gulrud, Kristin	2:00 PM	Ballroom
Prigge, Christopher	Variable Number Tandem Repeat Analysis of <i>Bacillus cereus</i>	Gulrud, Kristin	2:00 PM	Ballroom
Quarve, Greta	Pesticides and Health Risks to Children	Lindstrom, Sheila	4:00 PM	Ballroom
Quedens, Kirsten	Improving Student Satisfaction in the University's Internal Supply Chain	Polacco, Alexander	2:00 PM	Ballroom
Quintus, Carly	Community Gardens: Spaces for Small Scale Social Movement Organization	Branam, Kelly	6:00 PM	Glacier South
Rai, Arbin	The First Annotation of the Valine, Leucine and Isoleucine Biosynthetic Pathways of <i>Thiomicrospira crunogena</i> XCL-2	Kvaal, Christopher	4:00 PM	Ballroom
Rajbhandari, Spat	Healthy Shopping in Meeker County	Lenz, Brenda; Hiemenz, Melinda; Bajari, Ann	9:00 AM	Ballroom
Rajewsky, Michael	The Economic Impact of Professional Sports Franchises: Are They Worth Public Subsidization?	Hughes, Patricia	3:30 PM	Glacier North

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Rausch, Bryan	R & M Manufacturing	Byun, Jeongmin	2:00 PM	Voyageurs South
Ray, Jonathan	TCP/IP Packet Manipulation	Ghosh, Tirthankar	2:20 PM	Voyageurs South
Rayamajhi, Pranesh	Ergonomic Study of Metal Finishing Area at Tescom	Shah, Hiral	3:30 PM	Voyageurs South
Raza, Faisal	Interrupted Field Time of Flight Studies of Trapping Kinetics in Organic Semi-Conductors	Lidberg, Russell; Vogt, Timothy	2:00 PM	Ballroom
Raza, Faisal	Fractional Dynamics	Bohannan, Gary	4:00 PM	Ballroom
Rearick, Daniel	Contaminants of Emerging Concern: Does Early Exposure Shape Larval Survival?	Schoenfuss, Heiko	10:10 AM	Voyageurs North
Regmi, Saurab	Automatic Transfer Switch with Power Monitoring System	Hossain, Md	9:00 AM	Ballroom
Regnier, Stacy	Transfer of Therapy Skills: Key Principles Everyone Should Know	Smits-Bandstra, Sarah	4:00 PM	Ballroom
Reichert, Kasey	The Cultural Significance of Elephants in India	Pryately, Margaret	2:20 PM	Granite
Reinking, Brandon	Gratuity Analysis of Food Delivery in Central St. Cloud, MN	Torguson, Jeffrey	9:00 AM	Ballroom
Reis, Caitlyn	R & M Manufacturing	Byun, Jeongmin	2:00 PM	Voyageurs South
Rensberger, Lee	Ergonomic Study of Metal Finishing Area at Tescom	Shah, Hiral	3:30 PM	Voyageurs South
Rieken, Stephen	The History and Tradition Behind the use of Chili Peppers in Indian Cuisine	Pryately, Margaret	2:30 PM	Granite
Ringsmuth, Christina	Goniothalamine: A Natural Product Template for Chemotherapeutic Drug Design	Mechelke, Mark	9:00 AM	Ballroom
Robeck, Ashley	Material Culture of Road-rides: How Group Rides Construct Shared Identity and Community Among Bicyclists	Branam, Kelly	5:20 PM	Glacier South
Roberts, Mornjay	Dilantin Inhibits Chemoconvulsant Induced Seizure-Like Activity in Planarian	Ramakrishnan, Latha	2:00 PM	Ballroom
Roettger, Timothy	Orbital Stability of an Exoplanet Undergoing Mass Loss	Haglin, Kevin	9:00 AM	Ballroom
Rolfes, Michael	Improving Student Satisfaction in the University's Internal Supply Chain	Polacco, Alexander	2:00 PM	Ballroom
Rose, Bradley	Effect of Galantamine on Amylin (1-37) Aggregation: Investigations using Atomic Force Microscopy and Spectrofluorimetry	Ramakrishnan, Latha	4:00 PM	Ballroom
Ross, Brianna	Hands Off	Edrisinha, Chaturi	11:40 AM	Voyageurs North
Rottiger, Trent	Surface Characterization of Organic Electro-optic Materials	Neu, Donald; Lidberg, Russell	4:00 PM	Ballroom
Rowe, Casey	Surface Characterization of Organic Electro-optic Materials	Neu, Donald; Lidberg, Russell	4:00 PM	Ballroom
Rubel, Shane	PIPELine Program Policy and Procedure Manual	Klepetar, Adam	9:00 AM	Ballroom

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Rydellius, Lukas	Assessment of Ring Retention and Probe Removal in Synovis GEM Flow Coupler Device	Covey, Steven	9:30 AM	Voyageurs South
Salzer, Joseph	Observing Variable Stars in the Winter Sky	Foudray, Angela	3:00 PM	Voyageurs South
Sanborn, Cara	An Assessment of Health Care Providers in Kandiyohi County Regarding Adolescent Sexual Health	Warner, Susan; Lenz, Brenda; Hiemenz, Melinda	9:00 AM	Ballroom
Savadogo, Alassane	Using Quality Points as an Indicator of Student Performance	Robinson, David	9:00 AM	Ballroom
Schaefer, Laura	Filter Freaks	Edrisinha, Chaturi	11:00 AM	Voyageurs North
Schaller, Patrice	Virtual STEM Activities Book for the iPad	Olson, Curtis	2:25 PM	Theatre
Schauer, Lindsay	Walkability of Cokato	Lenz, Brenda; Hiemenz, Melinda; Henry, Vonna	9:00 AM	Ballroom
Scherbing, Leah	Cardiovascular Risk Assessment - Concepcion, Chile	Lenz, Brenda; Hiemenz, Melinda	2:00 PM	Ballroom
Scherer, Craig	Flow Cytometric Analysis of the T and B Lymphocyte Populations of Fathead Minnows Exposed to the Muscle Relaxant and Sleeping Aid Pharmaceuticals	Cetkovic-Cvrlje, Marina	2:00 PM	Ballroom
Schlagel, Leah	Stealers	Edrisinha, Chaturi	3:30 PM	Voyageurs North
Schlangen, Jessica	Filter Freaks	Edrisinha, Chaturi	11:00 AM	Voyageurs North
Schlicht, Michael	Walkability of Cokato	Lenz, Brenda; Hiemenz, Melinda; Henry, Vonna	9:00 AM	Ballroom
Schluter, Makenna	Investigation of Sorority Affiliation Using Focus Groups at a Mid-Size Public University	Knutson- Kolodzne, Beth	4:00 PM	Ballroom
Schommer, Sandra	Apollo High School Survey Spring 2012	Zerbib, Sandrine	11:40 AM	Glacier South
Schuh, Allison	An Investigation of the Regulation of Activity on the PGC-1 Family to Identify Drug Targets for the Treatment of Parkinson's Disease	Olson, Brian	9:00 AM	Ballroom
Schultz, Nathaniel	Leadership: A College Experience	Imbra, Christine	4:00 PM	Ballroom
Schulzetenberg, Aaron	Lateral Field Time of Flight Determination of Charge Carrier Mobility	Lidberg, Russell	4:00 PM	Ballroom
Scott, Andrew	Flow Cytometric Analysis of the T and B Lymphocyte Populations of Fathead Minnows Exposed to the Muscle Relaxant and Sleeping Aid Pharmaceuticals	Cetkovic-Cvrlje, Marina	2:00 PM	Ballroom

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Scott, Kim	An Assessment of Health Care Providers in Kandiyohi County Regarding Adolescent Sexual Health	Warner, Susan; Lenz, Brenda; Hiemenz, Melinda	9:00 AM	Ballroom
Seidmedova, Shahlo	The Arab Revolt: A Snowball Effect of Democratic Revolutions in Middle East	Greaves, Edward	3:00 PM	Voyageurs North
Shah, Anil	Smart Grid System	Hossain, Md	9:00 AM	Ballroom
Sherman, Sonny	Presentation of Annual Spring SCSU Student Survey	Zerbib, Sandrine; Frank, Stephen; Wagner, Steven; Hammes, Michelle; Kulas, John	8:00 AM	Voyageurs North
Sherman, Sonny	Movies and Video Games as Aesthetics, Minorities as Gamers and Moviegoers	Freilinger, Rebecca	3:50 PM	Glacier South
Shierts, JoAnn	The Pharmacy In Our Water Supply	Lindstrom, Sheila	9:00 AM	Ballroom
Shishkina, Elena	The US and Egypt: Exploring Linkages	Greaves, Edward	2:20 PM	Voyageurs North
Shrestha, Bibita	Riluzole Reverses Semicarbazide-induced Seizure-like Activity in Planaria: Behavioral and Immunological Assays	Cetkovic-Cvrlje, Marina; Ramakrishnan, Latha	4:00 PM	Ballroom
Siddique, Abubucker	Current State Value Stream Mapping of Tank Assembly Line at Polar Tank Trailers	Shah, Hiral	4:10 PM	Voyageurs South
Sitaula, Niraj	Automatic Transfer Switch with Power Monitoring System	Hossain, Md	9:00 AM	Ballroom
Smith, Jonathan	Husky Motorsports 2011-2012 Formula Car	Zhao, Yongli	12:00 PM	Voyageurs South
Smith, Katie	Hands Off	Edrisinha, Chaturi	11:40 AM	Voyageurs North
Smith, Russell	Fractional Dynamics	Bohannan, Gary	4:00 PM	Ballroom
Soldner, Abbey	Generational Differences in Emerging Adulthood	Klepetar, Adam; Barth, Carrie	9:00 AM	Ballroom
Spann, Joseph	How Crude is the Price You Pay at the Pump?	Hughes, Patricia	2:20 PM	Glacier North
Spielman, Abigail	Walkability of Cokato	Lenz, Brenda; Hiemenz, Melinda; Henry, Vonna	9:00 AM	Ballroom
Sprinkle, Tamara	The Negative Effects of Anzen Shinwa on the Great Tohoku Earthquake	Blinnikov, Mikhail; Ness, John	9:00 AM	Ballroom
Standfuss, Kari	An Assessment of Health Care Providers in Kandiyohi County Regarding Adolescent Sexual Health	Warner, Susan; Lenz, Brenda; Hiemenz, Melinda	9:00 AM	Ballroom
Stang, Jessica	Cardiovascular Risk Assessment - Concepcion, Chile	Lenz, Brenda; Hiemenz, Melinda	2:00 PM	Ballroom



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Stang, Katie	Cardiovascular Risk Assessment - Concepcion, Chile	Lenz, Brenda; Hiemenz, Melinda	2:00 PM	Ballroom
Stay, Jason	Improving Student Satisfaction in the University's Internal Supply Chain	Polacco, Alexander	2:00 PM	Ballroom
Stay, Karen	Presentation of Annual Spring SCSU Student Survey	Zerbib, Sandrine; Frank, Stephen; Wagner, Steven; Hammes, Michelle; Kulas, John	8:00 AM	Voyageurs North
Stay, Karen	Building Healthy Communities from the Ground Up: Community Gardens and Public Health	Antunez, Hector	9:00 AM	Ballroom
Stay, Karen	Community Building and Gardening: How to Organize Resources in Your Community	Finan, Ann-Marie	3:30 PM	Glacier South
Steffes, Ayriel	Keepin' It Clean	Edrisinha, Chaturi	11:20 AM	Cascade
Stenerson, Sandra	Making Therapy More Effective: Key Principles Everyone Should Know	Smits-Bandstra, Sarah	2:00 PM	Ballroom
Stepan, Kala	Healthy Shopping in Meeker County	Lenz, Brenda; Hiemenz, Melinda; Bajari, Ann	9:00 AM	Ballroom
Stock, Jessica	Cultural Significance of Chinese Lanterns in China: Hanging, Floating, and Flying	Pryately, Margaret	12:50 PM	Cascade
Stone, Lara	Stearns County Public Health Referrals	Lenz, Brenda; Hiemenz, Melinda	9:00 AM	Ballroom
Studniski, Amanda	Healthy Shopping in Meeker County	Lenz, Brenda; Hiemenz, Melinda; Bajari, Ann	9:00 AM	Ballroom
Sultanova, Madina	CN Molecule Collisions with Protons at a Wide Range of Astrophysical Energies	Guster, Dennis	2:00 PM	Ballroom
Swanson, Rochelle	Making Therapy More Effective: Key Principles Everyone Should Know	Smits-Bandstra, Sarah	2:00 PM	Ballroom
Tabbert, Jacob	An Investigation of Use of Real-World Examples by High School Chemistry Teachers	Krystyniak, Rebecca	4:00 PM	Ballroom
Taber, Mollie	Healthy Shopping in Meeker County	Lenz, Brenda; Hiemenz, Melinda; Bajari, Ann	9:00 AM	Ballroom
Tang, Qi	Predicting Jail Time for Stearns County Inmates	Robinson, David; Xu, Hui	8:00 AM	Glacier South
Terwey, Megan	Parkers	Edrisinha, Chaturi	11:20 AM	Voyageurs North
Tetali, Venkata	Factors Affecting Success of SCSU Transfer Students	Robinson, David	9:00 AM	Ballroom

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Thapa, Jenny	Performance of DGS Students in Remedial Work at SCSU	Robinson, David	2:00 PM	Ballroom
Thinamany, Sinduja	Flow Cytometric Analysis of T Cells in Cyclophosphamide (CY)-injected Streptozotocin (STZ) Mouse Model of Type 1 Diabetes	Cetkovic-Cvrlje, Marina	2:00 PM	Ballroom
Thompson, Brittany	Keepin' It Clean	Edrisinha, Chaturi	11:20 AM	Cascade
Tilahun, Kaleb	Gene Annotations of Enzymes in the Biosynthetic Pathway of Alanine, Aspartate, and Glutamate in <i>Thiomicrospira Crunogena</i> XCL-2	Kvaal, Christopher	2:00 PM	Ballroom
Torgerson, Kelsey	Filter Freaks	Edrisinha, Chaturi	11:00 AM	Voyageurs North
Tran, Thang	Comparative Between Paper Towel and Cotton Towel	Lindstrom, Sheila	4:00 PM	Ballroom
Traore, Damien	Using Quality Points as an Indicator of Student Performance	Robinson, David	9:00 AM	Ballroom
Traut, Moriah	Design and Synthesis of a Novel Alpha-Methylene Lactone Chemotherapeutic Agent	Mechelke, Mark	2:00 PM	Ballroom
Trettin, Karen	Litter 'R' Us	Edrisinha, Chaturi	3:50 PM	Voyageurs North
Troge, Natalie	Husky Shuttle Thank You Project	Edrisinha, Chaturi	2:20 PM	Cascade
Tyson, Jacob	Apollo High School Survey Spring 2012	Zerbib, Sandrine	11:40 AM	Glacier South
Ulrich, Keith	Detecting the Geometry of the River and Its Ice Thickness	Petzold, Mark	4:00 PM	Ballroom
Van Havermaet, Timothy	Assistance Device for the Deaf	Glazos, Michael	9:00 AM	Ballroom
VanDenakker, Tayler	Insulitis Development in Streptozotocin-treated Autoimmune Type 1 Diabetes in Janus Tyrosine Kinase 3-deficient Mouse Model	Cetkovic-Cvrlje, Marina	2:00 PM	Ballroom
Vandersteeg, Antonie	An Assessment of the Best Supplier Relationship Management Systems Software in the Service Industry	Polacco, Alexander	2:00 PM	Voyageurs North
Vaske, Hayley	Deaf and Hearing Visual Memory	Valdes, Leslie	2:00 PM	Ballroom
Veeramani, Karthiga	Potential of Ayurveda in Western Medicine	Pryately, Margaret	8:00 AM	Granite
Victorson, Eric	Husky Motorsports 2011-2012 Formula Car	Zhao, Yongli	12:00 PM	Voyageurs South
Viestenz, Robin	Nutrient and Coliform Study of the Sauk River	Bender, Michner	9:00 AM	Ballroom
Voeller, Keith	Charge Carrier Mobility of Single Crystal Organic Semiconductors : Effects of Structure & Molecular Packing	Neu, Donald; Lidberg, Russell	9:00 AM	Ballroom
Vue, KongMeng	Views of Retirement Amongst the Hmong	Devoe, Marlene	4:00 PM	Ballroom
Wagman, Amber	Applied Structural Genomics: A Novel Undergraduate Research Experience	Kvaal, Christopher; Jacobson, Bruce	2:00 PM	Ballroom
Waisanen, Lauri	Practicum at Century College	Imbra, Christine	4:00 PM	Ballroom

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Walden, Melissa	Sociophonetic Research Project: Vowel Format Analysis	Koffi, Ettien	4:00 PM	Ballroom
Wang, LuLu	Testing of Bluetooth Communication and Android Proximity Pinging	Moon, Jon; Sieling, Jared	4:00 PM	Ballroom
Waste, Jamie	The Impact of Personal Watercraft on Aquatic Ecosystems	Lindstrom, Sheila	4:00 PM	Ballroom
Weinzetl, Rosemary	Walkability of Cokato	Lenz, Brenda; Hiemenz, Melinda; Henry, Vonna	9:00 AM	Ballroom
Weldon, Madison	The Motivation for Bathing in Japanese Culture	Pryately, Margaret	8:10 AM	Granite
Wendland, Kayce	Antimicrobial Toxicity of Silver Solution on <i>Escherichia coli</i> and <i>Staphylococcus epidermidis</i>	Gulrud, Kristin	2:00 PM	Ballroom
White, William	The Cultural Significance of the Tatami Style in Japan	Pryately, Margaret	3:00 PM	Granite
Wilhelm, Daniel	Amazon Deforestation	Minger, Mark	4:00 PM	Ballroom
Willaert, Emily	Are Aerobic and Anaerobic Capacities in USSA Junior Alpine Ski Racers Improving? A Seven Year Follow-up.	Bacharach, David; Blegen, Mark	9:00 AM	Ballroom
Williams, Alisha	SCSU Spring 2012 Survey: Apollo High School Students	Zerbib, Sandrine	12:00 PM	Glacier South
Williams, Chantelle	Smoke Free Policy	Edrisinha, Chaturi	2:40 PM	Cascade
Williams, Jennifer	Native Binding of Monoclonal Antibody Generated Toward the Iron Surface Siderophore Receptor of Salmonella Newport	Cetkovic-Cvrlje, Marina	11:20 AM	Voyageurs South
Willms, Molly	Kawaii and the Unique Direction of Japanese Fashion	Pryately, Margaret	1:10 PM	Cascade
Wilmunen, Jay	Correlation of Customers of an Outfitting Company in Ely, Minnesota	Torguson, Jeffrey	9:00 AM	Ballroom
Wilson, Kendra	Parkers	Edrisinha, Chaturi	11:20 AM	Voyageurs North
Winchester, Kimber	Litter 'R' Us	Edrisinha, Chaturi	3:50 PM	Voyageurs North
Winfield, Nicole	Parkers	Edrisinha, Chaturi	11:20 AM	Voyageurs North
Winkels, Andrea	Personality and Metacognition	Valdes, Leslie	2:00 PM	Ballroom
Winter, Christopher	The Social Impact of the Legend of the Red String of Fate in China	Pryately, Margaret	8:30 AM	Granite
Wolf, Kendall	Effect of Goose Population	Minger, Mark	4:00 PM	Ballroom
Wolfe, Bradley	Truth in China: An Eastern Reflection on Honesty	Pryately, Margaret	9:40 AM	Granite
Wright, Abigail	Who is the Fairest of Them All?	Pryately, Margaret	9:50 AM	Granite

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Yahya, Nawal	Breed and Diurnal Effects on Leptin and Glucose Concentrations in Tropical Cattle	Gazal, Oladele	2:00 PM	Ballroom
Yin, Feng	Supply Chain Management Risks and Remedies in International Business	Polacco, Alexander	9:00 AM	Ballroom
Yu, Xianzhi	Assessment of Ring Retention and Probe Removal in Synovis GEM Flow Coupler Device	Covey, Steven	9:30 AM	Voyageurs South
Yusuf, Hassan	Female Genital Mutilation	Blinnikov, Mikhail	9:00 AM	Ballroom
Zahorski Schmidt, Valerie	Alumni Relations and the Community College	Imbra, Christine	2:00 PM	Ballroom
Zeiner, Christine	PIPELine Program Policy and Procedure Manual	Klepetar, Adam	9:00 AM	Ballroom
Zhang, Yanming	ConnexSys Joint Technology	Covey, Steven	1:30 PM	Cascade
Zhu, Chen	Factors Affecting Success of SCSU Transfer Students	Robinson, David	9:00 AM	Ballroom
Zinnecker, Jennah	Smoke Free Policy	Edrisinha, Chaturi	2:40 PM	Cascade
Zirbes, Leah	Political Consumerism and Environmental Degradation	Lindstrom, Sheila	2:00 PM	Ballroom
Zuluaga, Juan	Mantel's Test for Inference on Longitudinal Categorical Sequences: Is It Good Enough?	Xu, Hui	2:40 PM	Voyageurs South
Zwick, Scott	The Conservation Reserve Program and Ethanol in MN	Torguson, Jeffrey	2:00 PM	Ballroom

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### St. Cloud State University

#### Center for Continuing Studies

##### ***Continuing Studies***

<u>Sponsor</u>	<u>Student(s)</u>
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#### College of Liberal Arts

##### ***Anthropology and Sociology***

<u>Sponsor</u>	<u>Student(s)</u>
Branam, Kelly	Carlson, Kelsey; Holmstrom, Jane; Robeck, Ashley; Peterson, Erin; Quintus, Carly
Lavenda, Robert	Frost, Hannah
Muniz, Mark	Mattson, Mathew; McQuin, Michael; Barg, Diana

##### ***Communication Studies***

<u>Sponsor</u>	<u>Student(s)</u>
Bineham, Jeffery	Mason, Keesha
Eyo, Bassey	Menden, Allison
Pryately, Margaret	Wolfe, Bradley; Weldon, Madison; Wright, Abigail; Lore, Bradley; Pierce, Kathryn; Giacomino, Lindsay; Buechner, Nathan; Kuriki, Chinami; Willms, Molly; Niklaus, Jamie; Stock, Jessica; Parker, Derek; Ferris, Andrew; Winter, Christopher; Rieke
Rehling, Diana	Hernandez-Wilson, Brittanie
Wells, Scott	Gahm, Noah

##### ***English***

<u>Sponsor</u>	<u>Student(s)</u>
Koffi, Ettien	Marinovic, Jovana; Walden, Melissa; King, Amber; Giacomino, Lindsay
Robinson, James	Baertlein, Elizabeth

##### ***Foreign Languages and Literature***

<u>Sponsor</u>	<u>Student(s)</u>
Mueller, Isolde	Nakayama, Yoshimi

##### ***History***

<u>Sponsor</u>	<u>Student(s)</u>
Ness, John	Sprinkle, Tamara
Wingerd, Mary	Ames, Alexander; Carlson, Caitlin

##### ***Mass Communications***

<u>Sponsor</u>	<u>Student(s)</u>
Heinrich, Lisa	Li, Guo

##### ***Philosophy***

<u>Sponsor</u>	<u>Student(s)</u>
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Devoe, Marlene

Kulas, John

Valdes, Leslie

Widner, Robert

#### Student(s)

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Justin, Hannah

### ***Sociology and Anthropology***

#### Sponsor

Duque, Richard

Finan, Ann-Marie

Freilinger, Rebecca

Panicker, Ajaykumar

Philion, Stephen

Zerbib, Sandrine

Zuo, Jiping

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Flores, Mariesther

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#### **Biological Sciences**

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Kvaal, Christopher	Nawaratnasamy, Sashi; Deuermeyer, Hank; Lachermeier, Jason; Noyes, Joseph; Tilahun, Kaleb; Grenier, Garrett; Karki, Kabir; Eisenschenk, Glen; Lamsal, Vivek; Chitrakar, Baadal; Rai, Arbin; Patel, Nehalkumar; Aden, Fadumo; Acharya, Jyotindra;
Marcattilio, Anthony	Croghan, Katrina
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Lenz, Brenda	Mattocks, Jenna; Lang, Rachel; Sanborn, Cara; Standfuss, Kari; Scott, Kim; George, Sasha; Kellander, Wayne; Long, Damas; Bartell, Holly; Newton, Erica; Stepan, Kala; Taber, Mollie; Rajbhandari, Spat; Studniski, Amanda; Atkielski, Lisa; Ling
Warner, Susan	Mattocks, Jenna; Lang, Rachel; Sanborn, Cara; Standfuss, Kari; Scott, Kim; George, Sasha; Kellander, Wayne; Long, Damas; Bartell, Holly; Newton, Erica

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## ACKNOWLEDGEMENTS

### Student Research Colloquium Committee

- Linda Donnay, Director of Research Development, Office of Sponsored Programs
- Jen Foley, Director, Applied Research and Development Center
- Jonathan Foss, Assistant Director for Campus Programs, Campus Involvement
- Susan Jordahl, Director, Continuing Studies, College of Science and Engineering, Herberger Business School
- Balsy Kasi, Professor, Environmental and Technological Studies
- Makenna Schluter, Graduate Assistant, Fraternity/Sorority Life
- Leslie Valdes, Associate Professor, Psychology
- Rachel Wexelbaum, Collection Management Librarian, Learning Resources Services

### Formal Paper Judges

- Rachel Wexelbaum, Co-chair, Collection Management Librarian, Learning Resources Services
- Leslie Valdes, Co-chair, Associate Professor, Psychology
- Judith Dorn, Professor, English
- Susan Parault Dowds, Assistant Professor, Counseling and Community Psychology
- Cari Kenner, Associate Professor, Academic Learning Center
- Elena Kurinski, Assistant Professor, Foreign Languages and Literature
- Alexander Polacco, Professor, Management
- Hung-Chih (Alvin) Yu, Assistant Professor, Geography, Planning and Community Development

### Paper Presentation Judges

- Leslie Valdes, Co-chair, Associate Professor, Psychology
- Rachel Wexelbaum, Co-chair, Collection Management Librarian, Learning Resources Services
- Oladele Gazal, Professor, Biological Sciences
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### Poster Presentation Judges

- Balsy Kasi, Chair, Professor, Environmental and Technological Studies
- David Bacharach, Professor, Wellness
- Marina Cetkovic-Cvrlje, Professor, Biological Sciences
- Joseph Melcher, Associate Professor, Psychology
- Sarah Smits-Bandstra, Assistant Professor, Communication Sciences and Disorders

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- Renee Dingmann, Office Manager, Office of Equity and Affirmative Action
- Moses Ehlers, Graduate Assistant, Office of Sponsored Programs
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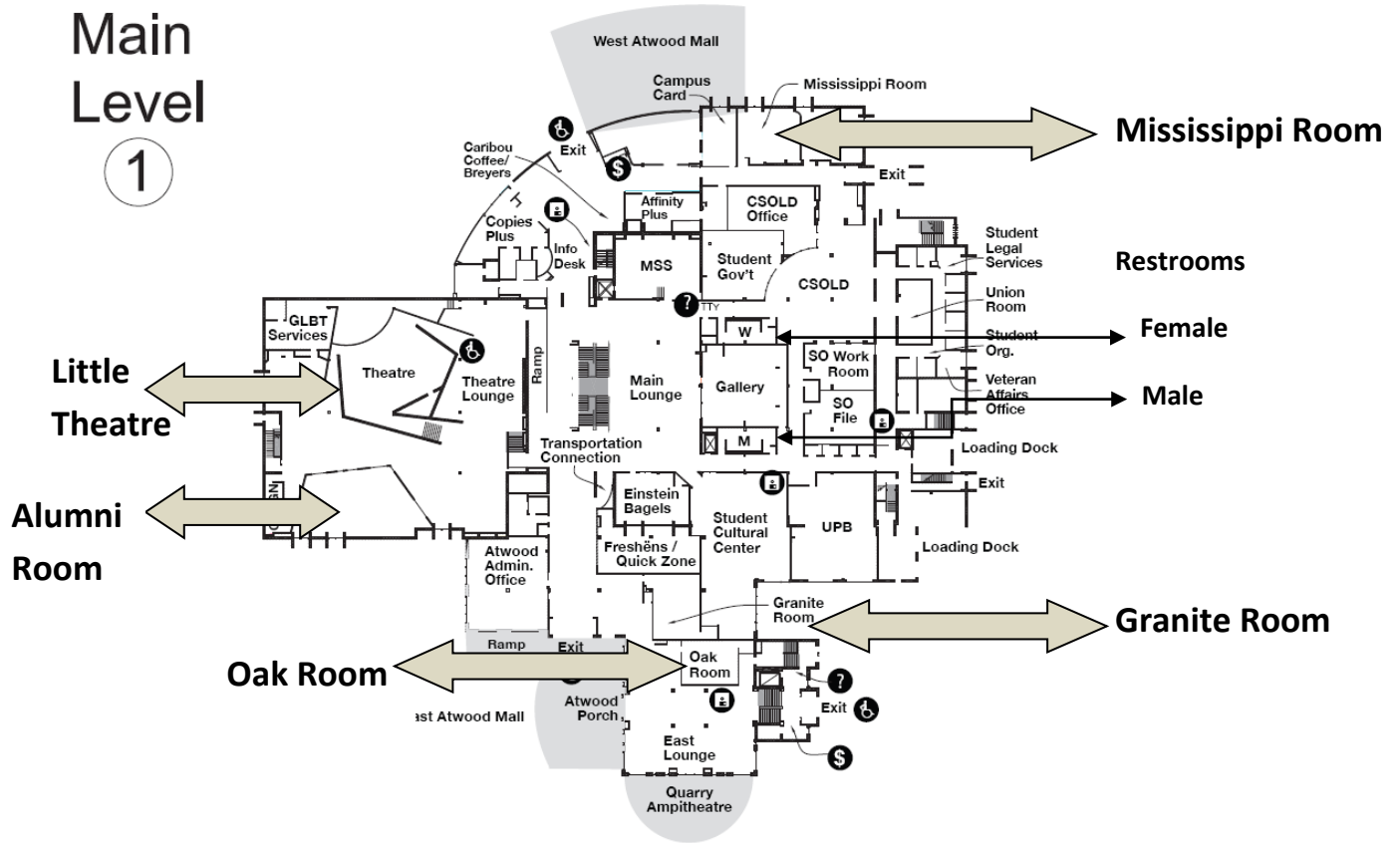
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# Floor Plan for Atwood Memorial Center

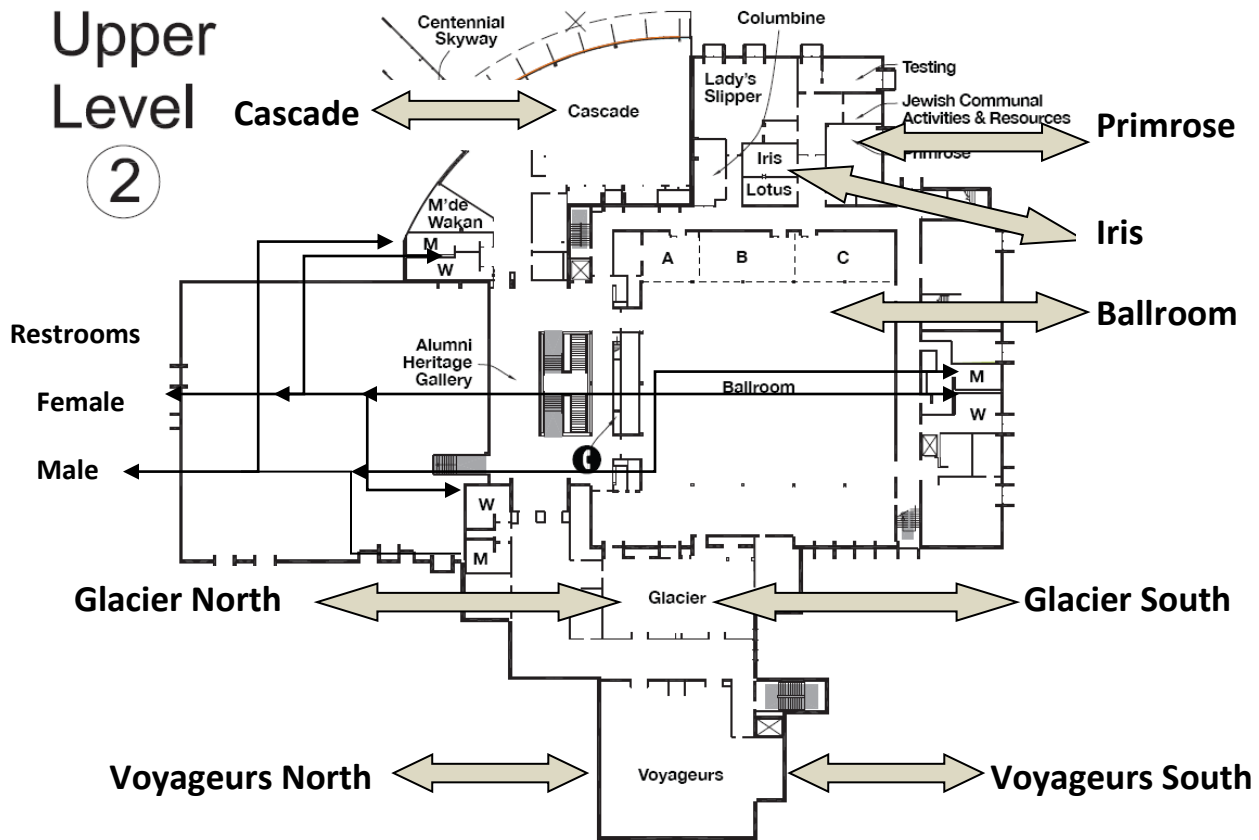
## Main Level

1



## Upper Level

2





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