4-19-2011

Student Research Colloquium Proceedings 2011

St. Cloud State University

2011 student research COLLOQUIUM

from across the globe to SCSU

Proceedings

Tuesday, April 19, 2011

Atwood Memorial Center

8:00 AM - 8:00 PM

St. Cloud State University ™

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 a $25 gift card; up to $400 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 awards 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.

14th Annual Student Research Colloquium

April 19, 2011

KEYNOTE ADDRESS – CASCADE ROOM

12:30 – 1:30 p.m. Keynote Speaker

1:30 – 2:00 p.m. Reception

Brianda Cediel

Executive Director, Hands Across the World

"Research with an International Flair"

In this talk, Cediel takes the lessons she has learned during her remarkable 28 years teaching career with people of different countries and diverse ethnicities. She came back to SCSU in 2000 to finish her studies in ESL (English as a Second Language).

Journey with her through those years and learn how she became the founder of "Hands Across the World," a very successful program for immigrants here in St. Cloud, MN. The program is recognized at a national level as one of the best for refugees and immigrants.

She serves her students with compassion, love, empathy, and humility. Her commitment to the program's vision is to empower and enable those around her while pulling them to thrive in the global community. We are proud to welcome Brianda Cediel to her alma mater.

LOOKING BEYOND THE NOTES: MUSIC RESEARCH AND PERFORMANCE

12:30 – 1:45 p.m. Performing Arts Center, Ruth Gant Recital Hall, Room 230

- Beethoven's "Appassionata Piano Sonata No. 23 in F Minor, Op. 57"
- "Glass Prison: A Compositional Approach" a View of Electronic Music from a Compositional Aspect
- Garage Drummer: Integration of Electronic Media and Percussion in Performance

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

Session	Event	Time	Room
Session A-A	Fulbright Grants for Students	8:00 AM - 9:20 AM	Alumni
Session A-C	Paper Competition I	8:00 AM - 9:20 AM	Cascade
Session A-GN	Sociology	8:00 AM - 9:20 AM	Glacier North
Session A-GS	Historical Perspectives in Education and Gender Studies	8:00 AM - 9:20 AM	Glacier South
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-A	SCSU Survey Center	9:30 AM - 10:50 AM	Alumni
Session C-C	Paper Competition II	9:30 AM - 10:50 AM	Cascade
Session C-G	Economics I	9:30 AM - 10:50 AM	Granite
Session C-GS	Sociology and Anthropology I	9:30 AM - 10:50 AM	Glacier South
Session C-VS	Engineering I	9:30 AM - 10:50 AM	Voyaguers South
Session D-A	Behavioral Studies	11:00 AM - 12:20 PM	Alumni
Session D-C	Paper Competition III	11:00 AM - 12:20 PM	Cascade
Session D-G	Economics II	11:00 AM - 12:20 PM	Granite
Session D-GN	Educational Policies and Systems	11:00 AM - 12:20 PM	Glacier North
Session D-GS	Behavioral Analysis I	11:00 AM - 12:20 PM	Glacier South
Session D-O	Information Systems and Security I	11:00 AM - 12:20 PM	Oak
Session D-VN	Impact of Technology on Human Expression and Community	11:00 AM - 12:20 PM	Voyageurs North
Session D-VS	Science and Engineering II	11:00 AM - 12:20 PM	Voyageurs South
Session E-C	Keynote Address: Research with an International Flair	12:30 PM - 2:00 PM	Cascade
Session E-R	Looking Beyond The Notes: Music Research and Performance	12:30 PM - 1:45 PM	Ruth Gant Recital Hall Rm 230, Performing Arts Ctr
Session F-A	St. Cloud Safety	2:00 PM - 3:20 PM	Alumni
Session F-G	Behavioral Analysis II	2:00 PM - 3:20 PM	Granite
Session F-GN	Higher Education	2:00 PM - 3:20 PM	Glacier North
Session F-GS	Social and Behavioral Studies I	2:00 PM - 3:20 PM	Glacier South
Session F-O	Modeling and Forecasting	2:00 PM - 3:20 PM	Oak
Session F-VN	Sociology and Anthropology II	2:00 PM - 3:20 PM	Voyageurs North
Session F-VS	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-G	Social and Behavioral Studies II	3:30 PM - 4:50 PM	Granite
Session H-GN	Economics III	3:30 PM - 4:50 PM	Glacier North
Session H-GS	Computer Forensics	3:30 PM - 4:50 PM	Glacier South
Session H-O	Fulbright Grants for Students	3:30 PM - 4:50 PM	Oak
Session H-VN	Humanities	3:30 PM - 4:50 PM	Voyageurs North
Session H-VS	Biological Sciences	3:30 PM - 4:50 PM	Voyageurs South
Session I-B	Poster Presentations III	4:00 PM - 5:30 PM	Ballroom
Session J-A	First Year Service Learning Experiences	5:00 PM - 6:20 PM	Alumni
Session J-GS	Information Systems and Security II	5:00 PM - 6:20 PM	Glacier South
Session J-VN	Science and Engineering III	5:00 PM - 6:20 PM	Voyageurs North
Session J-VS	Philosophy	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

Session A-A **Fulbright Grants for Students** **Alumni**

Moderator Nichole Pazdernik, Director, Center for International Studies

Time	Index	Presenter(s)	Project Title
8:00 AM	1		Fulbright Grants for Students

Session A-C **Paper Competition I** **Cascade**

Moderator Jodi Kuznia, Director, Office of Sponsored Programs

Time	Index	Presenter(s)	Project Title
8:00 AM	1	Poganski, Beth	Are All Lake Habitats Equal? Effects of Endocrine Compounds From Non-point Sources on Sunfish
8:20 AM	2	Au, Chin Cheung	Teaching a Child with Autism to Toothbrush
8:40 AM	3	Moberly, Lance; Lanners, Chad; Sandeen, Taren; Johnson, Brittany; McDermeit, Alissa	Snatch and Run
9:00 AM	4	Stein, Amanda; Peyton, Stefanie; Savage, Abby; Packer, Hilary	Bike Theft Experiment

Session A-GN **Sociology** **Glacier North**

Moderator Stephen Philion, Associate Professor, Sociology and Anthropology

Time	Index	Presenter(s)	Project Title
8:00 AM	1	Brown, Angela	Queer Youth Community Organizing: Intents and Outcomes of Youth Mobilization in LGBTQ Service Programs
8:20 AM	2	Lauritsen, Matthew	Secular Mode, Sacred Message: How Contemporary Christian Musicians are Called by God to Perform
8:40 AM	3	Revier, Kevin	Surviving with Spirituality
9:00 AM	4	Phillips, Shaun	The Role of Social Capital at the Winter Farmers' Market in the Lives and Livelihoods of Farmers

Session A-GS **Historical Perspectives in Education and Gender Studies** **Glacier South**

Moderator Ellyn Bartges, Officer, Equity and Affirmative Action Office

Time	Index	Presenter(s)	Project Title
8:00 AM	1	Svare, Nathan	How Masculinity Works to Oppress Men as Defined by Iris Marion Young's Five Faces of Oppression
8:20 AM	2	Svare, Nathan	Theory of Men's Groups and Movements
8:40 AM	3	Malchow, Bridgette; McClellan, Brianne	Integrating Women Into the Teaching of Early 20th Century America
9:00 AM	4	Bialek, Marissa	A Changing View of SCSU

STUDENT RESEARCH COLLOQUIUM PROGRAM

Session A-VS **Science and Engineering I** **Voyageurs South**

Moderator Carolyn Williams, Associate Dean, Multicultural Affairs and STEM Initiatives

Time	Index	Presenter(s)	Project Title
8:00 AM	1	Hancock, Harrison; Matto, Saqib	Research Solar Furnace with Tracking Heliostat
8:20 AM	2	Miller, Jeffrey	Abiotic Influences On Estrogenic Biomarker Expression In Riverine Conditions Of Exposure To Treated Wastewater
8:40 AM	3	Justin, Andrew; Peiris, Yoshan; Ramirez, Juan	Cooling Fan Braking System
9:00 AM	4	Holtz, Bradley	Forecasting Housing Bubbles

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

Moderator Stuart Umberger, Assistant Director, Student Organizations and Leadership Development

Time	Index	Presenter(s)	Project Title
9:00 AM	1	Bauer, Andrew	Analysis of the Relationship Between Tornado Frequency and the Fujita Scale
9:00 AM	2	Einck, Alan	The Effects of Burning and Herbicide Treatments on Spotted Knapweed (Centaurea maculosa)
9:00 AM	3	Tabbert, Jacob	An Investigation of Use of Real-World Examples by High School Chemistry Teachers
9:00 AM	4	Genty, Travis	The Big Woods of Wright County, Minnesota: Past, Present, and Future
9:00 AM	5	Dunai, Cordelia; Nieland, Nicole; Gong, Hwee Kiat	Investigating the Biosynthetic Pathways of Cysteine and Methionine in Planctomyces Limnophilus
9:00 AM	6	Gong, Hwee Kiat; Bui, Anh; Lee, Yong Heng	Effect of Streptozotocin on the Proliferation and Cytokine Secretion of Mouse Splenocytes
9:00 AM	7	Bertilson, Zechariah; Rumpca, Justin; Kunkel, Arin	Autonomous Tracking Security System
9:00 AM	8	Grossman, Anthony	An Analysis of the Modern Usage of One-Room Schoolhouses in Stearns County
9:00 AM	9	Madden, Dennis; Wright, Eric	A Comparison of Absolute and Relative Upper Body Power With Roller Ski-skating Performance
9:00 AM	10	Madden, Dennis	High Intensity Interval Training and 40km Time Trial Cycling
9:00 AM	11	Knudson, Tyler	Amateur Baseball Team Names
9:00 AM	12	Primus, Kelsi; Gruber, Tiffany; Current, Meghan; LeBlanc, Laura; Markgraf, Jessica	Cultural-Linguistic Diversity Trends in Speech-Language Pathologists' Caseloads
9:00 AM	13	Mawilmada, Prasad	Diffusion Dynamics of Hydrogels
9:00 AM	14	Meyer, Danielle	Endocrine Disruptors and Waste Water Treatment Plants in the Chicago Area
9:00 AM	15	Meyer, Danielle	Research in Metacognition
9:00 AM	16	Pratt, Kevin	Groundwater Contamination in Stearns County

9:00 AM	17	Belay, Mikiyas; Williams, Jennifer; Thapa, Meen	Histidine Metabolism in Plantomyces Limnophilus DSM 3776
9:00 AM	18	Williams, Jennifer	Monoclonal Screening for Salmonella Potency Assay Development
9:00 AM	19	Huang, Chunyang; Reichert, Senn; Dundore, Jessica; Goltz, Wendy; Perry, Alissa	Speech-Language Pathologists' Perceptions and Understanding of Cultural-Linguistic Diversity
9:00 AM	20	Oyedele, Kazeem	Investigating the Inhibition of Bacterial Growth by Potassium Sorbate and Sodium Benzoate
9:00 AM	21	Cacek, Theresa	Diatoms: Modeling the Effects of High Flow Rate and Still Flow Rate on Orientation and Scouring of Stalk Forming Gomphonema and Cymbella from the Substrate
9:00 AM	22	Berling, Gregory; Meemken, Kelly; Kruse, Alexander	Solar Powered Pontoon Boat
9:00 AM	24	Waddell, Abby	Expert/Novice Study of Percent Yield
9:00 AM	25	Van Den Einde, Jessica; Lindenfelser, Kali; Siewert, Breann; Vandenberghe, Amber	Speech-Language Pathologists' Diversity Focused Training and Resources
9:00 AM	26	Grosz, Danielle	Students' Understanding of Equilibrium
9:00 AM	27	Notch, Patrick; Friebel, Nicholas; Eha, Alexander; Hancock, Patrick; McElwain, Eli	All-Terrain Robotic Device
9:00 AM	28	Sayers, June	Sedimentary Lake Cores from Swamp Lake in Central Minnesota to Show Effects of Lake Level on Wild Rice
9:00 AM	29	Chitrakar, Neeva; Granlund, Donald; Grier, Megan; Kueppers, Michael; Viestenz, Robin	Investigation of Sauk River Water and Sediment Quality
9:00 AM	30	Stumvoll, Tanner; Nogosek, Chad; Sainju, Anish	Electonic Display Board
9:00 AM	31	Johnson, Chad; Davenport, Ashley	Pre-Competition Hydration Status of High School Athletes Participating in Alpine Skiing
9:00 AM	32	Shah, Anil; Najmee, Taha; Khan, Adib	Smart Grid System
9:00 AM	33	Awalt, Shane	Backwater and Associated Hydraulic Choking in Stratified Density Currents
9:00 AM	34	Sall, Genessa	Left Motor Cortex Interference in Relation to Cell Phone Use and Driving
9:00 AM	35	Van Slyke, Jenna	Examining the Relationship Between Internalized Homonegativity and Treatment Outcomes in LGBT-specific Addiction Treatment
9:00 AM	36	AlYami, Naif	Unmanned Aerial Vehicle
9:00 AM	37	Kaufmann, Kathryn	Influence of Block Angle on Take-off Velocity in Swim Starts
9:00 AM	38	Phelps, John	'PCmode: A Robust Modem for High Frequency Ionospheric Communications'
9:00 AM	39	Stay, Karen	Community Outreach: the Health Fair Experience at SCSU

9:00 AM	40	Hawkins, Dawn	The Use of an Industrial By-product as a Soil Amendment and Its Effects on Soil Physical/chemical Characteristics and Nutrient Retention

Session C-A **SCSU Survey Center** **Alumni**

Moderator Michelle Kukoleca Hammes, Associate Professor, Political Science

Time	Index	Presenter(s)	Project Title
9:30 AM	1	Thibodeau-Schuldt, Megan	Leaving Home: An Analytical Discussion on Immigration
9:50 AM	2	Thibodeau-Schuldt, Megan; Edberg, Lucas; Hardrath, Jacquelin; Haggstrom, Brady; Archer, Julie; Martinez-Schuldt, Ricardo; Kellar, Donald; Behrens, Anna; Sherman, Sonny; Schweiss, Maria	SCSU Spring Student Survey

Session C-C **Paper Competition II** **Cascade**

Moderator Jodi Kuznia, Director, Office of Sponsored Programs

Time	Index	Presenter(s)	Project Title
9:30 AM	1	Hobbs, Joseph	Is There a Difference in Immune System Involvement in Murine Autoimmune Versus Toxic Type 1 Diabetes?
9:50 AM	2	Dunai, Cordelia	Does Deficiency in the T-cell Signaling Protein, Jak3, Affect the Development of Murine Type 1 Diabetes?
10:10 AM	3	CarlinSchauer, Kyle; Masterson, Kristen; DiLorenzo, Tricia; Gilseth, Roshni; Berning, Melita	Exit Strategies
10:30 AM	4	Tham, Jason	The Usage and Implication of Social Networking Sites: A Survey of College Students

Session C-G **Economics I** **Granite**

Moderator Lynn MacDonald, Assistant Professor, Economics

Time	Index	Presenter(s)	Project Title
9:30 AM	1	Kummet, Brendan	Evaluating Players Through the NFL Combine
9:50 AM	2	Kunde, Lucas	Bankruptcy Rates
10:10 AM	3	Schroeder, Curt	Incentive to Win in NFL
10:30 AM	4	Biesanz, Eli	A Relation Between Military Expeditures And The Effects Upon Median Wages In A Global Community

Session C-GS **Sociology and Anthropology I** **Glacier South**

Moderator Rebecca Freilinger, Faculty, Sociology and Anthropology

Time	Index	Presenter(s)	Project Title
9:30 AM	1	Dammann, April	Comparing Biological Effects of Estrone (E1) and 17β-estradiol (E2) in Mature Fathead Minnows
9:50 AM	2	Nickolauson, Meghan	Resistance

10:10 AM	3	Dwyer, Cory; Vondal, Edward	Two Halves of Modern Capitalism: Haves and Have-Nots
10:30 AM	4	Norman, Jennifer	Identifying the Effects of Tree Throw on Soil Stratigraphy at the Wendt Site

Session C-VS Engineering I **Voyaguers South**

Moderator Michael Gorman, Assistant Professor, Learning Resources and Technology Services

Time	Index	Presenter(s)	Project Title
9:30 AM	1	Dangol, Prabal; Shrestha, Benam; Thapa, Milan	Design and Build of Small Battery Operated Scooter for Large Pipe Inspection
9:50 AM	2	Yuan, Cheng; Garimella, Sanjeet Chandra; Aryal, Nishant	Capacity Improvement of the Paint Line System at Bobcat
10:10 AM	3	Bhattarai, Sagar; Peterson, Yusan	Application of Information Technology Support System to Develop Automated Reports at Earthmoving Equipment Manufacturing Company
10:30 AM	4	Ravn, Kelle; Shrestha, Ritesh; Greene, Nicholas; Albrecht, Jacob; Mooney, Aaron; Thompson, Nicholas; Bekkala, Eldon	MME Senior Design FSAE Car

Session D-A Behavioral Studies **Alumni**

Moderator Scott Wells, Associate Professor, Communication Studies

Time	Index	Presenter(s)	Project Title
11:00 AM	1	King, Rachel; Muschler, Robert; Omot, Obuuy; Diedrichsen, Douglas	Management of Household Waste in Ghana
11:20 AM	2	Pratt Blenker, Julie; Rostomily, Katherine; Cody, Elizabeth	Affordable Senior Housing
11:40 AM	3	Tandon, Nikita	Impact of Information Technologies on Relational Communication in the Workplace
12:00 PM	4	Fonken, Gael	Transatlantic Perspectives on Cultural Sovereignty in MN: Staging Multilingual Conversations With Gerald Vizenor and Carme Riera
12:20 PM	5	Gahm, Noah	Compulsive Hoarding

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

Moderator Jodi Kuznia, Director, Office of Sponsored Programs

Time	Index	Presenter(s)	Project Title
11:00 AM	1	Schneider, Brent	Expression of Toxoplasma Gondii Cell Cycle Proteins
11:20 AM	2	DeSaer, Cassie	Effect of Carbamazepine on Planarian-Seizure Like Activity
11:40 AM	3	Rosier, Jessica	Geocaching as a Learning Tool in Minnesota's State Parks

Session D-G Economics II **Granite**

Moderator Lynn MacDonald, Assistant Professor, Economics

Time	Index	Presenter(s)	Project Title
11:00 AM	1	Bekele, Nazrawit	Women's Empowernment and Economic Growth
11:20 AM	2	Nash, Julie	Stadium Analysis, Comparing Domes to Outdoor Stadiums
11:40 AM	3	Selchow, Tracy	State Unemployment
12:00 PM	4	Nietz, Luke	Energy Consumption

Session D-GN Educational Policies and Systems **Glacier North**

Moderator Amy Fredin, Assistant Professor, Accounting

Time	Index	Presenter(s)	Project Title
11:00 AM	1	Liu, Xingcai	A Comparative Study of Faculty Evaluation in American and Chinese Universities: The Cases of St. Cloud State University and Hebei University of Technology
11:20 AM	2	Addington, Eric	Cost of Attendance and Cost of Living: An Examination of Minnesota's Private Institutions of Higher Education and Federal Financial Aid Policy
11:40 AM	3	Marmolejo Davis, Alvaro; Plachecki, Matthew	The Impact of the College Environment on the Gay Identity Development of Male Undergraduate Students at SCSU
12:00 PM	4	Slah, Gregory; Yusuf, Dirie	Closing the Achievement Gap

Session D-GS Behavioral Analysis I **Glacier South**

Moderator Chaturi Edrisinha, Assistant Professor, Community Psychology

Time	Index	Presenter(s)	Project Title
11:00 AM	1	Grunst, Samantha; Peterson, Abbie; Johnson, Clare; Suess, Channa; Ruegemer, Kayla	Hazardous Texting
11:20 AM	2	Baune, Kala; Williams, Amber; Cole, Tayler; Arbuckle, Ashly	Got Gym Germs?
11:40 AM	3	Bourgeois, Emily; Rassier, Sierra; Carlson, Jennifer; Knigge, Samantha; Feldewerd, Meghan	SCSU Where is the Love?
12:00 PM	4	Rauer, Reagan; Mueller, Brenda; Kathrein, Lacy; Dege, Lia; Zhang, Wei	Crosswalk Experiment
12:20 PM	5	Achtelik-Weber, Melissa; Kettler, Kathryn; Schmidt, Rebecca; Snell, Derick	Mental Imagery and Pitching for SCSU Baseball
12:40 PM	6	Warling-Spiegel, Ashley	Use of Stimulus Fading to Teach Generalization of Expressive Responding to Noun Sub-categories

Session D-O **Information Systems and Security I** **Oak**

Moderator Susantha Herath, Professor, Information Systems

Time	Index	Presenter(s)	Project Title
11:00 AM	1	Ray, Jonathan	Computer/Digital Forensics
11:20 AM	2	Khan, Aneeqa	Risk Assessment Analysis on E-Voting Systems
11:40 AM	3	Hettiarachchi, Charitha; Arthanayaka, Imali	E-Voting Properties and Its Issues

Session D-VN **Impact of Technology on Human Expression and Community** **Voyageurs North**

Moderator Susan Jordahl, Director, Continuing Studies/Science and Engineering/Business

Time	Index	Presenter(s)	Project Title
11:00 AM	1	Rhodes, Mark	Cultural and Political Geography
11:20 AM	2	Imholte, William	Letterpress Printing
12:00 PM	3	Meemaduma, Harith; Schirmacher, Adam; Johnson, Jason; Fliegelman, Leslie	Robotic Painting System

Session D-VS **Science and Engineering II** **Voyageurs South**

Moderator Yongli Zhao, Assistant Professor, Mechanical and Manufactuing Engineering

Time	Index	Presenter(s)	Project Title
11:00 AM	1	Dangol, Prabal; Hancock, Harrison	Application of Kaizen for Improvement of Weld Line for Landscape Rakes at Bobcat
11:20 AM	2	Vanam, Sharath Chandra; Matto, Saqib	Designing the Rack for Brackets at Bobcat
11:40 AM	3	Stalker, Sarah	Public Perceptions of the 10 May 2010 Oklahoma and the 17 June 2010 Minnesota Tornado Outbreaks
12:00 PM	4	Mawilmada, Prasad	Diffusion Dynamics of Hydrogels

Session E-C **Keynote Address: Research with an International Flair** **Cascade**

Moderator Ann Radwan, Associate Vice President, International Studies

Time	Index	Presenter(s)	Project Title
12:30 PM	1		Keynote Speaker: Brianda Cediel, Hands Across the World
1:30 PM	2		Reception

Session E-R **Looking Beyond The Notes: Music Research and Performance** **Ruth Gant Recital Hall, Rm 230, Performing Arts Center**

Moderator Terry Vermillion, Professor, Music

Time	Index	Presenter(s)	Project Title
12:30 PM	1	Huber Rodriguez, Courtney	Beethoven's "Appassionata Piano Sonata No. 23 in F Minor, Op. 57"

12:55 PM	2	Skogerboe, Inna	'Glass Prison: A Compositional Approach' a View of Electronic Music from a Compositional Aspect
1:20 PM	3	Bernard, Paul	Garage Drummer: Integration of Electronic Media and Percussion in Performance

Session F-A **St. Cloud Safety** **Alumni**

Moderator Sandrine Zerbib, Assistant Professor, Sociology and Anthropology

Time	Index	Presenter(s)	Project Title
2:00 PM	1	Pickens, Melissa; Henry, Karie; Holder, Molly; Shepard, Troy; Lucken, Natalie; Khat, James; Vondal, Edward	Attitudes and Effectiveness of Social Host Policy
2:20 PM	2	Peterson, Ryan; Savolainen, Rachel; Dwyer, Laura; Chen, Charlie	Perceptions of Safety on Campus
2:40 PM	3	Cuthbert, Zachary; Kremers, Stephanie; Cronk, Elizabeth; Smith, Michelle; Smith, Kathryn; Olson, Stepfanee	Safety Awareness on Campus: Looking at the 2011 Student Survey
3:00 PM	4	Pietsch, Kayla; Werner, Peter; Backlund, Nicolas; Zamfir, Alina	Students' Perception of Campus Safety at SCSU

Session F-G **Behavioral Analysis II** **Granite**

Moderator Chaturi Edrisinha, Assistant Professor, Community Psychology

Time	Index	Presenter(s)	Project Title
2:00 PM	1	Holt, Beckie; Burk, Sara; Stanton, Dexter; Hartwig, Elissa	A Song For You
2:20 PM	2	Berglund, Jessica; Stevenson, Tiara; Hardy, Jenna; Archambault, Tanya; Pinson, James; Sexton, Brian	Effects of Extra-Stimulus Prompts to Promote Respectful Computer Usage at SCSU
2:40 PM	3	Halonen, Daniel	An Experiment Evoking Thanks
3:00 PM	4	Kern, Noel; Hillyer, Jesse	Cigarette Experiment

Session F-GN **Higher Education** **Glacier North**

Moderator Gabriela Silvestre, Assistant Professor, Higher Education Administration

Time	Index	Presenter(s)	Project Title
2:00 PM	1	Ruhland, Gail	Past, Present, Future: Times of Change for Continuing Education
2:20 PM	2	Pham, Nguyen	Preferential Policies for Education: The Reality of Its Implementation and Impacts on Disadvantaged High School and University Students in An Giang Province
2:40 PM	3	Braun, Michele	Assessment Surveys of SCSU Doctoral Students' Persistence and Degree Obtainment
3:00 PM	4	Conteh, Lynn	Ethnic Minority Participation in Decision Making in HIED

STUDENT RESEARCH COLLOQUIUM PROGRAM

Session F-GS Social and Behavioral Studies I — **Glacier South**

Moderator Lewis Wixon, Professor, Geography

Time	Index	Presenter(s)	Project Title
2:00 PM	1	Shrestha, Rupak	Feminist Legacy in Geography: Case Study in the Role of Female Geographers in the History of St. Cloud State University Since Its Establishment as Third State Normal School in 1869
2:20 PM	2	Holm, Jenna	Threshold Population of Full-Time Fire Departments in the State of Minnesota
2:40 PM	3	Rogers, Dustin	Decrypting Password Protected Data For Use in Digital Forensics
3:00 PM	4	Thaung, Kyaw	Computer Forensic Investigation

Session F-O Modeling and Forecasting — **Oak**

Moderator David Robinson, Professor, English

Time	Index	Presenter(s)	Project Title
2:00 PM	1	Hardrath, Jacquelin; Bilben, Summer	Saint Cloud Judicial System Funnel
2:20 PM	2	Kunde, Kristopher; Witt, Taylor	Predicting the Number of Inmates in Stearns County Jail
2:40 PM	3	Zuluaga, Juan	A Comparison of Methods to Model Similarity Among Categorical Sequences
3:00 PM	4	Hollan, Michael	Forecasting Difficulties of the Severe Hail Outbreak in Southern North Dakota on 13-14 July 2010

Session F-VN Sociology and Anthropology II — **Voyageurs North**

Moderator Jiping Zuo, Professor, Sociology and Anthropology

Time	Index	Presenter(s)	Project Title
2:00 PM	1	Svare, Nathan; Gelormino, Kevin	Men's Groups and Movements Research Methods Paper
2:20 PM	2	Svare, Nathan; Gelormino, Kevin	Methods Research
2:40 PM	3	Rovanpera, Jennifer	Using Charcoal to Date the Lillian Joyce Archaeological Site
3:00 PM	4	Pickar, Michael	The Wedge of Symbolic Disruption: Negating the Sexual Either/Or

Session F-VS Engineering II — **Voyageurs South**

Moderator Hiral Shah, Assistant Professor, Mechanical and Manufacturing Engineering

Time	Index	Presenter(s)	Project Title
2:00 PM	1	Majji, Poojitha; Farooqi, Tahir; Agarwal, Ankit Vinodkuma	Cost Analysis of Cut to Length Blanks Process at Bobcat
2:20 PM	2	Madhavaram, Sudhir Rao; Mehta, Yash	A Study to Identify and Prioritize Employer Expectations for Graduate Program in Engineering Management

2:40 PM	3	Krone, Adam	Electric Car Chassis
3:00 PM	4	Ullah, ASM	Implementing Lean Principle in Manufacturing Environment to Increase Productivity

Session G-B **Poster Presentations II** **Ballroom**

Moderator Stuart Umberger, Assistant Director, Student Organizations and Leadership Development

Time	Index	Presenter(s)	Project Title
2:00 PM	1	Hoffarth, Samantha; Fiegen, Melissa; Johnson, Timothy; Carlstrom, Rebecca; Landwehr, Kimberly; Anderson, Erik; Olinger, Britta; Adkins, Jessica; Janckila, Jennifer; Koshiol, Andrea	Stearns County Chlamydia Report
2:00 PM	2	Haggstrom, Brady; Archer, Julie; Martinez-Schuldt, Ricardo; Kellar, Donald	SCSU Survey
2:00 PM	3	Omot, Obuuy; Diedrichsen, Douglas; Olund, Colton; Haider, Daniel; Demee, Jason	An Analysis of the Level of Service for Multi-modal Transportation Systems on the SCSU Campus
2:00 PM	4	Simon, Ashley; Petersen, Andrea; Pedersen, Melissa; Sapletal, Elisha; Theisen, Eric; Major, Katie; Skaja, Tracy; Hilsgen, Eric; Benson, Lisa; Jansky, Sarah	Physical Activity in Kandiyohi County
2:00 PM	5	DeSaer, Cassie; Nelson, Briegette	Inhibition of Planarian Paroxysms by Riluzole
2:00 PM	6	DeSaer, Cassie; Dalhoff, Zachary	Measurement of Glutamate and GABA in Planaria
2:00 PM	7	Pratt Blenker, Julie; Abdi, Mohamed; Belden, Christopher; Holmbeck, Elizabeth; Nesterenco, Tatiana	Analyzing Walkability Crossability of Downtown Neigborhoods
2:00 PM	8	Kharel, Subash	Crystallization of Muscle Fatty Acid Binding Protein With Non-stroidal Anti-inflammatory Drugs
2:00 PM	9	Johnson, Jenna; Rausch, Samantha	Cardiovascular Risk in Clients Age 30-64: Concepcion, Chile
2:00 PM	10	Ryan, Christine	The Movements of Small Mammals in an Experimentally Fragmented Landscape
2:00 PM	11	Janckila, Stacy; Maraweera-Hewage, Vishakha	Effect of JAK3 Mutation on Insulitis Development in a Mouse Model of Autoimmune Type 1 Diabetes
2:00 PM	12	Janckila, Jean; Hickerson, Aleisha; Guenigsman, Alyssa; Marketon, Kayla; Carlson, Nicholas; Ochs, Megan; Shir, Hannah; Omanwa, Valentine; Warren, Leah; Stensland, Hannah	Autism Spectrum Disorder and Comorbidities in Wright County
2:00 PM	13	King, Rachel; Othoudt, Aaron; Good, Katherine; O'Brien, Hugh; Lawler, Sean	Analyzing Factors Affecting the Auto Ownership of American Households Using NHTS.
2:00 PM	14	Kauffman, Seth; Hovelson, Johannes; Othoudt, Aaron	Energy Efficent Home Options
2:00 PM	15	Gucinski, Mark; Howe, Marie	The Development of a DNA Fingerprinting Method for Bacillus cereus

2:00 PM	16	Bjorkquist, Angelica; Metzger, Nathan; Mann, Shaynna; O'Neil, Ashley	Regulation of PGC1-beta
2:00 PM	17	Palmquist, Jennifer; Benn, Dana; Kiffmeyer, Krista; Klein, Jessica; Kalbakdalen, Jessica; Bowman, Jennifer; Omare, Jeniffer; Neugebauer, Andrea; Kampen, Gina; Hoikka, Karyn	A Community Assessment Regarding Home Visits by Public Health Nurses
2:00 PM	18	Lesteberg, Kelsey	Histological Examination of Sexual Differentiation in the Fathead Minnow
2:00 PM	19	Lesteberg, Kelsey; Voegele, Alan; VanBruggen, Andrew	Immunophenotyping of T-Cells in Type 1 Diabetic JAK3-Deficient Mice
2:00 PM	20	Veeramani, Viloshanakumaran; Rodriguez, Mario	Does Symmetry Equal Beauty?
2:00 PM	21	Hanson, Jamie	Restoring Minnesota Prairie Sites Dominated by Invasive Species via Successional Management Strategies
2:00 PM	22	Read, Jeremy	Product Testing for Microbiocidal Activity
2:00 PM	23	Hendrickson, Kathryn	Effects of Goniothalamin Derivatives on HT29 Colon Cancer Cells
2:00 PM	24	Shrestha, Shiva	Study of the Interaction of Ruthenium Benzimidazole Metal Complexes With DNA by Atomic Force Microscope (AFM)
2:00 PM	25	Rogers, Carrollyn	An Investigation of the Knowledge, Behaviors, and Beliefs of 10th Grade Biology Students on the Effects of Drilling for Oil in ANWR
2:00 PM	26	Carlson, Kelsey	Preserving Tradition within a Changing Homeland: Historiography, Cultural Identity and the Movement Patterns of the Bdewakantuwan Dakota
2:00 PM	27	Lohrman, Jessica	Characterization of Single Crystal Tetracene Derivatives
2:00 PM	28	Thorstensen, Andrea	Influence of Soil Type on Dry Down Patterns of the North Fork of the American River Basin
2:00 PM	29	Pedersen, Carin	Deforestation
2:00 PM	30	Holman, Whitney	Comparative Effectiveness of Treatment Schedules for Childhood Speech Sound Disorders
2:00 PM	31	Mandell, Matthew	Surface Modification and Characterization of Stabilities of Aspirin
2:00 PM	32	Davies, Andrew; Schulzetenberg, Aaron; Lee, Desiree	Lateral Field Time-of-Flight for Determination of Surface Charge Carrier Mobility
2:00 PM	33	Brethorst, Jason	Development of a Chemotherapeutic Agent Derived from the Natural Product Costunolide
2:00 PM	34	Alemu, Michael	Study of Proteins Involved in the Kinetoplast-Flagellum Connection in Trypanosoma Brucei via Tetracycline-induced RNA Interference
2:00 PM	35	Yuan, Cheng; Olsen, Cassandra; Robison, Rhea; Ludwig, Peter; Bhatta, Lalit	Hire Me!

2:00 PM	36	Adamski, Danielle	Determination of Bisphenol A in Various Samples Using a Microextraction Technique and High Performance Liquid Chromatography with Fluorescence Detection
2:00 PM	37	Dhungel, Abishek	Study of Anticancer Activities of Ruthenium-Benzimidiazole Metal Complexes Using Fluorometry
2:00 PM	38	Wegwerth, Sarah	Synthesis of a Novel Goniothalamin Analogue Designed to Deplete Intracellular GSH
2:00 PM	39	Schoepf, Jennifer	Effect of Signs of Safety on Child Protection Workers
2:00 PM	40	Chen, Jing; Yong, Shun Jie	Persistence of Vision Display and Uniform Circular Motion Demonstration
2:00 PM	42	McDonald, Lori	Analysis of Permian Strata in the Summit Springs Anticline of the Central Butte Mountains in Nevada
2:00 PM	43	Backer, Brian; Khadka, Manoj; Deuermeyer, Hank	Nanowire and Single Crystal Growth Techniques for Perylene Tetracarboxyl Diimide Derivatives
2:00 PM	44	Otteson, Spencer	Renewable Energies
2:00 PM	45	Harguth, Jacob; Workman, Michael	Using AFM to Track Changes in Surface Topography
2:00 PM	46	Kautz, Amber; Feldick, Ashley; Weber, Amanda	Stroop Effect And Cueing
2:00 PM	47	Compaore, Hassane	Phase Locked Loop

Session H-G **Social and Behavioral Studies II** **Granite**

Moderator Jan Kircher, Assistant Professor, Social Work

Time	Index	Presenter(s)	Project Title
3:30 PM	1	Post, Hannah	Technology in Technology Education
3:50 PM	2	Ohrt, Alix	Effects of Currency Unions On International Trade
4:10 PM	3	Kalayar, Chaw	The Role of Textbooks in Elementary Schools: Teacher and Student Perceptions

Session H-GN **Economics III** **Glacier North**

Moderator Patricia Hughes, Professor, Economics

Time	Index	Presenter(s)	Project Title
3:30 PM	1	Wilson, Michael	Effects of Household Debt on Household Durable Goods Consumption
3:50 PM	2	Smith, John	Race Matters
4:10 PM	3	Kingbay, Chad	Reducing Foreclosures
4:30 PM	4	Hansberger, Mark	Subscriptions and Redemptions vs the Economy

Session H-GS Computer Forensics **Glacier South**

Moderator Mark Schmidt, Professor, Information Systems

Time	Index	Presenter(s)	Project Title
3:30 PM	1	Sthapit, Sagun; Pradhan, Mandeep	I Know What You Did, Your Hard Drive Told Me
3:50 PM	2	Sundberg, Lawrence	Digital Forensics in the Real World: How They Busted the Most Notorious Cyber Criminal of Our Time
4:10 PM	3	Ullah, ASM	A Practical Approach to Computer Forensic Investigation
4:30 PM	4	Owusu, Eric; Tesfaye, Menna; Mubvumbi, Tinashe; Rai, Rashmi	Computer Forensics

Session H-O Fulbright Grants for Students **Oak**

Moderator Nichole Pazdernik, Director, Center for International Studies

Time	Index	Presenter(s)	Project Title
3:30 PM	1		Fulbright Grants for Students

Session H-VN Humanities **Voyageurs North**

Moderator Shumona Dasgupta, Assistant Professor, English

Time	Index	Presenter(s)	Project Title
3:30 PM	1	Winch, Joseph; Feder, Ashley	Parking System Analysis: Improving St. Cloud's Downtown Infrastructure
3:50 PM	2	DuMont, Suzanne	Somali Immigrant Families: Their Views and Practice of Literacy
4:10 PM	3	Suski, Alison	Women Artists and Models: Each End of an Artwork
4:30 PM	4	Bentley, Carol	Bloody Sunday: An Investigative Report

Session H-VS Biological Sciences **Voyageurs South**

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

Time	Index	Presenter(s)	Project Title
3:30 PM	1	Karschnik, Travis	Effects of Edges on Plant Communities in an Artificially Fragmented Landscape
3:50 PM	2	Leonard, Gerald	The Behavioral and Physiological Responses of Waterfall Climbing in Gobiid Fishes from Hawai'i
4:10 PM	3	Kharel, Subash; Kunwar, Yejur; Befikadu, Netsanet	The First Annotation of Glycine, Serine, and Threonine Metabolic Pathways in Planctomyces Limnophilus

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

Moderator Stuart Umberger, Assistant Director, Student Organizations and Leadership Development

Time	Index	Presenter(s)	Project Title
4:00 PM	1	Meemaduma, Harith; Schirmacher, Adam; Johnson, Jason; Fliegelman, Leslie	Robotic Painting System
4:00 PM	2	Edberg, Lucas; Hardrath, Jacquelin	Comparison of Dual Users from Two Frames with Cell Only Users and Landline Only Users
4:00 PM	3	Tran, Melissa; Mills, Serah	Induction of Toxoplasma Gondii Cell Cycle Fusion Proteins
4:00 PM	4	Lem, Wye; Fadlallah, Mohammed	Multiple Channel High-Speed and High-Resolution Analog Digital Converter for Shearwave Dispersion Ultrasound Vibrometry
4:00 PM	5	Street, Michael	A Census of the Subatomic Population (At a Trillion Degrees)
4:00 PM	6	Jennen, Scott	Mathematical Psychology
4:00 PM	7	Stahlback, Dustin; Liu, Liangnan	An Introduction to Pulse Oximetry Using the dsPIC Controller
4:00 PM	8	Casserly, Alexandra; Peterson, Nickolas	Understanding the Society We Live In and the Causes of Poverty
4:00 PM	9	Trosen, Lisa; Pitzl, Hayley; Sather, Lindsey	The Connection Between Domestic Violence and Animal Cruelty
4:00 PM	10	Sajid, Noureen; Khan, Niveen; Kanadji, Aboubacar; Chen, Xin	High Speed Circuit Design and Simulation
4:00 PM	11	Bloomquist, Katharine	Perceptions of Feminism
4:00 PM	12	Stacey, Kristen	Globalization: Sri Lanka and South Korea
4:00 PM	13	Shrestha, Raju; Ahlijah, Martin; Zhu, Chen	Comparison of Factors Affecting Retention of DGS and Non-DGS Students at SCSU
4:00 PM	14	Cuevas Ruiz, Carlos	Educational System for Ultrasound Imaging
4:00 PM	15	Nelson, Sean	The Effects of Implicit Theory Activation and Stereotype Threat Activation on Gender Differences in Mathematical Performance
4:00 PM	16	Olson, Dustin	Precambrian Influence on the Topography of West-Central Minnesota
4:00 PM	17	Frick, Tasha	Interest and Attitude in Chemistry: Do Different Instructional Strategies Have an Impact on Student Achievement?
4:00 PM	18	Gautam, Sabin; Karkee, Daniel; Karmacharya, Pratish	Ultrasound Pulser Unit
4:00 PM	19	Munsterman, Laura	Genetically Modified Crops
4:00 PM	20	Souna, Amanda	Environmental Literacy and Beliefs about Environmental Education in High School Chemistry Teachers in Minnesota

4:00 PM	21	Brisley, Justin; Vaidya, Ayushma; Abfalter, Nathan	Wireless Vital Sign Monitoring System
4:00 PM	22	Rose, Bradley; Wauna, Namukulwa	Effect of Galantimine on FAM Beta-amyloid (1-42) Aggregation: Investigations Using Spectrofluorimetry and Atomic Force Microscopy
4:00 PM	23	Rosenthal, Jeffrey	Using Petrologic Techniques to Determine the Composition and Economic Potential of a Carbonate-Dominated Breccia from the Rio Grande Rift in Central New Mexico
4:00 PM	24	Tchouetckea Tankoua, Romeo Blaise; Lee, Chong; Malchow, Jason	Remote Home Control System
4:00 PM	26	Dangol, Shreeja; Sambuu, Badral; Adhikari, Niranjan	Environmental Monitoring Device (EMD)
4:00 PM	27	Amala, Rebecca	Complex Chemical Equilibrium: An Expert-Novice Study
4:00 PM	28	Koehler, Lauren	Labeling Genetically Modified Foods
4:00 PM	29	Rijal, Shristi; Shrestha, Samridh; Dahal, Abhinav	Omni Directional Vehicle with Obstacle Avoidance and GPS Tracker
4:00 PM	30	Lucas, Madeleine	An Investigation into Knowledge, Beliefs, and Behaviors of High School Students on Animals and Zoos
4:00 PM	31	Tuladhar, Aayush; Atadjanov, Otabek; ALZmanan, Hamad	RFID Shopping System
4:00 PM	35	Vang, Tou; Kamga, Joseph Pascal; Schubert, Nicholas	Microgrid
4:00 PM	36	Sytsma, Cole; Frymark, Justin; Owens, Daniel	CAN Data Logger
4:00 PM	37	Pikus, Brendon	Bulk Viscosity and Expansion of Hot Nuclear Fluid
4:00 PM	38	Caird, Scott; Tschida, Jason; Youngers, Matthew	Design of an Automated Positioning System

Session J-A **First Year Service Learning Experiences** **Alumni**

Moderator Jodi Kuznia, Faculty, General Studies

Time	Index	Presenter(s)	Project Title
5:00 PM	1	Dahl, Casey; Robinson, Melvin; Roering, Christine; McKeever, Aubreanna; Harris, Wesley	Visiting CentraCare
5:20 PM	2	Sullivan, Jacob; Wassermann, Lisa; McKinney, Dustin; Munson, Gabriel; Cowell, Bobbie	CentraCare Service-Learning Project
5:40 PM	3	Colbert, David; Brown, Nicholas; Gordon, Trevor; Langlois, Corey; Omann, Johnathon	Service Learning at Centracare MN
6:00 PM	4	Kapus, Tyler; Ripka, Casey; Connelly, Ian; Bjornson, Josh; Stewart, Cornelius	CentraCare Volunteer Project

STUDENT RESEARCH COLLOQUIUM PROGRAM

Session J-GS **Information Systems and Security II** **Glacier South**

Moderator Mark Schmidt, Professor, Information Systems

Time	Index	Presenter(s)	Project Title
5:00 PM	1	Mubvumbi, Tinashe	Electronic Voting
5:20 PM	2	Forster, Antony	Have You Erased Your Electronic Data Properly?
5:40 PM	3	Hettiarachchi, Charitha; Arthanayaka, Imali	Importance of Computer Forensics Tools in Digital Forensics
6:00 PM	4	Condon, Michael	VM Computer Forensics

Session J-VN **Science and Engineering III** **Voyageurs North**

Moderator Mohammad Mahroof-Tahir, Professor, Chemistry

Time	Index	Presenter(s)	Project Title
5:00 PM	1	Feia, John; Bengtson, Neil; Helgeson, Grant	Automated Loader/Unloader for the E8 Blade Straightener
5:20 PM	2	Mecum, Ashley	How to Give a Hoot: Integrated Species Conservation of the Great Horned Owl
5:40 PM	3	Lanie, Jesse; Johnson, Jared; Moser, Adam	Adjustable Shear Die
6:00 PM	4	Jorgenson, Zachary	Comparison of Responses to 17β-Estradiol Exposure Between an Endangered Species and Two Model Species

Session J-VS **Philosophy** **Voyageurs South**

Moderator Susana Nuccetelli, Professor, Philosophy

Time	Index	Presenter(s)	Project Title
5:00 PM	1	Markeson, John; Bemis, Nathaniel; Nelson, Sean; Borgert-Spaniol, Matthew; Lordbock, Arthur; Glader, Andrew; Rannow, Caleb; Heltemes, Christopher; Prellwitz, Katherine	Where Do Moral Standards Come From?

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

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

Time	Index	Presenter(s)	Project Title
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, 2011. 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

Eleven 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.

A Song for You
- Sara Burk, Elissa Hartwig, Dexter Stanton

Are All Lake Habitats Equal? Effects of Endocrine Compounds From Non-point Sources on Sunfish*
- Beth Poganski

Bike Theft Experiment*
- Hilary Packer, Stefanie Peyton, Abby Savage, Amanda Stein

Bloody Sunday: An Investigative Report
- Carol Bentley

Does deficiency in the T-cell signaling protein, Jak3, affect the development of murine type 1 diabetes?*
- Cordelia Dunai

Effect of Carbamazepine on Planarian-Seizure Like Activity*
- Cassie DeSaer

Effects of Extra-Stimulus Prompts to Promote Respectful Computer Usage at SCSU
- Tanya Archambault, Jessica Berglund, Jenna Hardy, Brian Sexton, Tiara Stevenson

Exit Strategies*
- Melita Berning, Kyle CarlinSchauer, Tricia DiLorenzo, Roshni Gilseth, Kristen Masterson

Expression on Toxoplasma Gondii Cell Cycle Proteins*
- Brent Schneider

Geocaching as a Learning Tool in Minnesota's State Parks*
- Jessica Rosier

Got Gym Germs?
- Ashly Arbuckle, Kala Baune, Tayler Cole, Amber Williams

Hazardous Texting
- Samantha Grunst, Clare Johnson, Abbie Peterson, Kayla Ruegemer, Channa Suess

FORMAL PAPER COMPETITION

How to Give a Hoot: Integrated Species Conservation of the Great Horned Owl
- Ashley Mecum

Is there a difference in immune system involvement in murine autoimmune versus toxic type 1 diabetes?*
- Joseph Hobbs

Mental Imagery and Pitching for SCSU Baseball
- Melissa Achtelik-Weber, Kathryn Kettler, Rebecca Schmidt, Derick Snell

Public Perceptions of the 10 May 2010 Oklahoma and the 17 June 2010 Minnesota Tornado Outbreaks
- Sarah Stalker

SCSU Where is the Love?
- Emily Bourgeois, Jennifer Carlson, Meghan Feldewerd, Samantha Knigge, Sierra Rassier

Snatch and Run*
- Brittany Johnson, Chad Lanners, Alissa McDermeit, Lance Moberly, Taren Sandeen

Teaching a Child with Autism to Toothbrush*
- Chin Cheung Au

Technology in Technology Education
- Hannah Post

The Usage and Implication of Social Networking Sites: A Survey of College Students*
- Jason Tham

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 Comparison of Absolute and Relative Upper Body Power With Roller Ski-skating Performance
- Dennis Madden

An Analysis of the Modern Usage of One-Room Schoolhouses in Stearns County
- Anthony Grossman

Comparative Effectiveness of Treatment Schedules for Childhood Speech Sound Disorders
- Whitney Holman

Comparing Biological Effects of Estrone (E1) and 17β-estradiol (E2) in Mature Fathead Minnows
- April Dammann

Crystallization of Muscle Fatty Acid Binding Protein With Non-stroidal Anti-inflammatory Drugs
- Subash Kharel

Determination of Bisphenol A in Various Samples Using a Microextraction Technique and High Performance Liquid Chromatography with Fluorescence Detection
- Danielle Adamski

Development of a Chemotherapeutic Agent Derived from the Natural Product Costunolide
- Jason Brethorst

Diatoms: Modeling the Effects of High Flow Rate and Still Flow Rate on Orientation and Scouring of Stalk Forming Gomphonema and Cymbella from the Substrate
- Theresa Cacek

Diffusion Dynamics of Hydrogels
- Prasad Mawilmada

Effect of Jak3 Mutation on Insulitis Development in a Mouse Model of Autoimmune Type 1 Diabetes
- Stacy Janckila, Vishakha Maraweera-Hewage

Effect of Streptozotocin on the Proliferation and Cytokine Secretion of Mouse Splenocytes
- Anh Bui, Hwee Kiat Gong

Effect of Goniothalamin Derivatives on HT29 Colon Cancer Cells
- Kathryn Hendrickson

POSTER PRESENTATION COMPETITION

High Intensity Interval Training and 40km Time Trial Cycling
- Dennis Madden

Hire Me!
- Cassandra Olsen

Histological Examination of Sexual Differentiation in the Fathead Minnow
- Kelsey Lesteberg

Immunophenotyping of T-Cells in Type 1 Diabetic JAK3-Deficient Mice
- Kelsey Lesteberg, Alan Voegele

Influence of Block Angle on Take-off Velocity in Swim Starts
- Kathryn Kaufmann

Influence of Soil Type on Dry Down Patterns of the North Fork of the American River Basin
- Andrea Thorstensen

Inhibition of Planarian Paroxysms by Riluzole
- Cassie DeSaer, Briegette Nelson

Investigating the Biosynthetic Pathways of Cysteine and Methionine in Planctomyces Limnophilus
- Cordelia Dunai, Hwee Kiat Gong

Investigating the Inhibition of Bacterial Growth by Potassium Sorbate and Sodium Benzoate
- Kazeem Oyedele

Investigation of Sauk River Water and Sediment Quality
- Donald Granlund, Megan Grier, Robin Viestenz

Left Motor Cortex Interference in Relation to Cell Phone Use and Driving
- Genessa Sall

Monoclonal Screening for Salmonella Potency Assay Development
- Jennifer Williams

Persistence of Vision Display and Uniform Circular Motion Demonstration
- Jing Chen, Shun Jie Yong

Pre-Competition Hydration Status of High School Athletes Participating in Alpine Skiing
- Ashley Davenport, Chad Johnson

Preserving Tradition within a Changing Homeland: Historiography, Cultural Identity and the Movement Patterns of the Bdewakantuwan Dakota
- Kelsey Carlson

Restoring Minnesota Prairie Sites Dominated by Invasive Species via Successional Management Strategies
- Jamie Hanson

POSTER PRESENTATION COMPETITION

Sedimentary Lake Cores from Swamp Lake in Central Minnesota to Show Effects of Lake Level on Wild Rice

- June Sayers

Surface Modification and Characterization of Stabilities of Aspirin

- Matthew Mandell

Synthesis of a Novel Goniothalamin Analogue Designed to Deplete Intracellular GSH

- Sarah Wegwerth

The Big Woods of Wright County, Minnesota: Past, Present, and Future

- Travis Genty

The Development of a DNA Fingerprinting Method for Bacillus Cereus

- Mark Gucinski

Session A-C | **Paper Competition I** | **Cascade**

Are All Lake Habitats Equal? Effects of Endocrine Compounds From Non-point Sources on Sunfish

To better predict how estrogenic contaminants affect fish in different lake environments we identified microhabitats (with potential septic, urban, and agricultural inflow) within the lake that were likely to elicit different biological responses in fishes. Ground and surface water flow and associated land use of Sullivan Lake (MN) were evaluated at each microhabitat. To test our hypothesis that limnological differences within a lake will influence biological estrogenic responses we evaluated resident and caged bluegill sunfish. Biological endpoints of native and caged fish were assessed. In addition, we assessed morphological, molecular, and predator-avoidance behavioral endpoints of larval fathead minnows exposed to pore water from the ground-surface water interface. Estrogenicity of waters was also quantified in each microhabitat. Our results indicate that biological responses in bluegill sunfish and larval fathead minnows differed between microhabitats. Bluegill sunfish exposed to one septic influenced microhabitats showed a significant decrease in hepatosomatic index, while sunfish exposed to a septic and agricultural run-off sites were found to have significantly lower body condition indices, and vitellogenin concentrations were significantly lower in fish exposed to the septic influenced site. The data suggests that microhabitat characterization is useful in identifying non-point sources of endocrine active compounds. Funding by the Minnesota Pollution Control Agency.

Presentation Index: A-C 1 **Present Time:** 8:00 AM

Student Presenter(s):	Sponsor(s):	Department(s)
Poganski, Beth	Schoenfuss, Heiko	Biological Sciences

Teaching a Child with Autism to Toothbrush

In addition to deficits in social interaction and communication, many children with Autism also lack self-care skills. The purpose of the study was to evaluate the effects of an intervention package on tooth brushing as part of the bathroom routine for a 5 year-old child with Autism. The study took place in a bathroom at the participant's home, and trials were conducted three times every Monday and Wednesday from 4:00 to 7:00pm. The tooth brushing routine was broken down into a 30-step task analysis and the therapist recorded the number of steps that the participant was able to independently perform correctly in each trial. A changing criterion experimental design was chosen to assess the effects of the task analysis, forward chaining and the most-to-least intrusive prompting system on independent tooth brushing. During the baseline phase, the therapist recorded the number of steps that the participant was able to perform without the intervention package. When the treatment was introduced, the participant was first taught steps 1 to 5. When mastery criteria had been achieved in which the participant performed steps 1 to 5 independently for 3 consecutive trials, the therapist would move on to steps 6-8. This process was repeated for steps 9 to 12, 13 to 18, 19 to 20, 21 to 25 and 26 to 30. Data collection is still ongoing, but during the first two trials in the baseline phase, the participant was not able to perform any steps correctly in the task analysis. It is hypothesized that by following the task analysis and progressively mastering each criterion, the participant will eventually be able to complete all 30 steps in the tooth brushing routine correctly and independently.

Presentation Index: A-C 2 **Present Time:** 8:20 AM

Student Presenter(s):	Sponsor(s):	Department(s)
Au, Chin Cheung	Edrisinha, Chaturi	Educational Leadership and Community Psychology

Snatch and Run

We assessed if a bystander would intervene in the theft of a laptop. The participants were randomly selected and we used an ABAB design for this study. In the baseline session, a researcher would sit at a table in the library with his/her laptop for 10 minutes with the participant and make brief contact. Once ten minutes has elapsed, the researcher leaves the table for 8 minutes. Another researcher, posing as a thief, comes and steals the laptop at the 5th minute in the 8-minute interval. The researcher/victim returns once the 8-minute interval has elapsed. We recorded whether or not the participant intervened in the theft. In the treatment sessions we will place neon signs that display "Theft Notice" on the table prior to participant arrival. Once the participant is selected we will replicate the same procedure done in the baseline and record whether or not the participant intervenes. There will be a total of 20 sessions and 20 participants. We alternate between baseline and treatment every five sessions. During the baseline, we found that participants are not likely to intervene, but will inform the victim of the theft. We expect that participants will intervene in the theft once the signs have been placed on the tables.

Presentation Index: A-C 3 **Present Time:** 8:40 AM

Student Presenter(s):	Sponsor(s):	Department(s)
Moberly, Lance; Lanners, Chad; Sandeen, Taren; Johnson, Brittany; McDermeit, Alissa	Edrisinha, Chaturi	Educational Leadership and Community Psychology

Bike Theft Experiment

This study examined if people would intervene in the prevention of theft, or report bike theft if they witnessed it. We conducted the experiment using variables such as (DD) disguised dress (Identity is unclear to others), (RD) regular dress (Identity is clear to others), using a key to unlock the bike or using a cutter to break the chain, gender, and multiple bikes (thief would walk around the bike rack and look at other bikes before engaging in the theft). When performing the experiment the participant would drop the bike off at the designated bike rack, lock the bike to the rack with a chain, and walk inside. At which point the thief either male or female, in either RD or DD, using a key or cutter would remove the chain and steal the bike. Results showed a low frequency of reports. Out of the 25 sessions and 842 people who we recorded as witnesses only one person reported the theft to the proper authorities. Our observations show that the likelihood of someone reporting a bike theft is exceedingly low.

Presentation Index: A-C 4 **Present Time:** 9:00 AM

Student Presenter(s):	Sponsor(s):	Department(s)
Stein, Amanda; Peyton, Stefanie; Savage, Abby; Packer, Hilary	Edrisinha, Chaturi	Educational Leadership and Community Psychology

Session A-GN **Sociology** **Glacier North**

Queer Youth Community Organizing: Intents and Outcomes of Youth Mobilization in LGBTQ Service Programs

This exploratory case study provides an in-depth analysis of queer community organizing and the development of youth leadership within the LGBTQ (lesbian, gay, bisexual, transgender, and queer) community in Minneapolis, Minnesota. The aim of this research was to identify and analyze some failures and successes of two programs in Minneapolis dedicated to social justice and social service needs of LGBTQ youth in the metro area. An ethnographic research method was employed as a participant observer, through informal interviews, and through life history and in-depth interviews with directors, youth members, and collaborators of the two programs. This method allowed for the identification of challenges facing these LGBTQ service programs when attempting to create a 'by and for' model of queer youth activists within their organizations. Strategies used by adult allies to mobilize queer youth were examined to sociologically account for gaps between intentions and resulting undesired outcomes. Furthermore, an analysis was conducted in order to determine whether the strategies of these two programs coincide or diverge from those used by other LGBTQ youth service programs around the nation, and how this work fits into the progress of the broader LGBTQ movement.

Presentation Index: A-GN 1 **Present Time:** 8:00 AM

Student Presenter(s):	Sponsor(s):	Department(s)
Brown, Angela	Philion, Stephen	Sociology and Anthropology

Secular Mode, Sacred Message: How Contemporary Christian Musicians are Called by God to Perform

The growth of the contemporary Christian music industry has been phenomenal in the past century. The industry now takes in more revenue than that of classical or jazz and spans almost every musical genre. Along with this growth came the development of a new profession; the contemporary Christian musician. In this study, analysis of qualitative data reveals how, with the purpose of spreading the word of God, the contemporary Christian musician is utilizing various musical modes, or genres, to reach its listeners. To the contemporary Christian musician, playing music in this way is a form of worshiping God. This study provides insight into how the contemporary Christian musician understands his or her social actions in relation to the social institution of religion as well as the capitalistic system.

Presentation Index: A-GN 2 **Present Time:** 8:20 AM

Student Presenter(s):	Sponsor(s):	Department(s)
Lauritsen, Matthew	Philion, Stephen	Sociology and Anthropology

Surviving with Spirituality

Throughout time spirituality has taken on many forms. This study follows spirituality's transformation within the modern capitalist system by examining how members of Minnesota's Church of Scientology have come to understand their own spirituality. For my research I interviewed five Scientologists, visited two church services, practiced the ritual of auditing, received a personality test, and attended a fundraising event at the Minnesota Science Museum. I juxtaposed my findings with a historical analysis of the individualization of spirituality throughout 20th century America. The results of the study reveal that spirituality has been transformed into an operationally measured, individual-oriented product that businesses like Scientology sell to consumers. As consumers purchase this particular brand of spirituality they funnel religious beliefs into a social system that reinforces the ideology of the expanding capitalist, market-oriented system.

Presentation Index: A-GN 3 **Present Time:** 8:40 AM

Student Presenter(s):	Sponsor(s):	Department(s)
Revier, Kevin	Philion, Stephen	Sociology and Anthropology

The Role of Social Capital at the Winter Farmers' Market in the Lives and Livelihoods of Farmers

This is an exploratory qualitative study of the role social capital, that exists at winter farmers' markets, has in the lives and livelihoods of vendors who attend winter farmers' markets in rural Minnesota. The central idea researched necessitates asking two other questions: "What role do winter farmers' markets have in the lives and livelihoods of vendors?" and "What social capital exists primarily between the vendors that participate at rural winter farmers' markets?" Open-ended, semi-structured interviews were conducted with eleven vendors and managers of the farmers' markets during the winter of 2010-2011 and participant observation was conducted to capture interaction at two farmers' markets. Preliminary results show a medium degree of social capital at these farmers' markets which differs in amount due to the proximity of each vendor's residence and their community and the amount of competition for vendors at each farmers' market.

Presentation Index: A-GN 4 **Present Time:** 9:00 AM

Student Presenter(s):	Sponsor(s):	Department(s)
Phillips, Shaun	Finan, Ann-Marie	Sociology and Anthropology

Session A-GS **Historical Perspectives in Education and Gender Studies** **Glacier South**

How Masculinity Works to Oppress Men as Defined by Iris Marion Young's Five Faces of Oppression

In our society, there seems to be a general consensus that men have/do oppress women. One way in which we see the privilege that men have in our society over women is through the unequal pay that benefits men. Another way in which we see the privilege of masculinity is through the numerous amounts of rape that occur. This presentation looks to dive deeper into the privilege that men have in our society. Specifically, the points presented will analyze how masculinity works to oppress various types of men in our society utilizing Iris Marion Young's work on the Five Faces of Oppression.

Presentation Index: A-GS 1 **Present Time:** 8:00 AM

Student Presenter(s):	Sponsor(s):	Department(s)
Svare, Nathan	Berila, Elizabeth	Women's Studies

Theory of Men's Groups and Movements

Whether you were able to make it to the presentation on How Masculinity Works to Oppress Men as Defined by Iris Marion Young's Five Faces of Oppression or not, this presentation looks to compliment previous work done on masculinity. There is research that has been conducted to try to understand what masculinity is and how it operates in our society. There have been many influential men who have attempted to engage men in various organizations or movements to help them grow into productive members of society. Some of those influential men are Jackson Katz, who is an activist interested in preventing male violence, specifically male violence against women, and Robert Bly, who utilizes Jungian's work on archetypes in order to bring men together to find their deep masculinity roots. This presentation looks to understand the current men's movement through understanding the men's organizations that have emerged.

Presentation Index: A-GS 2 **Present Time:** 8:20 AM

Student Presenter(s):	Sponsor(s):	Department(s)
Svare, Nathan	Berila, Elizabeth	Women's Studies

Integrating Women Into the Teaching of Early 20th Century America

Many textbooks portray women as insignificant in early twentieth century American history. Textbooks often choose to leave women out completely or show a limited number of "significant" women such as Amelia Earhart and Gertrude Ederle, the first woman to swim across the English Channel. In this presentation the goal is to provide different examples of how to integrate women into teaching about American history during World War I up until the beginning of the Great Depression. By doing so, we will show women and their role during World War I, the Women's Suffrage movement, their role in Prohibition, and specific women that have had an impact on American history that are often left out of textbooks during this era.

Presentation Index: A-GS 3 **Present Time:** 8:40 AM

Student Presenter(s):	Sponsor(s):	Department(s)
Malchow, Bridgette; McClellan, Brianne	Galler, Robert	History

A Changing View of SCSU

St. Cloud State University has changed drastically over the course of its history. The university we see today little resembles the Third State Normal School, established in 1869 which prepared local students to teach in common (elementary) schools across Minnesota. Throughout the 1950s and 1960s the school went through extraordinary growth including an unparalleled expansion of the physical landscape. This involved structural growth and curriculum and institutional change, posing significant challenges to campus and the surrounding community. This project offers insight into how SCSU transformed from a teachers training school into a University offering hundreds of programs and degrees. The exhibit shows the rapid physical expansion caused by a steadily increasing and diversifying student body, and an exploration of the consequences of this change on the school and the community. The project includes display images, documents, graphs and excerpts from transcribed interviews to convey the rapid expansion from the 1940s and 1950s through the 1970s. The research took place in the archives and microfiche area of the Miller Center. The sources include: transcribed interviews from the 1980s and 1990s which regarded the campus and institutional transitions, perceptions of the school over time, and the relationship between campus and the city of St. Cloud; collections of Administrative Affairs files from the 1960s and 1970s; boxes from the Records of the President from 1950 to 1975; archon portal digital image and collections search; Minnesota Reflections website; and St. Cloud Daily Times articles from the 1930s to 1970s. The latter source provided popular opinion on expansion from outside the college community rather than relying on insular testimony and evidence from faculty members and students. Secondary sources, such as Micropolis in Transition, complemented and supplemented primary source-related research including the centennial history of the college and the 125 year anniversary history of the college.

Presentation Index: A-GS 4 **Present Time:** 9:00 AM

Student Presenter(s):	Sponsor(s):	Department(s)
Bialek, Marissa	O'Brien, Maureen	History

Session A-VS **Science and Engineering I** **Voyageurs South**

Research Solar Furnace with Tracking Heliostat

The goal of the project is to design and build a solar furnace. The furnace will be intended for use in a research environment for high temperature heating of small samples. The general form of the furnace consists of two main parts. One part is a stationary parabolic concentrator that focuses incoming light onto the sample to be heated. The other main part is a tracking heliostat that reflects the incoming light from the sun onto the stationary concentrator. The heliostat tracks the sun using the National Renewable Energy Laboratory's Solar Positioning Algorithm, a custom made Labview tracking program, and a pair of electric motors. The constructed prototype will be a scaled down version of a full sized practical furnace. It will function similar to a full sized furnace but at a lower level of performance.

Presentation Index: A-VS 1 **Present Time:** 8:00 AM

Student Presenter(s):	Sponsor(s):	Department(s)
Hancock, Harrison; Matto, Saqib	Miller, Kenneth	Mechanical and Manufacturing Engineering

Abiotic Influences On Estrogenic Biomarker Expression In Riverine Conditions Of Exposure To Treated Wastewater

Controlled laboratory exposures of fathead minnows to treated wastewater results in measurable changes to their reproductive behavior and physiology (biomarkers). A particular set of these compounds cause complex interactions with endocrine system and induce biomarkers of feminization (female characteristics in males). Biomarkers used in whole effluent toxicity testing indicate the degree of estrogenic compound contamination. These tests are commonly used not only for regulatory purposes, but to infer the potential impacts on natural populations residing in effluent contaminated streams. However, studies indicate that biotic stressors associated with lotic habitats, such as temperature, diet and flow-speed, may also play a role in the intensity of biomarker expression. These additional variables may interfere with the interpretation of biological consequences of exposure to treated wastewater. Our study attempted to elucidate potential sources of abiotic stressors that may change the expression of commonly measured biomarkers. Specifically, we compared biomarker results from parallel laboratory, in-stream caging, and intermediate type of flow-though exposures at five wastewater treatment facilities. The controlled laboratory method allowed for the regulation of water temperature, effluent dilution, flow-speed and diet. In-stream caged minnows were subjected to stressors associated with stream environments. Our intermediate method exposed fatheads to the same water as in-stream cages, but controlled flow-speed and diet while allowing for temperature variability. Fatheads were assessed for changes to morphology (secondary sex characteristics, liver and testes histology) and physiology (plasma vitellogenin induction) for any relationship to the method of exposure. Counter-intuitively, the controlled laboratory conditions produced the most variability in plasma vitellogenin induction among individuals in all treatments. This study may support the idea that environmental stressors experienced by individuals may reduce the availability of energy for the investment into reproductive physiology and behavior. Additional research is needed to understand the discrepancies found across laboratory and field settings.

Presentation Index: A-VS 2 **Present Time:** 8:20 AM

Student Presenter(s):	Sponsor(s):	Department(s)
Miller, Jeffrey	Schoenfuss, Heiko	Biological Sciences

Cooling Fan Braking System

Design and manufacture a brake system that will stop a 20ft diameter cooling tower fan. The design was chosen from few other designs using selection criteria such as manufacturability, performance, cost and installation. Few modifications were made to the original design to optimize the performance of the brake system.

Presentation Index: A-VS 3 **Present Time:** 8:40 AM

Student Presenter(s):	Sponsor(s):	Department(s)
Justin, Andrew; Peiris, Yoshan; Ramirez, Juan	Zhao, Yongli	Mechanical and Manufacturing Engineering

Forecasting Housing Bubbles

In 2005 housing prices peaked and the economy was booming, citizens felt wealthy and the economy was extremely healthy. Although there isn't an exact date it is thought that this roller coaster started falling in 2006 and 2007 some say it still hasn't hit bottom. A U.S. citizen's biggest asset is usually their house and they rely on the prices to keep steadily rising to create a comfortable retirement. Real estate generates over 28 percent of U.S. gross domestic product, creates jobs for nearly 9 million Americans, and is the source of nearly 70 percent of local government revenues. Because of this I would like to forecast housing bubbles.

Presentation Index: A-VS 4 **Present Time:** 9:00 AM

Student Presenter(s):	Sponsor(s):	Department(s)
Holtz, Bradley	Hughes, Patricia	Economics

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

Analysis of the Relationship Between Tornado Frequency and the Fujita Scale

Minnesota has experienced a measurable increase of tornadoes recorded by the National Oceanic and Atmospheric Administration (NOAA) from 1960-2009. This study is an analysis of Fujita classification by decade to illustrate trends. It is hypothesized that as there is an increase in tornado observations, the Fujita scale classification by decade will decrease.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Bauer, Andrew	Wixon, Lewis	Geography

The Effects of Burning and Herbicide Treatments on Spotted Knapweed (Centaurea maculosa)

Previous research has shown biological controls for invasive species are effective, but it takes several years to see results. Herbicides and mechanical controls have been studied and shown to work, but they can be costly and labor intensive. The best approach for controlling invasives has been an integrated approach. The purpose of this study is to test a combination of herbicide and burning treatments to help reduce the spread and control spotted knapweed (Centaurea maculosa). The burning treatments will use a catalyst of invasive free hay. The herbicide treatments will use Milestone, a chemical produced by DowAgro®. I expect that the combination of the burning and herbicide treatment will have the greatest reduction in post treatment percent cover when compared to the control. The burning only treatments will have higher post treatment percent cover when compared to the control. Once this study is complete, it will demonstrate a new integrated management strategy for spotted knapweed.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Einck, Alan	Arriagada, Jorge	Biological Sciences

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: B-B 3 **Present Time:** 9:00 AM

Student Presenter(s):	Sponsor(s):	Department(s)
Tabbert, Jacob	Krystyniak, Rebecca	Chemistry

The Big Woods of Wright County, Minnesota: Past, Present, and Future

The Maple-basswood ecosystem, known as the Big Woods, is a rare and fragmented natural community that encompassed over 2.2 million acres in south-central Minnesota prior to European settlement. The portion of the Big Woods located in Wright County, Minnesota is analyzed using the 1847-1907 Minnesota Public Land Survey (PLS) and current Minnesota Department of Natural Resources (DNR) data to determine where the natural forest remains. The vast majority of Wright County's remnant forests are located on private lands, but also within Lake Maria State Park, Mary Schmidt Crawford Woods Scientific and Natural Areas (SNAs), and numerous wildlife management areas (WMAs) and county parks. A Geographic Information System (GIS) is used to map and compare forest stands on unprotected private lands to those in the county's preserves. Park administrators and private owners were interviewed to determine threats to the remaining Maple-basswood ecosystems, what these remnants mean to their respective administrators, owners, or users, and what the future holds for the Big Woods in Wright County.

Presentation Index: B-B 4 **Present Time:** 9:00 AM

Student Presenter(s):	Sponsor(s):	Department(s)
Genty, Travis	Wixon, Lewis; Blinnikov, Mikhail	Geography

Investigating the Biosynthetic Pathways of Cysteine and Methionine in Planctomyces Limnophilus

Planctomyces limnophilus is a facultative aerobic chemoorganotroph which obtains carbon from carbohydrates and which can be isolated from various sources of freshwater. Planctomyces limnophilus are ovoid or spherical-shaped bacteria with optimal growth occurring at approximately 30 degrees Celsius and pH 6.2 to 7.0. Planctomyces limnophilus is a unique microorganism due to the fact that its cell walls do not contain peptidoglycan, it has one or more internal membranes, and it reproduces by budding. The species can live in harsh, nutrient-poor, fluctuating environments and probably plays an important role in nutrient cycling. The Planctomyces limnophilus genome sequence was completed in 2010, funded by the U.S. Department of Energy Joint Genome Program. Saint Cloud State University (SCSU) is part of a consortium of institutions that have set out to annotate the genome of Planctomyces limnophilus. SCSU has undertaken the responsibility of using comparative genomics to identify the amino acid biosynthetic pathways. Methionine and cysteine are sulfur-containing amino acids. Methionine is an essential amino acid present in some form in all proteins and is an intermediate in the biosynthesis of cysteine. Cysteine is a hydrophobic amino acid critical for forming the strong disulfide bridges of proteins, as are present in large amounts in the cell walls of Planctomyces limnophilus. We hypothesize that these amino acids have biosynthetic pathways in Planctomyces limnophilus 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 5 **Present Time:** 9:00 AM

Student Presenter(s):	Sponsor(s):	Department(s)
Dunai, Cordelia; Nieland, Nicole; Gong, Hwee Kiat	Kvaal, Christopher	Biological Sciences

Effect of Streptozotocin on the Proliferation and Cytokine Secretion of Mouse Splenocytes

Type 1 Diabetes Mellitus (T1D) is an autoimmune disorder that results from destruction of insulin-producing pancreatic beta cells by auto reactive T cells. In the experimental mouse model, autoimmune T cell-dependent T1D can be induced by streptozotocin (STZ) injected in low-doses (LDSTZ model). In contrast, one high dose of STZ (HDSTZ model) directly destructs beta cells, inducing toxic T1D. Different subtypes of T cells secrete different cytokines. It is believed that IL-2, IFN-? (secreted by Th1 cells), and IL-17 (secreted by Th17 cells) exhibit diabetogenic effect, in contrast to protective effects of IL-4 and IL-10 (secreted by Th2 and Treg cells). In this study, we asked whether cytokines, secreted from cells obtained from LDSTZ- and HDSTZ-treated mice, would reflect different nature of those two models of T1D. C57BL/6J male mice were injected with either multiple low-doses, or a single high-dose of STZ. Proliferative capacity of T cells was evaluated post addition of mitogen Concanavalin A to a culture of splenocytes (Alamar Blue assay). Cytokine analysis was performed using Th1/Th2/Th17 cytokine kit (BD Biosciences). Our preliminary results showed different cytokine profiles of T cells, obtained from the spleens of LDSTZ- and HDSTZ-treated mice. Decreased IFN-gamma, IL-6, IL-2 and IL-17, with increased IL-10, were found during the first 7 days in LDSTZ-, while no changes in cytokine profiles were observed in HDSTZ-treated mice. However, increased Th1-, with decreased Th2-/Treg-type cytokines, were not observed in LDSTZ-treated mice. Overall, our data confirmed immune system involvement in LDSTZ, but not HDSTZ model of T1D.

Presentation Index: B-B 6 **Present Time:** 9:00 AM

Student Presenter(s):	Sponsor(s):	Department(s)
Gong, Hwee Kiat; Bui, Anh; Lee, Yong Heng	Cetkovic-Cvrlje, Marina	Biological Sciences

Autonomous Tracking Security System

Due to surveillance systems of today being quite expensive compared to their actual specifications, a camera system that can break down these barriers can be a significant achievement. These barriers include, but are not limited to: poor quality in terms of resolution of the video, frame rate, and lack of color, lack of movement to track subjects leaving the frame, the inability to work in low light or no light at all, and the fact that many of these systems cannot be transported easily. A system that directly targets these inabilities would be an essential addition to security in general. A key theory used in this project for tracking movement is the taking in of the first video frame and comparing it to the sequential frames. What things have changed in the frame can be thought of "moving objects" and can be seen as what needs to be tracked. This thought is an essential concept to autonomous tracking.

Presentation Index: B-B 7 **Present Time:** 9:00 AM

Student Presenter(s):	Sponsor(s):	Department(s)
Bertilson, Zechariah; Rumpca, Justin; Kunkel, Arin	Petzold, Mark	Electrical and Computer Engineering

An Analysis of the Modern Usage of One-Room Schoolhouses in Stearns County

In the first half of the 20th century, one-room schoolhouses were prevalent throughout the United States. This study analyzes the contemporary use of the surviving one-room schoolhouses in Stearns County, Minnesota. This research includes a visual inventory of the existing one-room schoolhouses in Stearns County from the United States Geological Survey (USGS) 1:24,000 topographic maps. This photographic summary afforded the classification into categories, with residential being the dominant category.

Presentation Index: B-B 8 **Present Time:** 9:00 AM

Student Presenter(s):	Sponsor(s):	Department(s)
Grossman, Anthony	Wixon, Lewis	Geography

A Comparison of Absolute and Relative Upper Body Power With Roller Ski-skating Performance

The purpose of this project is to determine whether relative upper body power (UPB) is a better predictor of roller ski-skating trial time than absolute UPB. Eight Division II female skiers (age: 19.9 + 1.4 years, height: 1.71 + 0.04 m, weight: 63.1 + 5.2 kg,) with 7.9+ 4.2 years of competitive experience performed a 10 km roller ski-skating time trial. A 1 km UBP test was performed using subject-selected cadence and resistance with a Concept 2 double-poling upper body ergometer. A correlation was calculated between each power and roller ski-skating trial time. The 10 km roller ski-skating time trial (MEAN + SD; 30:37 + 2:25 minutes) was significantly correlated with relative UBP (2.1 + 0.34 W/kg); (r=0.84). Absolute UBP (132.8 + 31.3 W) was also significantly correlated with the time trial performance (r=0.74). Relative UBP is a stronger predictor of 10 km roller ski-skating time trial performance than absolute UBP in Division II female skiers.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Madden, Dennis; Wright, Eric	Bacharach, David	Health, Physical Education, Recreation and Sport Science

High Intensity Interval Training and 40km Time Trial Cycling

High Intensity Training (HIT) has been successfully utilized by endurance athletes to improve performance. The physiological improvements to such training have been well documented. However, some studies show improvements in highly adapted cyclists that occur within a few HIT sessions that may not fit the time course of physiological adaptations. Perhaps initial improvements are made through an altered perception of effort brought out by sessions that occur at higher than usual intensities, and are reflected in a beneficial change in subconscious pacing strategies. The purpose of this study is to examine that effects of a single HIT session on power output, rating of perceived exertion (RPE), oxygen consumption, and blood lactate levels between two 40km indoor bicycle time trials. 15 club level cyclists will perform 4 sessions with 48 hours of rest between each one. On day one, anthropometric data will be collected and subjects will perform a VO2 max graded exercise test. Over the next week, subjects will perform a pre and post HIT session 40km TT. The true nature of the study and timeline will not be revealed to the subjects to prevent bias in performance efforts. Pilot testing is currently underway to refine the procedure. Early testing confirmed the graded test protocol as well as the necessary rest between testing sessions. Final data will be collected and analyzed for the SRC.

Presentation Index: B-B 10 **Present Time:** 9:00 AM

Student Presenter(s):	Sponsor(s):	Department(s)
Madden, Dennis	Bacharach, David	Health, Physical Education, Recreation and Sport Science

Amateur Baseball Team Names

This research examines amateur baseball team names in the state of Minnesota. The study looks at amateur baseball team names in metropolitan areas vs. non-metropolitan areas. The research identifies categorical trends in team names in 2011, specifically looking at team names based on indigenous influences. Primary data is collected from the Minnesota Baseball Association website and is analyzed to determine these differences. It is hypothesized that there is a categorical difference in team names in both metropolitan and non-metropolitan areas in Minnesota amateur baseball.

Presentation Index: B-B 11 **Present Time:** 9:00 AM

Student Presenter(s):	Sponsor(s):	Department(s)
Knudson, Tyler	Wixon, Lewis	Geography

Cultural-Linguistic Diversity Trends in Speech-Language Pathologists' Caseloads

Increasing numbers of culturally and linguistically diverse (CLD) clientele are on speech-language pathologists' (SLPs') caseloads due to changing population demographics. SLPs need to meet the unique needs of these clients for optimal service delivery. Previous research suggests SLPs encounter challenges in language barriers, interpreter issues, appropriate assessment and treatment materials, and family/cultural dynamics when working with CLD clientele. Little research has been conducted on past changes and expected future changes in professional practice regarding CLD clientele. Further exploration in identifying challenges that SLPs face due to increasing numbers of CLD clientele also merits examination. The purposes of this study were to discover (1) what changes have or will occur with CLD clientele over time, (2) what challenges SLPs face when providing services to CLD clientele, and (3) what recommendations do practicing SLPs have for future SLPs regarding CLD clientele. Participants included 30 Minnesota-based SLPs, all working clinically with one to 35 years work experience. All participants were Caucasian and spoke American English as their native language. Participants worked in educational (73%) and medical settings (27%). The participants answered a series of open-ended interview questions and completed survey questions focusing on the trends and challenges encountered in their work with CLD clientele. Results suggest many SLPs have experienced additional numbers of CLD clientele along with particular challenges in increased time demands to adequately meet client needs. Other challenges cited by these SLPs match findings from previous research. Specific skills that will be needed for future SLPs include flexibility, learning another language, and optimizing resources.

Presentation Index: B-B 12 **Present Time:** 9:00 AM

Student Presenter(s):	Sponsor(s):	Department(s)
Primus, Kelsi; Gruber, Tiffany; Current, Meghan; LeBlanc, Laura; Markgraf, Jessica	Whites, Margery	Communication Sciences and Disorders

Diffusion Dynamics of Hydrogels

Hydrogels are soft materials and are widely used for various applications such as soft contact lenses, pills/capsules , bioadhesive carriers, implant coatings and wound healing. Hydrogel comprises of a network of polymer chains synthesized from hydrophilic monomers. Due to the hydrophilic nature, these monomers swell in presence of polar solvents like water. The main objective of our research is to investigate hydrogels made from acrylic aicd/N-isopropyl acrylamide as a drug delivery sytem. Preliminary research to understand the effect of composition/cross-link density on the kinetics of swelling showed that 10% W/V solutions of monomers , 1% W/V solution of initiator and 10% W/V solution of cross link are the ideal concentrations for hydrogels that has fast respons time (swell within 30 minutes). The swelling is dependent on pH: fluorescence studies with fluorescein indicates that the hydrogel matrix swells more in acidic and neutral pH and the swelling is reduced at high pH. The swelling kinetics are related to the microstructure of polymer as determined from scanning electron microscope.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Mawilmada, Prasad	Sivaprakasam, Kannan	Chemistry

Endocrine Disruptors and Waste Water Treatment Plants in the Chicago Area

In this study, the effects of endocrine disrupting compounds on sunfish were assessed. These endocrine disrupting compounds contaminate waterways via release of treated waste water effluent. The study examined four different waterways in the urban area of Chicago, Illinois (Salt Creek, North Shore Channel, Sanitary Ship Canal, and the Cal-Sag Channel) all with Waste Water Treatment Plants (WWTP) discharging into them. Caged sunfish were placed in three locations on each waterway; upstream and downstream of the WWTP, and at the WWTP effluent site. There was also another cage located where the four waterways converge. Water samples were taken regularly from locations and tested for the presence of endocrine disrupting chemicals. Once the fish were collected, measurements were taken, fish were dissected, and tissue samples were collected for histological processing. The concentration of vitellogenin in the plasma of these fish was determined. Furthermore, livers and gonads of all fish were prepared for histology and assessed for pathological changes consistent with the exposure to endocrine active compounds.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Meyer, Danielle	Schoenfuss, Heiko	Biological Sciences

Research in Metacognition

The purpose of this study is to investigate if students using deeper metacognitive processing, on account of explanation prompts or scaffolded explanation prompts, will exhibit higher learning gains than students who are not prompted to explain their answers to problem sets. This pretest-posttest control group design with random assignment involves student participants attending optional TA Activity Learning Sessions outside of class which are held for a chance to earn extra credit. Data will be gathered from participants through the following: a pretest will be administered on D2L, a demographic questionnaire will be filled out and questions sets will be completed at the TA Activity Learning Sessions, chapter quizzes will be administered in class, and a posttest will be administered at the end of the semester (also in class). I believe that when students are prompted to explain their answers, it will result in a better understanding of the subject material. Further, I believe the student participants will have an even better understanding when given a scaffolded explanation. In this study, I believe that the overall long-term retention of the subject matter (DV) will/should be dependent upon the group that the student participant is in: no explanation prompt (control), explanation prompt, or scaffolded explanation prompt (IV). The significance of this study is that if the results show prompts, of any kind, have a positive impact on students overall learning and retention of subject matter, this can and should be looked at further to consider more use in the classroom.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Meyer, Danielle	Bodvarsson, Mary	Psychology

Groundwater Contamination in Stearns County

In Stearns County aquifers provide most of the residential water needs with exclusion of St. Cloud. There is evidence that contaminants vary by type and location. This study investigates the spatial pattern of the type and frequency of contaminants in Stearns County related to the cost of treatment. An analysis of the geologic influence of Stearns County is presented as related to percolation depth and its influence on water quality on a seasonal basis.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Pratt, Kevin	Wixon, Lewis	Geography

Histidine Metabolism in Plantomyces Limnophilus DSM 3776

Plantomyces limnophilus DSM 3776 is a marine bacterium; a member of the order Planctomycetales. It has been isolated from aquatic habitats (fresh and hypersaline water) and has been observed to live in many different types of habitats including compost drainage and cattle manure. Plantomyces is spherical or pear-shaped cell with crateriform surface structure, which multiply by forming a bud. It is unique bacterium due to the presence of a membrane bounded nuclear body, 5s rRNA containing only 109-111 nucleotide bases, and lack of peptidoglycan. Despite their unique properties, Plantomyces is not well characterized genetically. Using restriction enzyme digest the size of genome has been approximated to be 5.204MB. Saint Cloud State University has undertaken the responsibility of using comparative genomics to identify the amino acid biosynthetic pathways. Histidine, an essential amino acid, has as a positively charged imidazole functional group. The imidazole makes it a common participant in enzyme catalyzed reactions. We hypothesize that this amino acid has a biosynthetic pathway in Plantomyces limnophilus, and that we will be able to identify the genes responsible for the synthesis of this amino acid using a comparative genomics approach.

Presentation Index: B-B 17 **Present Time:** 9:00 AM

Student Presenter(s):	Sponsor(s):	Department(s)
Belay, Mikiyas; Williams, Jennifer; Thapa, Meen	Kvaal, Christopher	Biological Sciences

Monoclonal Screening for Salmonella Potency Assay Development

Salmonella is a major pathogen of cattle which causes detrimental effects on herd health and milk production in the dairy industry. Currently, the treatment options for food producing animals is limited, and the recent development of multidrug resistance Salmonella spp. has exhausted approved treatment options, making a preventive vaccination strategy favorable. Epitopix, LLC. has developed, licensed and manufactures a Salmonella Newport Bacterial Extract vaccine for this purpose. This product is currently conditionally licensed by the USDA. For the vaccine to attain full licensure, a test must be developed to measure the relative potency of each new vaccine serial against a standard reference serial (immunoserial). The ultimate goal is to develop a double-antibody sandwich ELISA using a murine generated monoclonal antibody to determine the relative potency of the final vaccine product. The objective of this project was to develop and screen potential murine derived monoclonal antibodies for use in the double-antibody ELISA assay.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Williams, Jennifer	Cetkovic-Cvrlje, Marina	Biological Sciences

Speech-Language Pathologists' Perceptions and Understanding of Cultural-Linguistic Diversity

Due to changing population demographics in the United States, speech-language pathologists (SLPs) need to demonstrate cultural competence in order to best serve their clients. The American Speech-Language-Hearing Association (ASHA) describes cultural competence as a continuum of attitudes and behaviors relative to cultural and linguistic differences. This study sought to determine: (1) how SLPs view cultural diversity and cultural competence, (2) the cultural variables SLPs recognize about their own and other cultures, and (3) how SLPs have grown clinically by working with culturally and linguistically diverse (CLD) clientele. Participants included 30 SLPs currently employed in Minnesota educational or medical settings; all identified with the Euro-North American culture. Participants were interviewed and surveyed regarding their cultural perspectives and their experiences working with CLD clients. Results suggest SLPs' awareness of numerous cultural dimensions affecting their practice. Many indicated personal clinical growth resulting from working with CLD clientele. Many felt they understood their own culture better than the culture of their clients, although they reported a range of answers while rating their own culture. Changing population demographics requires SLPs to continue building awareness of diversity issues impacting service delivery.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Huang, Chunyang; Reichert, Senn; Dundore, Jessica; Goltz, Wendy; Perry, Alissa	Whites, Margery	Communication Sciences and Disorders

Investigating the Inhibition of Bacterial Growth by Potassium Sorbate and Sodium Benzoate

The purpose of this study was to determine the inhibitory concentration of potassium sorbate and sodium benzoate necessary to prevent microbial growth. These two compounds were utilized because they are commonly used as food preservatives. A total of 7 bacteria were cultured for this study. They were: Staphylococcus epidermidis, Escherichia coli, Proteus mirabilis, Bacillus megaterium, Kocuria rhizophila, Klebsiella pneumoniae and Enterococcus faecalis. All the bacteria were streaked on a nutrient agar plate and then cultured in a Luria-Bertaini broth at 37 °C for 48 hours. Sodium benzoate and potassium sorbate were prepared by making dilutions of these compounds at different concentrations in 100 mL water with nutrient broth included. The broth provided nutrients necessary for microbial growth and the potassium sorbate and sodium benzoate solutions at varying concentrations would inhibit microbial growth. All the solutions were sterilized in an autoclave before the addition of bacteria. About 0.1 mL of each microorganism was put in test tubes containing 5 mL nutrient agar and potassium sorbate or sodium benzoate solution each. These test tubes were incubated for 72 hours at 37 °C. It was observed that potassium sorbate completely inhibited the growth of K. pneumonia at all concentrations, but was not successful in inhibiting the growth of the other bacteria except at very high concentrations. Sodium benzoate was able to successfully inhibit bacterial growth at low concentrations of about 1.0% w/v. E. faecalis was the only bacterium that was not inhibited by any of the compounds at all concentrations tested. This signifies how much of a problem it could be if it found its way into the food system. Another conclusion derived is that sodium benzoate is effective in preventing bacterial growth.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Oyedele, Kazeem	Schrank, Gordon	Biological Sciences

Diatoms: Modeling the Effects of High Flow Rate and Still Flow Rate on Orientation and Scouring of Stalk Forming Gomphonema and Cymbella from the Substrate

Diatoms are unicellular, eukaryotic organisms that live in most aquatic environments. To date, approximately 24,000 – 25,000 species have been identified with an estimated 200,000 species total in all environments. Diatoms are of special ecological significance for several reasons, not the least of which is its ability to sequester carbon dioxide. Through photosynthesis, diatoms are responsible for 40% of all carbon dioxide sequestered by aquatic organisms. In addition, diatoms are being used in nanotechnology, forensics, gas and oil exploration, and have industrial uses (abrasives and filters). Until recent years, the study of diatoms has primarily been in the area of identification and examining their assemblages in various types of aquatic environments. But of consequence for this investigation, are diatom's worth as a preferred food source of many aquatic organisms due to their high lipid content. It is known that diatoms and their assemblages are affected by characteristics of water quality such as nutrient load, availability of light, pH, salinity, temperature, and water movement. However, as humans continue to change the flow rates in rivers and streams and thus their hydrologic forces, studies of how these forces affect diatom ecology will be of significance. There are 2 research questions I wish to investigate for this project. The first question is: "Are the benthic (living at the bottom of a body of water where light can reach photosynthetic organisms) stalk forming diatoms Cymbella (a "crescent" shaped diatom) and Gomphonema (a "coke bottle" shaped diatom) scoured from the substrate at the predicted rate of flow?" The second question is "Do prostrate diatoms change their orientation in the direction of flow?"

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

Student Presenter(s):	Sponsor(s):	Department(s)
Cacek, Theresa	Julius, Matthew	Biological Sciences

Solar Powered Pontoon Boat

The purpose of this project is to design and construct an electric pontoon boat that is capable of being charged through solar energy as well as from the grid. The boat will be driven by a series wound brushed DC motors that will be controlled by the user interface and drive electronics. This motor will be powered by four 12 volt lead acid batteries that will be charged from either the grid using an on board smart charger, or solar panels. The voltage supplied by the solar panels will be regulated using a maximum power point tracker (MPPT). The subsystems that will be designed by the team are the smart charger, drive electronics, and user interface while the others will be purchased.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Berling, Gregory; Meemken, Kelly; Kruse, Alexander	Glazos, Michael	Electrical and Computer Engineering

Expert/Novice Study of Percent Yield

Student Perception of Error in Calculating Percent Yield Literature on chemistry education suggests that chemistry problems don't often require students to have a deep understanding of topics to get the answer. Many techniques to solve problems exist and differences occur between experts and novices in chemistry. This study investigates chemistry student's problem solving skills in calculating a chemistry percent yield problem as well as an expert. It also looks into the level of understanding chemistry students have of percent yield. Collected data will provide insight into the thought processes of chemistry students while working on percent yield calculations. From this, the level of student understanding can be inferred. The results of the investigation can be used for further research or to make recommendations in how problem solving is taught in chemistry classrooms.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Waddell, Abby	Krystyniak, Rebecca	Chemistry

Speech-Language Pathologists' Diversity Focused Training and Resources

Appropriate assessment and intervention strategies for culturally and linguistically diverse (CLD) clientele is a topic of interest to speech-language pathologists (SLPs) due to increasing numbers of CLD clients on caseloads. What is not clear is what type of training and resources SLPs utilize or have at their disposal. This study sought to answer the following questions: what education and training have SLPs received during university level education and beyond regarding CLD populations; and what assessment, intervention, and educational resources regarding CLD populations are available to SLPs? Thirty randomly-selected SLPs, all working clinically with one to 35 years of experience in the field, participated in this study. All were Caucasian whose first language was American English and who lived in Minnesota. Interview questions were open-ended while the survey consisted of statements with 1–5 Likert-scale responses, multiple choice, or ranking questions. Results suggest SLPs are attempting to stay current and many indicate their employers are adapting to growing diversity. Despite some limitations with appropriate materials, SLPs are resourceful in adapting those they have available. SLPs expressed some uncertainty in their clinical competence possibly due to current availability of university coursework and utilization of continuing education opportunities regarding CLD clientele.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Van Den Einde, Jessica; Lindenfelser, Kali; Siewert, Breann; Vandenberghe, Amber	Whites, Margery	Communication Sciences and Disorders

Students' Understanding of Equilibrium

Chemistry instruction is often conducted at the symbolic level of matter, and student learning is commonly assessed with mathematical-based questions. Contrary to these methods, research indicates that students have difficulties understanding the relationships between macroscopic, symbolic and submicroscopic levels of matter, and that solving numerical problems does not assure conceptual understanding of a natural phenomena. This study examines students' conceptions of equilibrium at the submicroscopic level as a function of knowledge-level in chemistry, and how students' conceptions differ from conceptions held by chemistry experts. Conceptual understanding of equilibrium at the submicroscopic level is important for learning of advanced chemistry concepts like the common ion effect, and the augmentation of solubility by ionic strengths and formation of complex ions.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Grosz, Danielle	Krystyniak, Rebecca	Chemistry

All-Terrain Robotic Device

This project encompasses the design and implementation of an All-Terrain Robotic Device. The device will be used to semi-autonomously traverse a river's ice pack. The chassis, waterproofing, and tread design are a few of the mechanical engineering aspects of this project. The navigation, user interface, and obstacle recognition and avoidance are a few of the electrical engineering aspects of this project. Interdisciplinary aspects of the project include the drive mechanisms, power supply system, and integration of the various components. The robot will be used by the Earth and Atmospheric Sciences (EAS) department to gather river discharge data. The robot will traverse a river's ice pack and measure the river flow during the winter months when it is dangerous for a person to perform this task. It must be able to cross rough terrain without getting stuck or damaging the equipment it carries. The device will have a water resistant design that will protect the valuable equipment on-board in case it breaks through the ice, as well as a mechanism to extract itself from this hole without human interaction. When all of the objectives are met, the EAS department will gain a very useful and valuable tool with the capability of measuring river discharge.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Notch, Patrick; Friebel, Nicholas; Eha, Alexander; Hancock, Patrick; McElwain, Eli	Fedele, Juan; Petzold, Mark; Covey, Steven	Earth and Atmospheric Sciences, Electrical and Computer Engineering, Mechanical and Manufacturing Engineering

Sedimentary Lake Cores from Swamp Lake in Central Minnesota to Show Effects of Lake Level on Wild Rice

Wild rice (Zizania palustris) is a sacred food to the Ojibwe people. One of the oral stories tells that the home of the Ojibwe people would be known when they find food that floats on water. This sacred food, called manoomin, by the Ojibwe, needs to be protected. Human disruption of the natural ecosystem may cause an adverse reaction for the wild rice production. Lake level variations may be caused by dams downstream of the drainage of a lake. Three sediment lake cores were extracted from Swamp Lake near Glen, Minnesota. The sediment in the cores is expected to show various indicators of the age of the lake, what kind of biological life it has sustained, wild rice fossils, and lake level variation. Wild rice should grow well throughout Swamp Lake due to the overall low lake level. Wild rice requires a small range of water level in order for it to thrive. Swamp Lake is a wild rice lake drained by Dam Brook, located on the southwest corner of the lake. The Mille Lacs Band of Ojibwe Indian Reservation borders on the southeast and central part of the lake.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Sayers, June	Fedele, Juan	Earth and Atmospheric Sciences

Investigation of Sauk River Water and Sediment Quality

The degradation of water quality due to anthropogenic activity is destroying both recreational and natural values of waterways worldwide. Fertilizers used in both 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 wastes 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 loss of biodiversity, fish kills and ultimately a loss of the natural beauty of the affected body of water. Animal wastes also contain harmful bacteria such as fecal coliform and E. coli; the latter of which is a direct threat to human health. Beginning in March 2011, a study will be conducted to examine and compare the levels of nutrients and coliform bacteria of the river sediment and water in the Sauk River near St. Cloud. Samples will be taken bi-weekly from sites along the Sauk River and after significant rain events. Sediment and 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 29 **Present Time:** 9:00 AM

Student Presenter(s):	Sponsor(s):	Department(s)
Chitrakar, Neeva; Granlund, Donald; Grier, Megan; Kueppers, Michael; Viestenz, Robin	Bender, Michner	Environmental and Technological Studies

Electonic Display Board

With today's fast moving environment and life styles people require information at an equally fast rate. It is also becoming increasingly difficult to have a specific small student organization standout on such a large campus. Our approach to addressing this problem was to develop a student project for IEEE which not only advertises our organization, but one that could be developed by all of our student members of various expertise and promote membership retention. The LED electronic display we are constructing will be built from the ground up. Everything from the design, soldering, logic, and casing will be done by students here at St. Cloud State. The display is designed to be a platform that a control unit can simply drive. This way if the control unit is redesigned, it will be able to utilize the existing display. When the sign is finished, it will be displayed in the ECC building to advertise events and stimulate interest in IEEE and the Electrical and Computer Engineering majors.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Stumvoll, Tanner; Nogosek, Chad; Sainju, Anish	Hossain, Md	Electrical and Computer Engineering

Pre-Competition Hydration Status of High School Athletes Participating in Alpine Skiing

Despite recommendations from coaches and the perceived popularity of sports drinks, many high school (HS) athletes come into competition dehydrated which in turn can hinder performance. Athletic performance can be compromised with as little as a 1% rapid weight loss through dehydration. Because of this, it is important to educate teenage athletes on fluid consumption and ensure they understand what it means to be hydrated. To test the hydration status and characterize basic hydration knowledge of HS age alpine skiers prior to a fitness assessment used in their regional team selection process. HS age alpine skiers (N=24; males n="22;" females n="2") volunteered to participate in this study and provided a urine sample just prior to their fitness assessment. Athletes were also asked five questions regarding their understanding of hydration and its importance for optimal performance. Urine osmolarity was determined using the Advanced Micro-Osmometer Model 3MO. Athletes with urine osmolarities greater than 800 mOsm were considered dehydrated. RESULTS: The mean urine osmolarity of the skiers was 789.5 + 259.2 mOsm. All 24 subjects stated it was important to come hydrated to the fitness assessment; however, 15 had urine osmolarity levels above 800 mOsm and were classified as "dehydrated". A Chi-Square test (18.0, P<.05) showed that nine more athletes were dehydrated than expected. Reported feelings of thirst were inconsistent with individual mOsm levels. Despite all subjects feeling it was important to enter competition hydrated and 20 of them receiving education on proper hydration, 15 of 24 entered the fitness assessment dehydrated. The lack of consistent feelings of thirst between hydrated and dehydrated athletes confirms the notion that thirst cannot be relied upon by HS athletes to determine their own hydration status. Additional education may also be useful to help prepare athletes for optimal performance during competition.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Johnson, Chad; Davenport, Ashley	Bacharach, David	Health, Physical Education, Recreation and Sport Science

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 utilizes 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 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 32 **Present Time:** 9:00 AM

Student Presenter(s):	Sponsor(s):	Department(s)
Shah, Anil; Najmee, Taha; Khan, Adib	Hossain, Md	Electrical and Computer Engineering

Backwater and Associated Hydraulic Choking in Stratified Density Currents

Recent observations in the field (Karoo - RSA, Ross - Ireland, Ainsa - Spain) suggest that terminal submarine fans are likely to develop channel depths that increases rapidly upstream and thus creating subcritical flows the mid-fan region (e.g., Fr' ~ 0.2-0.5, Pirmez and Imran). These observations potentially create ideal conditions for a well-known phenomenon in open channel hydraulics, i.e. vertically choked flow and propagation of a backwater. The condition may originate with the growth of a mouth bar at the fan terminus that contracts the flow area. With enough contraction, the flow can become choked and lead to the upstream propagation of a backwater wave and additional flow deepening along the subcritical channel, which in turn might trigger channel avulsion further upstream. We propose that this choke condition, and the associated backwater, may be an important control on the organization of deep-water channel fills and a driver on avulsion and associated avulsion cycles. To test this idea we perform a number of experimental runs including subcritical density currents in our gravity flow tank at SCSU to determine: (1) choking conditions using a simple conservation of energy theory, and (2) backwater lengths using an extended theory to gravity flows from non-uniform subaerial rivers. For different flow conditions, detailed velocity and density distributions were measured in several verticals in all subcritical conservative density currents, along with choke conditions at an artificial obstacle (bar), and its associated backwater lengths. Using our experimental data, we developed a scaling analysis for density stratified flows and turbidity currents, to derive the basic backwater length and bar thickness scales. These scales are compared with sea floor data of avulsion lengths and thicknesses from high-resolution bathymetric studies of deep-water fans published over the last decade.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Awalt, Shane	Fedele, Juan	Earth and Atmospheric Sciences

Left Motor Cortex Interference in Relation to Cell Phone Use and Driving

The use of cell phones during motor vehicle operation is prevalent in modern day society. The detrimental effects of driving while talking on a cell phone have been presented to the general public through accident reports on the local news/newspaper. Cell phone use while driving is quickly becoming one of the primary causes of motor vehicle crashes. In the present line of research we are interested in identifying the conditions under which cell phone use might be altered to increase driving safety. The left motor cortex is the known facilitator of speech production, as well as the controller of movement for the right side of the body. When driving with one's right hand, and talking on a cell phone with the left, both tasks are being handled by the left motor cortex. This forces the motor cortex to divide its attention between the two tasks, therefore limiting the amount of neurons dedicated to each activity. Activation of the right motor cortex when using the left hand to drive can alleviate this interference and allow a larger amount of neurons to be dedicated to each task. This hypothesis is currently under experimentation in the Psychology lab of St. Cloud State University using the Playstation II game Grand Theft Auto III. Using a steering wheel and gas/brake controller, the participants manipulate a vehicle through the realistic city environment provided by the game, using either their right, left, or both hands while performing a verbalization task. We predict more driving errors when the driver uses their right hand to drive relative to when they use their left hand.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Sall, Genessa	Widner, Robert	Psychology

Examining the Relationship Between Internalized Homonegativity and Treatment Outcomes in LGBT-specific Addiction Treatment

To date, no research has been conducted that investigates the relationship between internalized homonegativity (INH) and treatment outcomes in a LGBT-specific treatment setting. This research will aim to fill this gap in the literature by measuring internalized homonegativity rates among individuals entering into LGBT-specific addictions treatment. The study will take place at the PRIDE Institute in Eden Prairie, Minnesota. Administrators at PRIDE Institute have expressed a desire to measure the INH of individuals admitted for treatment, and thus are particularly interested in the relationship between internalized homonegativity and treatment outcomes. Upon admission and discharge from the program, lesbian and bisexual women will complete the Lesbian Internalized Homophobia Scale - Short Form (Szymanski & Chung, 2001), and gay men will complete the Internalized Homonegativity Inventory (Mayfield, 2001). Data will also be collected from a demographic questionnaire, the Beck Anxiety Scale, the Beck Depression Scale, and the South Oaks Gambling Screen. A paired t-test analysis will be conducted to see if a relationship exists between rates of INH (independent variable), treatment retention (dependent variable), and sobriety status 30-days after discharge (dependent variable). Analysis will also examine whether or not there is a relationship between internalized homonegativity and depression or anxiety. Lastly, results of INH rates at admission will be compared to INH rates at discharge of the program in order to determine if any change has occurred. It is hypothesized that INH rates will be positively correlated with treatment dropout rates, relapse rates, depression, and anxiety. Lastly, it is also hypothesized that INH rates will decrease for individuals who complete the treatment program.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Van Slyke, Jenna	Livingston, Tina	Educational Leadership and Community Psychology

Unmanned Aerial Vehicle

Quadcopter is a potential application for the Unmanned Aerial Vehicle concept. A quadcopter is a four rotor aircraft whose lift is generated by four rotors mounted in a square-like fashion. The goal of our project is to design and construct an autonomous quadcopter capable of indoor and outdoor flight and hover. The quadcopter being autonomous will imply that it will balance itself and hover in its current location when there is an imbalance caused by wind or other external and internal disturbances. The implementation of advanced integrated controls system will give the vehicle its ability to takeoff, hover, maneuver and land as desired. This project requires extensive knowledge in hardware and software. In hardware, this project will exemplify aerodynamic designs, system controls, analog and digital circuit analysis and communication which are the core disciplines of Electrical Engineering. Moreover, the software part of this project will require a high level of programming which is also another important section of the Electrical Engineering discipline. According to the American Society for Engineering Education the number of students pursuing an engineering degree (Electrical/Mechanical/Computer) in United States has showed to be below average growth and has been almost flat since 2005. Considering this as a major setback in the engineering field, we decided to accomplish a nice and fun project with the complete intention of electrical and computer engineering knowledge to attract potential high school graduates to pursue an engineering degree at St. Cloud State University.

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

Student Presenter(s):	Sponsor(s):	Department(s)
AlYami, Naif	Hou, Ling	Electrical and Computer Engineering

Influence of Block Angle on Take-off Velocity in Swim Starts

Both swimmers and coaches have suggested that different start block angles may provide an advantage over others. Few studies have looked at the influence of the block angle on take-off velocity. The purpose of this project is to determine the start block angle at which a swimmer can generate the greatest take-off velocity. Three experienced male swimmers completed 3 swim starts of their preference (grab or track) on a block set at angles of 0, 10, and 20 degrees from the horizontal. Participants were given as many trials as needed to gain familiarity with the different block angles. Measurements were taken using an AMTI force platform secured to the start block. Average take–off velocities at 0, 10 and 20 degrees were 3.6 (+ 0.4), 3.3 (+ 1.2), 3.1 (+ 1.3) m/s, respectively. Take-off velocity decreased for two of the 3 subjects as the block angle increased. The third subject had the slowest take-off velocity at zero degrees. Start block angle may have an effect on take-off velocity. However, statistical conclusions could not be drawn in this pilot study as there were only 3 subjects.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Kaufmann, Kathryn	Street, Glenn	Health, Physical Education, Recreation and Sport Science

'PCmode: A Robust Modem for High Frequency Ionospheric Communications'

PCmode is a software (C++) based modem designed to transfer data at the fastest rate possible while still conforming to the definition of robust set forth by the IEEE (Institute of Electrical and Electronics Engineers). In their article *Robust HF data communications at high latitudes* (ISSN: 1350-2417), the IEEE presented the results of measurements that have been collected from the Scandinavian Doppler and multipath sounding network (DAMSON). The measurements and conclusions of this IEEE paper are used in the design of four PCmode modems, of which two of the modes have forward error correction modeled after the NASA Galileo missions. This forward error correction allows for reliable communications even at reduced power levels and when experiencing non-ionospheric distortions to the modem's signal. Experiments at DAMSON indicate that non-robust modems fail under auroral conditions and that at high latitudes, robust communications modes are required up to 90% of the time. The design of this open source software allows a computer's sound card to be connected to any two-way radio's microphone and headphone connections in order to transmit data. A finished version of the program will be available for live demonstration, and a multi-platform CD-ROM of the software will be handed out for free.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Phelps, John	Harlander, John	Physics, Astronomy and Engineering Science

Community Outreach: the Health Fair Experience at SCSU

Health fairs are excellent agents to deliver health education services to the community. In this context, a series of health fairs have been organized, and implemented by community health students from the department of Health, Physical Education, Recreation and Sports Science (HPERSS) at the College of Education at St. Cloud State University (SCSU). The majority of services provided by these health fairs, include: blood pressure and body mass index screenings, health education materials, and the promotion of health, and health related services available in the community. The objective is to provide health education services during a single occasion (the health fair) for the campus community, including students, staff, and faculty in an event that is also open to the public (the rest of the St. Cloud community). The method used is a review of a series of reports elaborated over a period of 10 years by community health students who had conducted the health fairs, interviews with previous organizers, accompanied by a literature review of the topic. Results were that health fairs are an excellent medium for community outreach targeting the SCSU population, and incorporating several health and health-related organizations that provide these resources in the St. Cloud community.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Stay, Karen	Antunez, Hector	Health, Physical Education, Recreation and Sport Science

The Use of an Industrial By-product as a Soil Amendment and Its Effects on Soil Physical/chemical Characteristics and Nutrient Retention

Soil physical/chemical characteristics are important in regards to the productivity of the soil. These characteristics can determine the rate at which water drains through soil, how much water is available to plants for uptake, and the speed at which organic matter breaks down within the soil. These attributes also play an important role in cation exchange capacity, pH buffering capacity, and nutrient availability; all important factors in plant/crop growth and protecting environmental quality. The purpose of this experiment is to determine the effects of mixing an industrial by-product on soil physical/chemical characteristics and soil nutrient retention, and to determine the potential value of this by-product as a soil additive/amendment. The experiment apparatus will be constructed using PVC pipes for the soil columns and lumber to construct a stand to hold the columns upright. Once the columns are filled with the soil mixture and placed in their upright position, a nitrogen based fertilizer will be added and irrigation to simulate annual precipitation will begin. The leachate that is produced will be collected and analyzed for nitrate concentration.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Hawkins, Dawn	Bender, Michner	Environmental and Technological Studies

Session C-A **SCSU Survey Center** **Alumni**

Leaving Home: An Analytical Discussion on Immigration

Immigration has been an issue central to public debate for a long time with issues surrounding the question of "What rights should illegal immigrants have verses legal immigrants and citizens?" The word immigrant has become synonymous with the term 'illegal immigrant' for many people, and the history of immigration in the U.S. has seemingly dissolved among present U.S. citizens who's very descendants took the journey to the new world. In this paper I attempt to relate the immigrant populations of the past with the present immigrant populations. I will compare and contrast both the reasons for people to leave their home, and the experiences they have had in their new homes. I will also discuss the meaning of the word 'citizen' and how meanings about citizenship shapes our views towards immigration.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Thibodeau-Schuldt, Megan	Zerbib, Sandrine	Sociology and Anthropology

SCSU Spring Student Survey

This spring, SCSU Survey is conducting a study of SCSU students, to find out their views and opinions on a variety of topics. These include questions on student housing, mental health issues, connectedness and student engagement with the campus and university activities, advising issues, the Social Host Ordinance, campus safety, budget concerns and related cutbacks, and certain demographic characteristics. The presentation will highlight the most interesting and important findings, and will include summary frequency tables as well as breakdowns by demographic categories. Comparisons to previous years' results will also be made. All student presenters are playing an active role in the design and implementation of the survey during spring semester, 2011.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Thibodeau-Schuldt, Megan; Edberg, Lucas; Hardrath, Jacquelin; Haggstrom, Brady; Archer, Julie; Martinez-Schuldt, Ricardo; Kellar, Donald; Behrens, Anna; Sherman, Sonny; Schweiss, Maria	Zerbib, Sandrine; Robinson, David; Frank, Stephen; Wagner, Steven; Hammes, Michelle; Kulas, John	Political Science, Psychology, Sociology and Anthropology, Statistics

Session C-C | **Paper Competition II** | **Cascade**

Is There a Difference in Immune System Involvement in Murine Autoimmune Versus Toxic Type 1 Diabetes?

Type 1 diabetes (T1D) is an autoimmune disease that is characterized by a destruction of the insulin-producing β-cells in pancreatic islets. Two experimental models for studying T1D use a selective pancreatic β-cell toxin called Streptozotocin (STZ) for disease induction. If administered in five consecutive low doses (LDSTZ), a T-cell mediated destruction of β-cells is observed. Conversely, a single high dose (HDSTZ) causes a toxic destruction of β-cells. The goal of this study was to characterize immune responses in LDSTZ- and HDSTZ-treated C57BL/6J male mice throughout the course of disease development by investigating T-cell proliferation in vitro stimulation assay, cytokine production (flow cytometry), and relative percentages of T-cell subpopulations (flow cytometry). It was found that LDSTZ-induced T1D is a T-cell dependent process, characterized by a decrease in splenic CD3+, CD4+, CD8+, and CD4+CD62L+ cell populations, along with a decrease in their pro-inflammatory cytokines, such as IFN-?, TNF-a, and IL-17; and an increase in regulatory T-cell population (CD4+CD25+Foxp3+) and its anti-inflammatory cytokine IL-10. These data suggest that protective anti-inflammatory response develops in the spleen of LDSTZ-treated mice in order to compensate for an ongoing pathogenic pro-inflammatory immune response in the pancreas. In contrast, HDSTZ-treated mice did not exhibit a reduction in T-cell subpopulations, nor significant changes in cytokine secretion, confirming a non-immune nature of the β-cells destruction.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Hobbs, Joseph	Cetkovic-Cvrlje, Marina	Biological Sciences

Does Deficiency in the T-cell Signaling Protein, Jak3, Affect the Development of Murine Type 1 Diabetes?

Type 1 diabetes (T1D) is an autoimmune disease during which beta-cells, the cells responsible for producing insulin (a necessary hormone for metabolism), are destroyed by the body's own immune system, specifically by a type of white blood cell called T-cells. In our experimental mouse model of T1D, we administered a compound called streptozotocin at a concentration of 40 mg/kg for five daily consecutive doses to induce diabetes. This model triggers the immune system to attack pancreatic beta-cells in a predictable pattern and is useful for studying the disease. We used a strain of laboratory mice which were deficient in a gene which produces a protein called JAK3. JAK3 is a crucial player in the signaling pathways of T-cells—T-cells receive signals from other cells in the form of proteins called cytokines and these have downstream effects on T-cell proliferation and differentiation. Mice lacking the *Jak3* gene were hypothesized to have a protective immune response after STZ injections. Immune responses to multiple-low-dose streptozotocin administration were characterized by our experiments investigating T-cell proliferation (by an *in vitro* stimulation assay), cytokine production (by flow cytometry), and relative percentages of T-cell subpopulations (also by flow cytometry). The T-cells of JAK3-deficient mice were found incapable of proliferation when stimulated *in vitro*, had lower levels of all cytokines, except the regulatory cytokine, IL-10, and had subpopulations of T-cells in very different proportions when compared to wild-type mice. Overall, JAK3-deficient mice appeared to have resistance to diabetes-induction due to their non-functional T-cells and this provides evidence for a mechanism for preventing the development of type 1 diabetes by inhibiting JAK3.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Dunai, Cordelia	Cetkovic-Cvrlje, Marina	Biological Sciences

Exit Strategies

In this study, we assessed societal norms and their effects on personal space. Recently, St. Cloud State University administrations is making efforts to promote a sense of community and improve the climate at the SCSU campus. The rationale for this study included an empirical evaluation of personal space and how this may influence the social norms of civility. Participants included individuals sitting alone at the SCSU library. Experimental control was demonstrated using a ABAB withdrawal design. Our experimental procedure consisted of members of our group sitting next to someone when a vacant space was available and no one else sitting by the individual. The dependent measure for our study was to examine if an individual would leave once their personal space was invaded. The independent variable involved giving individuals an opportunity to leave the experimental site. Experimenters did so by leaving the seat after the lapse of a 3 minute period while leaving all belongings at the table. By doing so, we created an opportunity for the individual to leave the site, if they so wished, while still maintaining the decorum of civility. Results indicated that very few individuals would leave the site when their personal space was invaded unless given an opportunity to do so discretely.

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

Student Presenter(s):	Sponsor(s):	Department(s)
CarlinSchauer, Kyle; Masterson, Kristen; DiLorenzo, Tricia; Gilseth, Roshni; Berning, Melita	Edrisinha, Chaturi	Educational Leadership and Community Psychology

The Usage and Implication of Social Networking Sites: A Survey of College Students

Social networking sites (SNS) like Facebook, Twitter, Myspace, and LinkedIn have become the most visited websites in the world, with Facebook topping the list. This survey has examined the self-reported use of social networking sites (SNS) by college students to determine the relationships between SNS usage rates and students' academic performance and personal development. A survey was administered to a non-random sample of college students on SNS use, perceptions of SNS communications, and awareness of the impacts of SNS in academic performance. Data were collected from an intercept and convenience sample of students at St. Cloud State University during the spring semester of 2011. The variables include students' SNS usage rates, students' Grade Point Average (GPA) of past and current semesters, students' personal development and academic progress, and students' perception on the effects of SNS usage on students' academic performance. The results included frequency counts, percentages, and cross tabulations. Chi-square test and ANOVA test were conducted to measure if there are any significant differences between SNS use and students' grades in terms of demographics. The findings have important implications for understanding SNS effects on average college students' academic achievements and personal development.

Presentation Index: C-C 4 **Present Time:** 10:30 AM

Student Presenter(s):	Sponsor(s):	Department(s)
Tham, Jason	Ahmed, Niaz	Mass Communications

Session C-G **Economics I** **Granite**

Evaluating Players Through the NFL Combine

I'm going to show if there is any correlation to a wide receiver's NFL combine results and their eventual impact on an NFL team. The NFL scouting combine has been used for over 30 years to evaluate players based on several tests including the 40 yard dash, bench press, vertical jump, broad jump, 20 yard shuttle, three cone drill, 60 yard shuttle, interviews, physical measurements, drug screen, and the wonderlic test. I will also be using number of years in the NFL, number of games played, number of catches, touchdowns and yards of past draftees 2000-2010. The amount of money that a 1st round draft pick gets is exponentially larger than that of a player selected in the later rounds. With the way the rookie pay grade is set up in the NFL each year the player drafted at a certain level in the draft get larger and larger based on the contracts granted in previous years. By doing this paper I hope to find a pattern of players whose worth is the amount of money that they receive regardless of the hype surrounding them. Players from BCS conferences i.e. ACC, Big 12, Big East, Big Ten, Pac 10, and SEC all seem to get more respect when being selected in the draft. I hope to show through my research that players should be evaluated based strictly on the numbers and not where they went to school.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Kummet, Brendan	MacDonald, Lynn	Economics

Bankruptcy Rates

The number of Chapter 7 bankruptcies filed in the United States has been steadily increasing since the 1980's. Previous studies have concentrated on the household net financial gain from filing bankruptcy. Another focused on the financial benefits that filing bankruptcy had on food consumption. Through statistical analysis I will be testing the dependence of bankruptcy rates from the unemployment rate, per capita income, home ownership rate, the foreclosure rate and the number of attorneys per capita. Specifically, my research will focus on the differences at the state level. This research has given me reason to believe there is a strong correlation in the bankruptcy rate compared to the residence of an individual and also the number of attorneys in that state. By breaking down why these rates are increasing, we can give better meaning to what is happening financially across the country.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Kunde, Lucas	MacDonald, Lynn	Economics

Incentive to Win in NFL

In this paper I will attempt to prove that NFL teams lack a financial incentive to win football games. While many judging other things, such as salary cap, location, team worth and local income, I will expose what gives team a financial edge. Ultimately I will prove that winning doesn't boost revenue by a substantial amount, but certain teams in certain locations are just set up for better success. I will also be looking into revenue sharing, which is the number one reasons team lack the need to win games in smaller markets. The larger markets bring in the television contracts and then need to split the money with teams that are underperforming.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Schroeder, Curt	MacDonald, Lynn	Economics

A Relation Between Military Expeditures And The Effects Upon Median Wages In A Global Community

The studies focusing on the relation between a country's defense spending and its economic growth have been varied in result. One school of thought argues that a strong military will enhance the capitalistic nature of a country while, conversely, others have ascertained large military expenditures will crowd out productive economic investment. This study will attempt to narrow the scope and determine the effect of an individual country's military expenditure. Adjusting for a country's exogenous variables, I will isolate the effect of the defense spending on its economic health as measured by its per capita national income. This study will be conducted using the 34 core OECD countries to provide a global perspective.

Presentation Index: C-G 4 **Present Time:** 10:30 AM

Student Presenter(s):	Sponsor(s):	Department(s)
Biesanz, Eli	MacDonald, Lynn	Economics

Session C-GS **Sociology and Anthropology I** **Glacier South**

Comparing Biological Effects of Estrone (E1) and 17β-estradiol (E2) in Mature Fathead Minnows

The presence of endocrine active compounds such as estrogens in treated wastewater effluent and their effects on aquatic life are an increasing cause of concern. Among the natural estrogens are 17β-estradiol and estrone. Although 17β-estradiol has received significant study, the biological effects of estrone, one of its breakdown products, are less understood. We tested the following hypothesis: High concentrations of each estrogen will increase plasma vitellogenin concentrations in mature fathead minnows and will decrease reproductive success. In two replicate experiments, we exposed mature fathead minnows to three concentrations of each estrogen for 21 days in a flow-through exposure system and measured a broad suite of anatomical, physiological, behavioral, and reproductive endpoints. These endpoints have been associated with adverse effects of estrogenic exposures. Although body indices remained unaltered by exposure, secondary sex characteristics exhibited an exposure concentrated-related decline in male fathead minnows. Interestingly, low concentrations of estrone enhanced the aggressiveness of male fathead minnows in a behavioral assay. Vitellogenin concentrations in male fish increased with higher concentrations of both estrogens, but remained unchanged in all female treatments. A decrease in fecundity was observed at high concentrations of estrogens as compared with control minnows. These results suggest that estrone is an important contributor to overall estrogenicity in waters receiving treated wastewater effluent. Funding provided by the EPA GLNPO program (# GL00E57201-0) to HLS.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Dammann, April	Schoenfuss, Heiko	Biological Sciences

Resistance

Dominating powerhouses develop and evolve through history. The research presented analyzes the limitations on authority in nations. Particularly those in which governing figures, rather than intangible ideals, have strong ideological control and established power structures, such as those that prevail in Egypt today. I propose that there is an amount of disconnect between the nation and the citizens which causes instability in appeal to authority. Today globalization is affecting the way governments are ruling their constituents, the poverty rate rises while capital and resources are being hoarded by corporations. The masses follow society relatively orderly and revolt, while quite rare occurs amidst the superstructures, against attempts at world domination. Why is social order disrupted by outrage and at what point do the individuals in masses revolt against authority? How do we account for the disconnect between authority and constituents? What are the consequences to these national overhauls?

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

Student Presenter(s):	Sponsor(s):	Department(s)
Nickolauson, Meghan	Freilinger, Rebecca; Zuo, Jiping	Sociology and Anthropology

Two Halves of Modern Capitalism: Haves and Have-Nots

Capitalism has long been regarded as the economic and social center of progression in human civilization. However, while the initial widespread gains of the system raise all levels of society we, in time, begin to see the recurring pattern which has thwarted us historically: the rich get richer, while the poor get poorer. This adage epitomizes two major points: status, and competition. This paper discusses the statuses involved within capitalism and capitalist societies such that people are driven to compete. Competition is healthy when it has a declared and safe point at which it is no longer a viable stance, at which cooperation takes over. Capitalism however has minimal safeguards, many being found in European countries such as France, Sweden and Germany. Our country however is left with almost no safeguards, leaving competition to run its course. Without proper regulation those who take the lead will do all they can to keep and extend that lead. The problem herein lies that capitalist competition is not a game with a winner or loser, but rather a fight to live for better or worse: a fight to have, or have not.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Dwyer, Cory; Vondal, Edward	Freilinger, Rebecca	Sociology and Anthropology

Identifying the Effects of Tree Throw on Soil Stratigraphy at the Wendt Site

The overall research goal of this thesis is to analyze how tree throw affects archaeological sites in order to gain a greater understanding of site formation processes influenced by this significant environmental factor. This research focused on whether we have the ability to determine if tree throw had previously affected undisturbed areas adjacent to the excavated tree throws areas, which have been significantly disturbed in recent years by wind and fire events. This paper will present the preliminary methods and results of the effects of tree throw on soil stratigraphy at the Wendt site in the Boundary Waters Canoe Area Wilderness located within the Superior National Forest, Lake County, Minnesota. The primary method used in this area of the research was a forest soil analysis performed at the University of Wisconsin Soil and Plant Analysis Lab. Recognizing potential tree throw effects, and the fact that tree throw is an important factor in site formation processes, is vital to continuing accurate research in these forested regions.

Presentation Index: C-GS 4 **Present Time:** 10:30 AM

Student Presenter(s):	Sponsor(s):	Department(s)
Norman, Jennifer	Muniz, Mark	Sociology and Anthropology

Session C-VS **Engineering I** **Voyaguers South**

Design and Build of Small Battery Operated Scooter for Large Pipe Inspection

Xcel energy has 6 to 7 foot diameter concrete tubes they use as a form of drainage system. The engineer and the technicians inspect the system once a year. Walking in the dark slippery drainage is tough and time consuming. Xcel energy proposed building an electric scooter that can be used in the drainage tunnel. This project was brought to Saint Cloud State in August of 2010. We, the students as a group, took the responsibility of delivering a foldable electric scooter that can travel the distance of a drainage system and hold at least 300 lbs. This presentation highlights the design and fabrication process of the foldable electric scooter.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Dangol, Prabal; Shrestha, Benam; Thapa, Milan	Zhao, Yongli	Mechanical and Manufacturing Engineering

Capacity Improvement of the Paint Line System at Bobcat

Due to the increase in production demand, Bobcat wanted to determine the actual capacity of their Paint line system. The objective of this project was to analyze the capacity of the paint line system and to put forth strategies that would help for its improvement at Bobcat Inc., Litchfield, MN. Capacity of the system was determined by counting the actual number of hooks required by each unique kit. The next phase of the project was to analyze the readings so that minimum number of hooks could be used for maximum amount of units. The project was conducted as part of a class project and was essentially focused on the implementation of the concepts related to facility planning and material handling. The contributions of this project are twofold. First, it helped to determine the capacity of the Paint line system and secondly, the way to improve the capacity of the system was recommended.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Yuan, Cheng; Garimella, Sanjeet Chandra; Aryal, Nishant	Shah, Hiral	Mechanical and Manufacturing Engineering

Application of Information Technology Support System to Develop Automated Reports at Earthmoving Equipment Manufacturing Company

This project was conducted at Earth Moving Equipment manufacturing company where reports generated from their existing databases. The attendance of the employees and number of units that were actually produced was stored in the respective databases automatically but data from that databases had to be extracted manually in order to present it to the management team. Two databases system are currently being used at the company. The first is Interflex, where the data of employee's regular hours and overtime are stored but is currently incapable of automating the data to present it to the management. The second is Electronic Build Card (EBC) where data for number of units to be produced and actual number of units produced are stored. The problem in second case was that everything was random and not organized on shift basis, daily basis or weekly basis. This presentation will explain the solution derived to actually automate the data using both Interflex and EBC systems. Various programming tools such as PHP and JAVA were used to extract the data from both systems in order to generate reports in automated and organized way.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Bhattarai, Sagar; Peterson, Yusan	Shah, Hiral	Mechanical and Manufacturing Engineering

MME Senior Design FSAE Car

Formula SAE is an international engineering and design competition where student engineering teams conceive, design and fabricate a formula-style race car. These teams then compete, and are judged on a number of static and dynamic categories. The contest is governed by a strict set of rules that are intended to promote creativity and ingenuity. The objective of this year's project is to design and fabricate a car that will be able to successfully compete at the 2012 FSAE competition in Romeo, Michigan against approximately 120 other vehicles from colleges and universities throughout the world. This car is going to be built in a two year span with much attention given to it over the course of fabrication and tuning of the vehicle. This is also the most amount of dedication put by an Engineering team from St. Cloud State for one project, thus also making it one of the superb products developed in the school. St. Cloud State has had three successful entries in the Formula SAE design competition, and was placed 46th out of 120 teams at the 2009 contest. St. Cloud State has outperformed schools in terms of the product produced considering the minimal resource deployed. This year we aim to achieve higher results and better placements based on the school's involvement and the experience amassed from all previous competitions.

Presentation Index: C-VS 4 **Present Time:** 10:30 AM

Student Presenter(s):	Sponsor(s):	Department(s)
Ravn, Kelle; Shrestha, Ritesh; Greene, Nicholas; Albrecht, Jacob; Mooney, Aaron; Thompson, Nicholas; Bekkala, Eldon	Miller, Kenneth	Mechanical and Manufacturing Engineering

Session D-A **Behavioral Studies** **Alumni**

Management of Household Waste in Ghana

The residents of Ghana have been relying on a network of public utilities and private companies to provide waste management and other household utilities. This system has been plagued with problems of corruption and inefficiencies leading to gaps in the provision of regular services. This analysis established level of service indicators to determine reliability and efficiency of existing household waste management systems in four of Ghana's larger metropolitan areas. Data was collected through research in documents that have been published by different private companies, public offices, and university studies conducted in the country. The results of our research revealed many deficiencies in Ghana's waste management system that helped us to propose recommendations that could improve the system's efficiency and effectiveness if implemented.

Presentation Index: D-A 1 **Present Time:** 11:00 AM

Student Presenter(s):	Sponsor(s):	Department(s)
King, Rachel; Muschler, Robert; Omot, Obuuy; Diedrichsen, Douglas	Ugochukwu, Chukwunyere	Community Studies

Affordable Senior Housing

Our research will consist of analyzing subsidized housing available for seniors in Central MN. Our reason for doing this research is to track the number of seniors affected by the recent recession, and who are now possibly in need of financial assistance to remain living independently. We will be gathering both quantitative and qualitative data, and using the mixed methods approach to present our findings. We plan to gather our information through published public information, surveys of our target demographic, personal interviews, social security data, and visits to government agencies such as local work force centers, and nonprofit organizations that provide assistance. If inefficiencies or short comings are found we will provide suggestions on how to improve living conditions for seniors. We will also provide suggestions for industries that may assist in offering housing solutions that benefit the local economy while, at the same time, create jobs. Key words: HRA, Low Income, seniors, Quantitative data, Qualitative Data, Mixed Methods, Subsidized housing, Section 8, Section 505, Central Minnesota

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

Student Presenter(s):	Sponsor(s):	Department(s)
Pratt Blenker, Julie; Rostomily, Katherine; Cody, Elizabeth	Ugochukwu, Chukwunyere	Community Studies

Impact of Information Technologies on Relational Communication in the Workplace

This paper provides a review of extensive research on use of new age technologies in the workplace and their impact on reltional communication. From search of databases of paper Minnesota Libraries, the paper highlights ways that interpersonal communication has been impacted in recent years by computer based communication technologies. Paper underscores how computer-based communication in the workplace has enabled new forms of isolated collaboration and slightly higher productivity.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Tandon, Nikita	Eyo, Bassey	Communication Studies

Transatlantic Perspectives on Cultural Sovereignty in MN: Staging Multilingual Conversations With Gerald Vizenor and Carme Riera

Ethnic novelists play key roles in shaping unique communal identities, yet read solely within a local lens, they can be difficult to understand. Because their work is constrained by mainstream sensibilities, strategies for local empowerment are easily appropriated back into dominant colonial frameworks that neutralize or even reverse their life-giving potential. In this paper I investigate how these constraints are tied unconsciously to aesthetic norms that mediate the very possibility of alternative readings. In particular, I consider how alternative sexualities can get 'politically misplaced,' causing novels to take on unanticipated meanings that contradict their intended purpose. Because both Gerald Vizenor [French-Ojibwe from MN] and Carme Riera [Catalan-Spanish from Barcelona] construct sexually explicit scenes designed to promote healthy cultural sovereignty, their work is particularly susceptible to misinterpretation. Yet their distinctive styles for incorporating sexuality make any single argument in their defense problematic. Premature judgments are all the more difficult to avoid since legitimate objections can been made that identify elements in their work that appear voyeuristic –designed merely to sell more books. When read against multiple aesthetic and sociocognitive theories, though, a more nuanced view emerges of how seduction works in political fiction. Surprisingly, this compensates for their 'weak points' producing a complementary composite understanding of the subtle connections between sexuality and colonial power. Read together, particular limitations emerge that explain why erotic fiction can be simultaneously liberating and manipulative. As this joint reading exemplifies a transatlantic approach to literature, I would stress the role that geographic distance plays here—how it foregrounds mutually distinctive qualities within a larger context. To successfully deploy such contrasts, one must set up intercultural conversations that foster open-ended horizontal exchanges (in contrast to confrontational vertical ones). In this regard, it is unnerving to notice how well sexual ambiguity sets up ideal contexts for horizontal exchange.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Fonken, Gael	Pryately, Margaret	Communication Studies

Compulsive Hoarding

We have all heard of a "pack rat," collecting things in overwhelming volumes. However, in 1996 Frost and Hartl redefined "pack ratting" in its extreme nature as a mental disorder known as compulsive hoarding. Little was known about compulsive hoarding, but public interest and curiosity spiked with shows like A&E's "Hoarders" and TLC's "Hoarding: Buried Alive." Participants, with the help of specialists, not only de-clutter, but also find healthy ways to cope with their emotional attachments.

Presentation Index: D-A 5 **Present Time:** 12:20 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Gahm, Noah	Wells, Scott	Communication Studies

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

Expression of Toxoplasma Gondii Cell Cycle Proteins

Cell cycle proteins in the zoonotic parasite T. gondii have not been well characterized. These proteins have been discussed as potential drug targets, making characterization an important goal due to the significant morbidity and mortality resulting from coinfection with HIV. Vectors containing inducible fusion proteins of T. gondii Cdk7, CRK2, Cyc1 and Cyc2 were used to transform competent E. coli. Plasmids were subjected to DNA sequencing and a restriction enzyme digest to ensure the inserts were intact. After transformation, growth curve analysis and SDS-PAGE were used to identify induction events. TgCRK2 was successfully induced, but the other proteins had toxic effects on E. coli and may have only been expressed at low levels.

Presentation Index: D-C 1 **Present Time:** 11:00 AM

Student Presenter(s):	Sponsor(s):	Department(s)
Schneider, Brent	Kvaal, Christopher	Biological Sciences

Effect of Carbamazepine on Planarian-Seizure Like Activity

Carbamazepine (5H-dibenz[b,f]azepine-5-carboxamide) is an iminodibenzyl derivative that is frequently used to treat various forms of epilepsy. Carbamazepine is an anticonvulsant that mediates its action through the inactivation of voltage-gated sodium channels. Aside from the primary molecular target, carbamazepine is also thought to antagonize both voltage-gated calcium channels and potassium channels; however, it is unclear if the alteration in the voltage-gated potassium channels contributes to the anticonvulsant effectiveness of carbamazepine. Planarians are non-parasitic flatworms that contain many of the same neurotransmitters present in mammals. Planarian behavioral studies in the presence of drugs acting on neural transmission have confirmed that they could be used as a simple experimental model to investigate interactions between neurotransmitters and their protein targets. In the present study, Dugesia tigrina were used as a planarian seizure model in the presence of distinct chemoconvulsants such as, (-)-nicotine, picrotoxin, and N-methyl-D-aspartate (NMDA) to determine how carbamazepine affects the nicotinic, GABAergic, and glutamatergic systems. The planarian seizure-like activity (pSLA) in the presence of convulsants or combination(s) of convulsants and anticonvulsant was quantified over a 5-minute period by counting the number of seizures every minute. When introduced to nicotine, picrotoxin (PCTX), or N-methyl-D-aspartate (NMDA), the planarians exhibited significant seizure-induced behaviors. When carbamazepine (100 µM) was tested with the maximal seizure-inducing concentration of the various chemoconvulsants, (-)-nicotine (10 µM), PCTX (5 mM), or NMDA (3 mM), the pSLA decreased by ~ 65%. These results indicate, for the first time, the significance of carbamazepine as a useful anti-seizure pharmacological agent in an invertebrate species. In addition, it suggests that carbamazepine may elicit its anticonvulsive effects through the nicotinic, GABAergic or glutamatergic systems in a simple, yet sensitive, animal model system.

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

Student Presenter(s):	Sponsor(s):	Department(s)
DeSaer, Cassie	Ramakrishnan, Latha	Chemistry

Geocaching as a Learning Tool in Minnesota's State Parks

Since its invention in 2000, geocaching is enjoyed by enthusiasts who wish to combine technology with a love for the outdoors. Geocachers use Global Positioning Systems (GPS) receivers and satellite data to search for latitude and longitude coordinates all over the world. Upon locating the coordinates, participants can find anything from a hidden object to a scenic viewpoint. Aside from fostering outdoor recreation, geocaching could serve as a useful tool to promote learning about the natural resources and history of the area being explored. Drawing on preliminary results of qualitative research at Wild River State Park, Minnesota, in which geocachers completed a questionnaire and were interviewed, this paper examines the role of geocaching in promoting knowledge about park history and natural resources. It is proposed that those who participate in geocaching have the potential to develop an enhanced understanding of park history and natural resources through hands-on, self-guided interpretation.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Rosier, Jessica	Yu, Hung-Chih	Geography

Session D-G **Economics II** **Granite**

Women's Empowernment and Economic Growth

How much population of the world is made up of women? From all the population, how many get equal chance of attending school? How many are exercising political power? The development of women and economic growth are tied together. This research paper addresses the conceptual issues related to women's empowerment and the impact on a country's economic growth. The key areas such as education, economic and political participation are the best indicators in measuring women empowerment. More specifically this research paper focused on how many women have a chance of attending primary school compared to men, the amount of women participating in politics compared to men and the likelihood of a woman finding a decent job, participating in the labor market and playing a great role in the country's economic growth.

Presentation Index: D-G 1 **Present Time:** 11:00 AM

Student Presenter(s):	Sponsor(s):	Department(s)
Bekele, Nazrawit	MacDonald, Lynn	Economics

Stadium Analysis, Comparing Domes to Outdoor Stadiums

The paper came about with the events surrounding the Minnesota Vikings and their current stadium situation. One of the questions repeatedly asked by both sides of the argument includes: what type of stadium is needed to satisfy the team, its fans, and those reluctant about the cost. This paper was written to evaluate whether a dome stadium is worth the additional cost. By comparing all thirty-two NFL teams, the paper looks at team value and if the type of stadium has enough of an effect on that value to justify the expensive cost.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Nash, Julie	MacDonald, Lynn	Economics

State Unemployment

While certain years represent dramatic change in the U.S. labor market, such as the 1990 recession, it is not easily understood why some states experience high levels of unemployment while others do not. Unlike previous studies which focus solely on public policy or population characteristics to explain variations, this paper looks at both. Several cross sectional and panel models are developed to evaluate state population, gender, race, minimum wage, and educational attainment in a variety of ways. By creating multiple models, each variable's impact on state unemployment can be studied in a specific year or a nonconsecutive time period such as 1970-2000. The investigations in turn will show that minimum wage, state population, and population characteristics alone are not the sole cause effecting unemployment.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Selchow, Tracy	MacDonald, Lynn	Economics

Energy Consumption

The relationship between energy consumption and income and price is a well-studied topic in economics. This paper studies the panel series properties of energy consumption, and the influence of national and state parks using a fixed-effect model for 51 states (Washington DC included), over 1970-2008, with consideration of the four primary energy industries in the United States (natural gas, coal, gas/oil and nuclear). The results show that for electricity, natural gas, gas/oil and nuclear demand, price elasticities are in general larger (in absolute value) while GDP/Income elasticities are lower in the more industrialized states. In particular, consumption has responded to energy conservation efforts and that states with a larger proportion of land designated for national/state parks may affect energy consumption significantly.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Nietz, Luke	Hughes, Patricia	Economics

Session D-GN | **Educational Policies and Systems** | **Glacier North**

A Comparative Study of Faculty Evaluation in American and Chinese Universities: The Cases of St. Cloud State University and Hebei University of Technology

Faculty evaluation is an important component of faculty's professional lives and it is a mechanism of accountability with scholarly and administrative goals within higher education institutions. Faculty evaluation can take different forms, such as formative evaluation and summative evaluation; and it can be used to enhance faculty improvements and to support administrative decisions. Faculty evaluations are employed as a common practice globally. Both the United States and China are homes to the largest higher education systems worldwide. While the United States is believed to have the most developed higher education system in the world, China's higher education has tremendously expanded in recent years and has surpassed the United States in the size of student enrollment. China is implementing a series of reform policies, and faculty evaluation is one of the key areas of change in this context. This case study explored the faculty evaluation policies and practices in St. Cloud State University and compared them to the ones employed at Hebei University of Technology (China). The researcher used qualitative methods and analyzed faculty evaluation documents obtained from both institutions. An overview of evaluation policies and practices adopted by both universities were provided; and the criteria for evaluation and requirements for promotion of faculty were compared and contrasted. The study found that the evaluation policies and practices of St. Cloud State University were different from the ones used at Hebei University of Technology. While policies and practices were different, both institutions are comparable in terms of type, educational goals, and faculty's professional ranks. Thus, the study found that the ways in which each university develops and applies its own evaluation policies and practices could be used by one another for the improvement of their respective faculty evaluation practices.

Presentation Index: D-GN 1 **Present Time:** 11:00 AM

Student Presenter(s):	Sponsor(s):	Department(s)
Liu, Xingcai	Silvestre, Gabriela	Counselor Education and Educational Psychology

Cost of Attendance and Cost of Living: An Examination of Minnesota's Private Institutions of Higher Education and Federal Financial Aid Policy

Cost of Attendance and Cost of Living: An Examination of Minnesota's Private Institutions of Higher Education and Federal Financial Aid Policy will examine the relationships between the result of the Federal Need Analysis Formula, the cost of attendance at the private colleges and universities in Minnesota, and the cost of living in Minnesota since 1992. Since the cost of attendance and the Federal Need Analysis Formula are the data elements used in determining eligibility for financial aid, and cost of living is indicative of families' ability to pay for college costs, correlations between these data will be analyzed with the end goal of identifying specific points in time where cost of attendance, the results of the Federal Need Analysis Formula, and the cost of living diverge. In exploring private institutions of higher education, the study will also explore reasons families choose private institutions rather than typically less expensive public alternatives. In order to contextualize the information within the study, a background on the financial aid process will be provided.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Addington, Eric	Silvestre, Gabriela	Counselor Education and Educational Psychology

The Impact of the College Environment on the Gay Identity Development of Male Undergraduate Students at SCSU

This session presents the results of a qualitative study designed to understand the ways in which the college environment impacts the gay identity development of male undergraduate students at St. Cloud State University, a Midwestern public four-year university. The study also explored how the students perceived the positive and negative impact of the college environment to influence the development of their gay identities. The researcher utilized seven mini case studies to develop an interpretive study of experiences of gay males in college. The findings showed that the college environment had an impact on the development of the participants' gay identities, and that there were positive and negative elements that influenced how they developed their gay identities personally and socially. The elements mentioned to have a positive impact were the university's mission and resources, and the support of close friends. The elements mentioned to have a negative impact were the attitudes of male students that attended the university and the social environment that those attitudes created. The participants believed that the social interactions with other male students had the largest impact on their gay identity development. This presentation will also provide recommendations for practice and suggestions for further research.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Marmolejo Davis, Alvaro; Plachecki, Matthew	Imbra, Christine	Counselor Education and Educational Psychology

Closing the Achievement Gap

The achievement gap has remained a continuing education concern for many years. Many scholars have produced a large body of research providing reasons why the gap exists and continues to exist. These findings can be put into two groups. One of these groups can be individual explanation, which has the blame on minorities and their culture, families and their communities. The second group is the structural explanations, which lay blame on the education system and the school and its setting. The No Child Left Behind Act calls for schools to take action against the achievement and help to close this gap. One promising way for schools to do so is to encourage their teachers to engage in practices that very much benefit their minority students. Another way is for the government to pump more funding in the inner cities to help those schools that lack the equipment to carry on a productive school process.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Slah, Gregory; Yusuf, Dirie	Widner, Robert	Psychology

Session D-GS **Behavioral Analysis I** **Glacier South**

Hazardous Texting

This study examined the awareness of people who are texting and walking. The treatment was conducted by placing yellow signs, with the official Occupational Safety and Health Administration (OSHA) “Caution: Object Ahead” sign, on a nearby wall. This was done during a heavy traffic (between 10:30-11:10 a.m.) time to measure the amount of behavior change comparing the results to the number of individuals who texted and walked before the placement of the signs. Results showed a high number of individuals texting and walking. The prediction for short term is that when the signs go up alerting people in the area to be aware it will have a brief effect on the people to be aware. Whereas the long-term effect is that people will read the sign, forget about the meaning and go back to doing what they were previously doing which was texting and walking. Our observations show that the likelihood of individuals changing their behavior of texting and walking with the treatment is exceedingly low and the signs will have no effect on awareness.

Presentation Index: D-GS 1 **Present Time:** 11:00 AM

Student Presenter(s):	Sponsor(s):	Department(s)
Grunst, Samantha; Peterson, Abbie; Johnson, Clare; Suess, Channa; Ruegemer, Kayla	Edrisinha, Chaturi	Educational Leadership and Community Psychology

Got Gym Germs?

When a person goes to a fitness center, a common purpose is to improve their health. However, one factor is contradicting this purpose. Many people are unaware of the germs present in the fitness centers they are working out at. This study consists of observing St. Cloud State University students and faculty utilizing the fitness center on campus. The purpose was to increase the use of anti-bacterial wipes on gym equipment. Signs were hung on every piece of equipment reminding subjects to wipe down their machines and weights. The researchers tallied and averaged these numbers. The preliminary results showed a slight increase in the use of anti-bacterial wipes.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Baune, Kala; Williams, Amber; Cole, Tayler; Arbuckle, Ashly	Edrisinha, Chaturi	Educational Leadership and Community Psychology

SCSU Where is the Love?

The objective of this study is to research the interactions of students, or lack thereof, on the St. Cloud State University campus. We implemented three different settings in a multielement design: Sidewalks, hallways, and the Husky Shuttle. For baseline we walked past people on the sidewalks or hallways or sat next to someone on the Husky Shuttle and did not engage in any interactions with the participants. Our target behavior was to receive a clear response to our greeting with a smile, eye contact or conversation. We used frequency recording by recording the number of reactions of those we encountered. During baseline we found that zero out of 60 people initiated any sort of contact with us. During our treatment, we hope to elicit our target behavior and receive some sort of interaction from the participants.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Bourgeois, Emily; Rassier, Sierra; Carlson, Jennifer; Knigge, Samantha; Feldewerd, Meghan	Edrisinha, Chaturi	Educational Leadership and Community Psychology

Crosswalk Experiment

There are numerous crosswalks on campus to protect pedestrians from car accidents and keep a smooth flow to traffic. However, pedestrians are aware of the crosswalks but not everyone is using them. This study used a multi-element design aimed to raise the percentage of people who use the crosswalk. Crosswalk use was observed and documented during three separate conditions in ten-minute intervals. Non-treatment observations were used to find out the percentage of people who use the crosswalk without any intervention. In addition, we randomly observed and documented two other interventions; visual prompts and verbal prompts. Visual prompts were given by an observer holding a sign that stated "Crosswalk" with an arrow pointing to the crosswalk. Verbal prompts were given by an observer loudly stating "Crosswalk, safety first, use your crosswalk" in ten second intervals. Results showed a slight increase in crosswalk use when the prompts were given. Pedestrian crosswalk use increased more significantly with the visual prompts than it did with the verbal prompts.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Rauer, Reagan; Mueller, Brenda; Kathrein, Lacy; Dege, Lia; Zhang, Wei	Edrisinha, Chaturi	Educational Leadership and Community Psychology

Mental Imagery and Pitching for SCSU Baseball

The purpose of this experiment is to see if mental imagery has an impact on pitching accuracy and performance. During the study researchers recorded one baseline pitcher and used three pitchers to see if mental imagery increased their pitching accuracy performance in the strike zone. Four baseline sessions were recorded before starting treatment. Methods used for treatments were relaxation techniques and imagination to increase pitching accuracy. The independent variable is applying mental imagery to the three pitchers in our study and the dependent variable is how many times the pitchers hit the strike zone in a live bullpen session. Currently we are still working on interventions, but have found that so far mental imagery does have a positive effect on pitchers and hitting their target area and strike zone.

Presentation Index: D-GS 5 **Present Time:** 12:20 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Achtelik-Weber, Melissa; Kettler, Kathryn; Schmidt, Rebecca; Snell, Derick	Edrisinha, Chaturi	Educational Leadership and Community Psychology

Use of Stimulus Fading to Teach Generalization of Expressive Responding to Noun Sub-categories

Many children with autism display an inability to label commonly found objects or to expressively respond to questions and statements. This deficit in communication is one of the main barriers to learning. Often this deficit must be targeted and taught through behavior intervention programs, either as specific labels or labels within noun categories. However, many programs designed to teach expressive language inadvertently teach rote responding, where the child's answer is always the same to the targeted statement or question, rather than generative responding, which is found in children without autism. Previous research using multiple-exemplar training has shown the ability to teach generative expressive responding within verb ending categories using a training phase followed by a probe phase (Schumaker and Sherman, 1970); however, this has not been systematically tested in the teaching of expressive responses to noun categories. In this study, expressive responses for three animal sub-categories were taught to a client with verbal skills. During baseline, the participant was only able to provide a range of one to four animals when the target discriminative stimulus ("tell me some ___") was delivered. Following baseline, a treatment was introduced to teach multiple animals within each of the three categories during the training phase, with the goal of achieving generative responding through stimulus fading. Generalized responding was defined as using the category members taught in training during the intervention phase with only the category visual present. Results of this study indicated that this method of teaching noun categories might be a viable alternative to current methods in achieving generative responding. This research extends the current literature and knowledge on language training and acquisition, and will help behavior intervention programs better teach categories to clients with autism spectrum disorders.

Presentation Index: D-GS 6 **Present Time:** 12:40 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Warling-Spiegel, Ashley	Edrisinha, Chaturi	Educational Leadership and Community Psychology

Session D-O **Information Systems and Security I** **Oak**

Computer/Digital Forensics

This experiment will be performed to determine what can be found on an old hard drive, and to show the recovery process of data. The hard drive that will be used is one that I have had for a while, and this is to show how someone may be able to retrieve data from an old drive, which was thought to be lost or deleted. There are several tools both free and purchasable that will be used during this experiment. A few of these tools for example may include FTK(free version), FTK 3.0 (purchasable), and perhaps a few others. Throughout the paper I will give a brief overview of those tools, how they are used, and how the data is structured in order to be searched. After this experiment one will see exactly how easy it is to search a hard drive for any lost or deleted data and the tools to find it.

Presentation Index: D-O 1 **Present Time:** 11:00 AM

Student Presenter(s):	Sponsor(s):	Department(s)
Ray, Jonathan	Schmidt, Mark	Information Systems

Risk Assessment Analysis on E-Voting Systems

With changes and implementation of technology in every aspect of today's world, it is important to make sure that the new changes being implemented are functioning effectively and efficiently. This paper considers the benefits and compromises the establishment of e-voting systems (electronic voting) will bring in today's world by thoroughly conducting a risk-assessment analysis by researching systems where e-voting is implemented and used. Systems like the general/ local political elections (US as well as Europe) and educational institutions, which have established the use of the e-voting systems, will be studied and discussed to derive the analysis of the risks and the level of success the organizations may have achieved by implementing e-voting systems.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Khan, Aneeqa	Herath, Susantha	Information Systems

E-Voting Properties and Its Issues

A voter can cast a vote through using either a conventional voting method like paper based voting or electronic voting (E-Voting) methods. Conventional voting systems have number of drawbacks. E-voting systems have been introduced to overcome problems in connection with traditional methods. E-voting systems are designed to defeat election fraud during elections. Information security characteristics such as confidentiality, integrity, availability and verifiability are paramount considerations during the designing of E-Voting systems. Maintaining security and other important features of these systems are a very challenging task. Novel approaches have been discovered to improve security and important characteristics of E-Voting systems. The aim of this paper is to perform a study of importance, characteristics and challenges of modern E-Voting systems.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Hettiarachchi, Charitha; Arthanayaka, Imali	Herath, Susantha	Information Systems

Session D-VN **Impact of Technology on Human Expression and Community** **Voyageurs North**

The Ease of Cycling Around St. Cloud State University: A political and cultural geographic examination of spatial movement

Bicycles are not just toys for children or a means of exercise for adults they are marvelous tools used by society that are not fully utilized. St. Cloud State University and the City of St. Cloud, Minnesota both have bike programs but both do little to help promote bicycle use. St. Cloud State University also does a poor job of accommodating to students and faculty who do wish to ride their bicycles for practical purposes. I will explore issues relating to SCSU and, to a lesser extent, the City of St. Cloudâ€™s bike programs with a focus on political and cultural geography issues including funding, locations of most need, and the cultural mentality of riding a bike. I will also consider systems that can be implemented that have worked in similar situations. Keywords: Bicycle programs, St. Cloud State University, St. Cloud, Political Geography, Cultural Geography

Presentation Index: D-VN 1 **Present Time:** 11:00 AM

Student Presenter(s):	Sponsor(s):	Department(s)
Rhodes, Mark	John, Gareth	Geography

Letterpress Printing

Letterpress printing is one of the oldest forms of printed communication and laid the foundation for modern offset printing and digital typography. The printing process has changed little since the 15th century, metal letters are set by hand, inked with an oil-based ink, and pages are pressed onto them. As advanced printing techniques became more affordable in the mid 20th century the number of letterpress printmakers decreased significantly, which made the unique qualities of letterpressed words more distinct. This project explored the process of creating letterpress artwork, the nature of written communication and the iterative creative process.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Imholte, William	Quinn, Justin	Art

Robotic Painting System

The goal of this project was to design an automated system to replace the current template method that paints traffic-directing images on our roads, such as left turn lane arrows, or handicapped-only symbols. The new system offers a cost-effective, quick, and safe alternative to the process that local governments currently use. The design presented is a half scale prototype robotic arm system for painting graphical symbols on a road surface. The design will cut the overall time to paint a symbol from five minutes to two and a half minutes, and requires half of the manpower currently used. The design also addresses the previous safety concerns by allowing the operator to finish each symbol without leaving the vehicle, thus reducing the danger of being hit by passing vehicles. The design was also made portable so that it can be moved easily from vehicle to vehicle allowing local governments to maximize efficiency when planning projects. The system detailed here is capable of drawing any vector graphic with almost zero technical ability required of the user. We have tested and verified the functionality and reliability of our prototype, and have given demonstrations of its capabilities. This project allows for further development and eventually will provide a safer alternative to painting traffic-directing images on our roads.

Presentation Index: D-VN 3 **Present Time:** 12:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Meemaduma, Harith; Schirmacher, Adam; Johnson, Jason; Fliegelman, Leslie	Thamvichai, Ratchaneekorn; Sezen, Ahmet; Hou, Ling	Electrical and Computer Engineering, Mechanical and Manufacturing Engineering

Session D-VS **Science and Engineering II** **Voyageurs South**

Application of Kaizen for Improvement of Weld Line for Landscape Rakes at Bobcat

“Open the window; it is a big world out there”, Sakichi Toyoda, founder of Toyota. Toyoda’s statement reflects his companies’ philosophy of being open to new ideas and incorporating changes in every step of the business. The famous Toyota production system is primarily based on Kaizen which means continuous improvement in Japanese. Kaizen relies on continual small changes that add up major benefits like faster delivery, lower cost and high customer satisfaction. This project is based on the Kaizen project conducted at Bobcat based in Litchfield, Minnesota. According to the company the current standard of welding Landscape Rakes did not meet customer demand. Engineers, welders, technicians and students worked together to come up with ideas to improve the weld line to decrease cost and improve efficiency. This presentation will discuss the outcome of the Kaizen project.

Presentation Index: D-VS 1 **Present Time:** 11:00 AM

Student Presenter(s):	Sponsor(s):	Department(s)
Dangol, Prabal; Hancock, Harrison	Shah, Hiral	Mechanical and Manufacturing Engineering

Designing the Rack for Brackets at Bobcat

Design a Rack for shipping Bracket assembly at Bobcat. This design project was done to avoid the cost that is caused by Bobcat due to shipping parts in the improper way. Shipping was done without using any kind of racks or support system to hold these brackets together. Design criteria for the support for the project were as follows: (a) Rack must be able to hold fifty brackets (b) Arms of the rack should fold down when rack is not in use (c) Rack should not allow brackets to move so that they are not damaged during shipping and (d) The design should be simple and cost effective. This presentation will provide the final design that was created to satisfy the project criteria.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Vanam, Sharath Chandra; Matto, Saqib	Shah, Hiral	Mechanical and Manufacturing Engineering

Public Perceptions of the 10 May 2010 Oklahoma and the 17 June 2010 Minnesota Tornado Outbreaks

The purpose of this project is to gather initial actions and reactions from the public in response to the 10 May 2010 Oklahoma and the 17 June 2010 Minnesota tornado outbreaks. This is done in support of the National Severe Storms Laboratory's Warn-on-Forecast project for severe thunderstorm, tornado, and flash flood events. The tools and products that will be developed as part of the project are intended to improve warning response capabilities for both the public and community stakeholders i.e. emergency managers, hospitals, and schools; this project provides insight into public perspectives on tornado warnings. Post-event interviews from two different storms formed the basis of this study, allowing for the comparison of regional differences, if any, in tornado perceptions. The first part of this research study consisted of formal interviews of six individuals impacted by the 10 May storm in Norman, Oklahoma and analysis of their responses. The second half of this research study consisted of another six interviews of individuals impacted by the 17 June storm in Wadena, Minnesota. Results revealed both common and uncommon responses to the two storms. In the Oklahoma storm, the majority of the interviewees did not feel any direct threat from the tornado during the early stages of storm development and advisories. This contrasted with the response from the Minnesota storm, where respondents were worried and did not know what to expect as they had to cancel the town parade. Interestingly, with a longer lead-time promised by Warn- on-Forecast, the common response for both locations was individuals would still probably wait to obtain more information before taking any form of shelter or enact a safety plan. However, a majority of the participants from the Oklahoma storm believed it would be beneficial to see information on the expected track of the storm, which Warn-on-Forecast could provide, in order to help them make their own decisions on whether they felt the need to take safety measures.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Stalker, Sarah	Hansen, Anthony	Earth and Atmospheric Sciences

Diffusion Dynamics of Hydrogels

Hydrogels are soft materials and are widely used for various applications such as soft contact lenses, pills/capsules , bioadhesive carriers, implant coatings and wound healing. Hydrogel comprises of a network of polymer chains synthesized from hydrophilic monomers. Due to the hydrophilic nature, these monomers swell in presence of polar solvents like water. The main objective of our research is to investigate hydrogels made from acrylic acid/N-isopropyl acrylamide as a drug delivery sytem. Preliminary research to understand the effect of composition/cross-link density on the kinetics of swelling showed that 10% W/V solutions of monomers , 1% W/V solution of initiator and 10% W/V solution of cross-link are the ideal concentrations for hydrogels that has fast response time (swell within 30 minutes). The swelling is dependent on pH: fluorescence studies with fluorescein indicates that the hydrogel matrix swells more in acidic and neutral pH and the swelling is reduced at high pH. The swelling kinetics are related to the microstructure of polymer as determined from scanning electron microscope.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Mawilmada, Prasad	Sivaprakasam, Kannan	Chemistry

Session E-R	Looking Beyond The Notes: Music Research and Performance	Ruth Gant Recital Hall, Rm 230, Performing Arts Center

Beethoven's "Appassionata Piano Sonata No. 23 in F Minor, Op. 57"

For this presentation I have chosen to present the first movement of Beethoven's 'Appassionata' Piano Sonata No. 23 in F minor, Op. 57 in recital/lecture format. This piece was one of four repertoire selections performed as part of my Creative Project on April 9, 2011. I will begin my presentation with a performance of the piece followed by a brief statement of historical context. Next will follow the analysis of the piece that will reveal the overall structure as Sonata-Allegro form, pointing out the two primary themes and closing theme of the Exposition, showing the use of the Neapolitan sixth chord throughout the piece, and highlighting the compositional techniques Beethoven used to develop the material stated in the Exposition.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Huber Rodriguez, Courtney	Wilhite, Carmen; Moore, Albert	Music

'Glass Prison: A Compositional Approach' a View of Electronic Music from a Compositional Aspect

This project will look at how a fixed media piece was created. The presentation will cover topics discussed in class that brought up the idea for the composition and that affected the piece technically and creatively. A description of the software will be covered. Along with the software I will talk about why a certain one was used over another. Different challenges to composing an electronics from an instrumental piece came up. I will describe what the challenges were and how I went about overcoming them. A view of the notation and the layout of the piece will be shown and discussed.

Presentation Index: E-R 2 **Present Time:** 12:55 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Skogerboe, Inna	Twombly, Kristian	Music

Garage Drummer: Integration of Electronic Media and Percussion in Performance

This project will provide an introspective glance into the development of electronic media in the performance of live performance involving percussion intruments. It will trace the history of modern compositions for percussion that include electronic media ranging from the early years of reel to reel tape and early synthesizers to modern iPods and the latest computer programs. The presentation will include recorded examples of seminal pieces for percussion and electronic media and will culminate with a live performance of James Campbell's Garage Drummer for percussion and CD.

Presentation Index: E-R 3 **Present Time:** 1:20 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Bernard, Paul	Vermillion, Terry	Music

Session F-A | **St. Cloud Safety** | **Alumni**

Attitudes and Effectiveness of Social Host Policy

The SCSU Survey Center has conducted a Student Spring survey in March 2011 covering the following issues: students' challenges, social host policies in St Cloud, safety on and off campus, housing satisfaction, mental health, budgetary decisions and connectedness to campus. We participated in the data collection and data analysis of this student survey, which was based on telephone interviews from a probability systematic sample of 2000 students. In this paper, we help to illuminate how and why Social Host policies were/are enacted and to what depth the policies have in decreasing house parties and underage drinking in and around campus. While highlighting the history of Social Host policies, we also delve into the mind of the consumer to determine how these policies affect them and how they affect those potentially having a party. This examination of the policies of Social Host laws show just how much their attitudes towards partying have changed as well as how 'social hosts' are changing, if at all. Finally, we explore the way various social factors, such as sex, dormitory residency, age, ethnicity, student class, and nationality may shape those attitudes and their potential relationship to these policies.

Presentation Index: F-A 1 **Present Time:** 2:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Pickens, Melissa; Henry, Karie; Holder, Molly; Shepard, Troy; Lucken, Natalie; Khat, James; Vondal, Edward	Zerbib, Sandrine	Sociology and Anthropology

Perceptions of Safety on Campus

The SCSU survey center will be conducting a student spring survey in March 2011. Perception of campus safety will be among the topics covered. We will be participating in the data collection and the data analysis of this survey. The survey will be conducted over the phone and will use a sample of 2000 students chosen by using a probability sample. In this paper we will be focusing on issues regarding students' perceptions of campus safety. The focus of these questions measure perceptions of safety contrasting night and day as well as specific locations on and off campus. Information on the students' age, sex, residency, ethnicity, student class, and nationality are known and will be analyzed with the data we collect.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Peterson, Ryan; Savolainen, Rachel; Dwyer, Laura; Chen, Charlie	Zerbib, Sandrine	Sociology and Anthropology

Safety Awareness on Campus: Looking at the 2011 Student Survey

The SCSU survey center has conducted a Student Spring Survey in March 2011 covering the following issues: students' challenges, social host policies in St Cloud, safety on and off campus, housing satisfaction, mental health, budgetary decisions and connectedness to campus. We participated in the data collection and data analysis of this student survey, which was based on telephone interviews from a probability systematic sample of 2000 students. In this paper we focus on issues regarding students' attitudes towards safety on and off campus. We explore the way various social factors, such as sex, dormitory residency, age, ethnicity, student class, and nationality may shape those attitudes.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Cuthbert, Zachary; Kremers, Stephanie; Cronk, Elizabeth; Smith, Michelle; Smith, Kathryn; Olson, Stepfanee	Zerbib, Sandrine	Sociology and Anthropology

Students' Perception of Campus Safety at SCSU

The SCSU Survey Center has conducted a Student Spring survey in March 2011 covering the following issues: students' challenges, social host policies in St Cloud, safety on and off campus, housing satisfaction, mental health, budgetary decisions and connectedness to campus. We participated in the data collection and data analysis of this student survey, which was based on telephone interviews from a probability systematic sample of 2000 students. In this paper we focus on issues regarding students' attitudes towards safety on and off campus. We explored the ways in which various social factors, such as sex, dormitory residency, age, ethnicity, student class, and nationality may shape those attitudes.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Pietsch, Kayla; Werner, Peter; Backlund, Nicolas; Zamfir, Alina	Zerbib, Sandrine	Sociology and Anthropology

Session F-G **Behavioral Analysis II** **Granite**

A Song For You

Music in a vast array of forms can be found in every country of the world. It connects us across cultures and race and often serves as a type of soundtrack to our lives. Music increases the feeling of community, often witnessed at music concerts with thousands of people all singing along with the song played at the time. Secretary-General Kofi Annan noted in his introductory remarks at the lecture on "Why Music Matters" by Professor Leon Botstein that "Music penetrates almost every part of our lives: our rest, our entertainment, our education, and our worship" He continued to say that "in a world of diversity where often values clash, music leaps across language barriers and unites people...and through music, all peoples can come together to make the world a more harmonious place". This study was designed to encourage community spirit on the SCSU campus by evoking participants from wide cultural backgrounds to join in singing songs known throughout the world without. We used an ABAB reversal design to demonstrate experimental control. Research results indicated participants were more likely to join in when they saw other participants singing and could view the visual prompt in the form of song lyrics at the same time, rather than when visual prompting was removed. It is possible that viewing others singing and the visual prompt of the lyrics increased the personal comfort level of the participants. We conclude that music can indeed unify people, regardless of music preference or cultural heritage.

Presentation Index: F-G 1 **Present Time:** 2:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Holt, Beckie; Burk, Sara; Stanton, Dexter; Hartwig, Elissa	Edrisinha, Chaturi	Educational Leadership and Community Psychology

Effects of Extra-Stimulus Prompts to Promote Respectful Computer Usage at SCSU

This study intends to observe personal or recreational use of campus computers by SCSU students. The desired result is to decrease students' personal use of computers on campus to allow other students to utilize them for academic purposes. The participants include SCSU students using campus computers at three different locations. Computer labs were monitored during 10 minute sessions using a momentary time sampling collection method. An ABAB reversal design was used to analyze the data. Intervention consisted of an extra-stimulus prompt of a sign on the computer monitor that stated "FOR ACADEMIC USE ONLY". We expect the prompt to decrease the occurrence of the target behavior, thereby decreasing non-academic use of campus computers following intervention.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Berglund, Jessica; Stevenson, Tiara; Hardy, Jenna; Archambault, Tanya; Pinson, James; Sexton, Brian	Edrisinha, Chaturi	Educational Leadership and Community Psychology

An Experiment Evoking Thanks

The study evaluated whether a verbal prompt of opening a door for someone was effective in evoking the desired response of verbally expressing thanks during door opening behavior. The experimenters recorded the frequency of recipients either physically or verbally expressing "thanks", using a mixed multi-element-ABAB design. Results of this study revealed that a higher occurrence of participants verbally expressed "thanks" when contact was first initiated with a verbal prompt "let me get that for you" when compared to the baseline phase when "prompting" was absent. Based on the results, it was concluded that a large majority of the SCSU population did not recognize when someone provided a courtesy service for them unless they were prompted to respond. Future research may consider determining if this behavior would generalize to different settings.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Halonen, Daniel	Edrisinha, Chaturi	Educational Leadership and Community Psychology

Cigarette Experiment

SCSU has recently formed a taskforce for the 2010-2011 academic year to review and make recommendations regarding the current smoking policy. However, the only language in the current policy regarding cigarette disposal is that "It is expected that cigarette butts will be placed in receptacles provided." If indeed this is occurring it has not been evaluated empirically. In this study an experiment was conducted to examine if cigarette butts are being disposed in the receptacles provided. Additionally, we used a visual prompting procedure to increase the frequency of cigarette/cigarette butt disposal in a designated container. An ABAB reversal design was used to demonstrate experimental control. Results indicated that during the treatment phases, visual prompting (a sign with "Put your cigarettes here" and a bright orange disposal container) increased the rate of cigarette disposal into the disposal container. During baseline phases, visual prompting (replaced with a plain white disposal container and no visible sign) was removed and cigarette disposal decreased to previous levels. Participants in this study were persons smoking in the outdoor corridor between Stewart Hall and the 51B building at the St. Cloud State University Campus. These data demonstrate that "expecting" students to adhere to the policy of "disposal of cigarette butts in receptacles provided" may not necessarily lead to compliance and that the current policy may need to be revised and or revisited.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Kern, Noel; Hillyer, Jesse	Edrisinha, Chaturi	Educational Leadership and Community Psychology

Session F-GN **Higher Education** **Glacier North**

Past, Present, Future: Times of Change for Continuing Education

This is a qualitative, multiple case study to analyze and compare the purpose, mission and roles of continuing-education divisions in a public, four-year, post baccalaureate, comprehensive higher education institution in the United States, 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 study contributes to overcome the death of empirical and theoretical studies on the role and mission of continuing education units. The findings from this study illuminates areas in need of development and enhancement of continuing education units. The findings also support the creation of standards and policies for continuing education divisions in higher education.

Presentation Index: F-GN 1 **Present Time:** 2:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Ruhland, Gail	Silvestre, Gabriela	Counselor Education and Educational Psychology

Preferential Policies for Education: The Reality of Its Implementation and Impacts on Disadvantaged High School and University Students in An Giang Province

Although the Vietnamese Government provided for disadvantaged students (DS) in its constitution, education laws, and sixty-two policies for disadvantaged university students (Nguyen L. & Nguyen T. H, 2006), the number of DS who did not know of, or use up, the policies remained high between 1986 to 2006 (PHEPC, 2007). The phenomenon was found in many project sites, specifically in An Giang Province (AGP) with the drop-out rate of 6.21% at the high school level (AGDET, 2006). Why have these policies not pervasively reached the targeted students? The reasons why these policies have not reached the targeted students are complex and varied. This study aims to discover the reality of the educational policy implementation and educational policy use among disadvantaged high school and university students in the AGP. This research used mixed-methods design to examine statistics on students' retention, students' opinions, and educators' evaluations. Six high schools and a representative university were selected and sampled to be studied. Groups of 30% of students enrolled in grades 10th, 12th and of the two biggest departments of An Giang University (AGU) were randomly sampled for structured-questionnaire survey. One president of each school, a staff of students' affair office, and four parents representing types of targeted students participated in semi-structured interviews. This research showed that there is a significant difference between the students' need of education policies and the limited access to these support resources. Based on the results, this gap appeared as the consequence of ineffective policy implementation process. Comparative statistic analysis demonstrated a positive correlation between the greater uses of policies and the greater volume of students obtaining HIED. This study could offer a foundation for education policy makers and implementers of what should be turned into actions in their areas. The findings in this study complement the very limited in-country educational policy literature on the topic.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Pham, Nguyen	Silvestre, Gabriela	Counselor Education and Educational Psychology

Assessment Surveys of SCSU Doctoral Students' Persistence and Degree Obtainment

This graduate project was designed to develop a systematic assessment survey instrument to be used for identifying factors shaping doctoral students' professional development and retention at SCSU. Data collected from the assessment surveys will provide the groundwork for SCSU doctoral programs' faculty and administrators to foster appropriate strategies to enhance student learning and professional development which will ultimately strengthen retention. The final product of this graduate project will include four assessment surveys, which will be administered to SCSU doctoral students at various stages of professional development indicated in research. Literature research was conducted to provide a theoretical and functional framework for this graduate project. The assessment surveys will be administered to SCSU doctoral students in September 2011.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Braun, Michele	Silvestre, Gabriela	Counselor Education and Educational Psychology

Ethnic Minority Participation in Decision Making in HIED

This is an analysis of how much “shared governance” is entailed in the current governance structure in higher education. The study looks at representation of minority/under-represented groups in decision making processes within higher education. The study will focus on Latinos in higher education administration and their role in decision making. Latinos are the fastest growing population in the U.S. but one of the groups with the smallest representation in higher education. There have been several interventions but how engaging have these been is a question yet to be answered in higher education governance structures. The evident rise in enrollment does not necessarily mean a rise in representation.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Conteh, Lynn	Silvestre, Gabriela	Counselor Education and Educational Psychology

Session F-GS | **Social and Behavioral Studies I** | **Glacier South**

Feminist Legacy in Geography: Case Study in the Role of Female Geographers in the History of St. Cloud State University Since Its Establishment as Third State Normal School in 1869

Early female geographers have played a significant role in the history of geographic education at St. Cloud State University (SCSU). Since its establishment as a Normal School in 1869, it has been a requirement for students to take geography courses as a core component of the overall education. Drawing on the work of Dr. Janice Monk, which affirms the role of early female geographers in other normal schools throughout the country, this paper studies the role of female geographers at SCSU from 1869 until 1945. The methodology includes an examination of course catalogs, newspapers and other printed and archived university materials. This paper reviews the contributions made by female geographers in SCSU and hence questions the assumption that early academic geography was male dominated. These results have important implications for understanding the dynamics of gender and the spaces of education in SCSU's early history.

Presentation Index: F-GS 1 **Present Time:** 2:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Shrestha, Rupak	Wixon, Lewis; John, Gareth	Geography

Threshold Population of Full-Time Fire Departments in the State of Minnesota

Beginning in the 17th century, cities in the United States established mechanisms to fight fires. By the 18th century; volunteer fire departments were in major cities throughout the country. This study investigates if there is a threshold population of initial classification of full-time fire departments in Minnesota in 2010. An examination of the population hinterland served at the time of initial classification of each full-time fire department in Minnesota was conducted. Although there is an association between population and full-time fire departments, wide variations exist. It has been concluded that fire department status in the State of Minnesota does not support the hypothesis.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Holm, Jenna	Wixon, Lewis	Geography

Decrypting Password Protected Data For Use in Digital Forensics

Digital forensics requires that forensic professionals extract data, (from the electronic medium in which it is stored,) and analyze that data. The goal of these experts is to produce evidence for use in a criminal trial or civil dispute. Often, the data in question can be extracted and analyzed in a plaintext format. Sometimes, however, the person responsible for concealing the data has enough technical knowledge to encrypt the data on the storage medium. The importance of being able to access the encrypted data cannot be overstated. Encryption algorithms are very difficult to perform cryptanalysis on, and most of the time the password exists, in some format, on the same storage medium. Therefore, it is the goal of this project to show that the encrypted files, as well as the stored passwords, can be discovered using the modern forensic analysis software known as Forensic Tool Kit (FTK). I will also show that the plaintext passwords can be recovered from the encrypted versions using powerful password cracking software. Finally, I will show that the concealed data can be revealed by decrypting with the plaintext password key using FTK.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Rogers, Dustin	Schmidt, Mark	Information Systems

Computer Forensic Investigation

What exactly do forensic analysts do? How can this type of work help law enforcement or corporate security managers? If you want to solve a puzzle isn't it often best to have all the pieces? Computer forensics is one piece to the investigative puzzle. There must be some need to conduct this type of investigation. Security managers and law enforcement alike must have proper authorization before conducting this type of analysis on a computer. privacy laws may go beyond a consent to search and consent to monitoring. We can often help piece together past events by looking at recovered files, internet cache, and slack space. Sometimes, just looking at what someone wanted to get rid of is a good place to start, other times you will need to dig a little deeper and look at areas of the hard disk that the normal user does not usually have access to. When these cases are tried in court, as the analyst it is your job to report what you found not to speculate, or follow down the path of doubt the defense tries to create. It is important for the analyst to be able to find the evidence on a computer and be able to articulate how you found the evidence. It is great to be able to retrieve evidence from a computer, but having an idea of how it works, how data is saved in various operating systems, and being able to describe this to someone else is crucial. In our paper , we are going to use Forensic Tool Kit (FTK) for analysis the hard-disk. With FTK we can make sure that the stand for preserved data is not changed, protect the evidence to ensure no one else has access to the evidence and document everything.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Thaung, Kyaw	Schmidt, Mark	Information Systems

Session F-O **Modeling and Forecasting** **Oak**

Saint Cloud Judicial System Funnel

The U.S. Criminal Justice System has been described as resembling a funnel being wide at the top and narrow at the bottom. This means there are more suspects and defendants in the justice system than convicted offenders who have passed through the correctional system. As crimes pass through the Criminal Justice System, a number of cases are dismissed due to a number of causes, including a lack of evidence. Other suspects have cases dropped by entering therapy and counseling to avoid the case being tried in court. The majority of cases in the Criminal Justice System are investigated, tried or dismissed on the basis of personal choices made by officials who use discretion to decide on individual cases. Police officers decide whether to investigate cases or arrest individuals based on personal choice, while judges and lawyers interpret information to decide on bail applications and plea bargains. It is our goal to get an estimate of the number of people that are dismissed at the different levels in the Criminal Justice System and to get a better understanding of how long it takes an individual to complete the process of the Criminal Justice System in Saint Cloud. We plan to compare case numbers and dates in the different levels of the Saint Cloud Criminal Justice System to see how many cases were dismissed at those levels.

Presentation Index: F-O 1 **Present Time:** 2:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Hardrath, Jacquelin; Bilben, Summer	Robinson, David; Xu, Hui	Statistics

Predicting the Number of Inmates in Stearns County Jail

Go directly to Jail, do not pass Go, do not collect $200. The Stearns County Jail has been increasingly occupied by inmates. Because of crowded conditions, the jail administration hopes to better understand who is occupying the bed space at the jail and for how long. Many inmates only remain in jail for a few hours or a few days; on rare occasions, an inmate may remain there for several months. We have been working in correspondence with Stearns County to analyze and predict the length of stay depending on certain factors of the criminal case and the demographic characteristics of the offender. Using data queried from the jail database, we computed the inmate confinement time and transferred that and other variables to statistical software. Our analysis is enabling us to predict the jail confinement time of an offender, based on auxiliary information about the case. One type of analysis uses the most significant factors in a multinomial logistic regression, which gives a model to predict the length of stay. The model will be tested to determine its usefulness in predicting confinement time.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Kunde, Kristopher; Witt, Taylor	Robinson, David; Xu, Hui	Statistics

A Comparison of Methods to Model Similarity Among Categorical Sequences

The analysis of longitudinal sequences of categorical outcomes is a very common problem in applied statistics in many fields in social sciences and economics, and methods are being actively developed. Recent software implementations use Multifactorial non-parametric ANOVA (developed in statistical ecology to model community similarity). This paper compares this method with the Multiple Regression by Quadratic Assignment Procedure (MRQAP), originally developed for the study of social network data.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Zuluaga, Juan	Xu, Hui	Statistics

Forecasting Difficulties of the Severe Hail Outbreak in Southern North Dakota on 13-14 July 2010

During the late night hours of 13 July 2010, a line of supercell thunderstorms developed in southwest North Dakota and moved through southern portions of the state. There were numerous reports of softball or greater size hail associated with these storms, including a five-inch hailstone that fell at Prairie Knights Casino that tied the state record. Although the timing and size of the hail were unusual, ingredients were in place for a severe weather outbreak. A shortwave was moving through southeast Montana at the time of convective initiation. Surface dew points were in the upper 60s°F throughout much of southern North Dakota. Also, the source region for instability contained CAPE values exceeding 4000 J/kg. However, this event was poorly forecast. While the Storm Prediction Center had south central North Dakota under a Slight Risk for severe weather, the potential for a severe hail outbreak was not mentioned in the Convective Outlook issued two hours prior to convective initiation. There was also no mention whatsoever of southwestern North Dakota, the region of convective initiation. It should also be noted that Numerical Weather Prediction models failed to produce widespread, intense convective precipitation. This presentation will look into reasons why this event was not well forecast, focusing on the possibility that an atmospheric gravity wave, undetected by forecasters and models, acted as the main forcing mechanism.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Hollan, Michael	Kubesh, Rodney	Earth and Atmospheric Sciences

Session F-VN | **Sociology and Anthropology II** | **Voyageurs North**

Men's Groups and Movements Research Methods Paper

This work, once again, builds off of two other works previously presented throughout the day here at the Colloquium (Seeing the other presentations will enhance an understanding for this project, but they are not required to understand what is being presented here). After gaining an understanding of the various men's movements and organizations, it is important to compile what professionals are saying about the current men's movement. What is the goal of the current men's movement? Do the various organizations work together to promote unity within the men's movement? What are some issues that the men's movement might run into down the road? These questions will be posed to professionals in the field and an analysis of what they say will be presented along with a brief backdrop to the research proposal.

Presentation Index: F-VN 1 **Present Time:** 2:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Svare, Nathan; Gelormino, Kevin	Zuo, Jiping	Sociology and Anthropology

Methods Research

Many activists seek social change to better a situation they are passionate about. However there are many different methods to achieving social change. The intent of this research is to examine what those with activism experience believe to be the best methods leading to social change, with a focus on reformist and revolutionary movements. By that we mean working within the rules and guidelines of a system to achieve social change (reform) or complete changing and restructuring the social issue/system being address (revolutionary). The focus of this research is on social workers and professors, due to their considerable exposure to activist movements. The intent of this research is to use it to begin addressing issues of social change with a better conceptualization of how to truly succeed in achieving this goal.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Svare, Nathan; Gelormino, Kevin	Zuo, Jiping	Sociology and Anthropology

Using Charcoal to Date the Lillian Joyce Archaeological Site

The Lillian Joyce site is located in the Superior National Forest along the Minnesota-Canadian border. It was first excavated in September 2010 by a team of St Cloud State graduate students, professor and two Forest Service archaeologists. Presently, there are no methods to determine the age of the artifacts themselves. Instead, the radio-carbon date from a sample of charcoal recovered from the site will be used to determine the relative age of the artifacts.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Rovanpera, Jennifer	Muniz, Mark	Sociology and Anthropology

The Wedge of Symbolic Disruption: Negating the Sexual Either/Or

Sedgwick (1990) posits seven axioms for defining what it means to construct a gay male identity. We are all different from each other. Yet in terms of studying both gender and sexuality, there is an inherent tension between the two concepts. Gender has more developed theoretical frameworks than sexuality does, and anyone theorizing on both states different cases. Although we should not have preconceived notions on how to construct sexual identity in conjunction with gender identity, we need to consider that neither identity category is stable. Stability of identity categories leads to unwarranted assumptions about identity construction. Since the construction of sexual identity is inherently unstable, there are limits as to how frequently theorists restructure their debates. When theorists restructure their debates, they mystify their own theorizations and, thus, confuse themselves into believing something completely far from their ideation. Because of this mystification, identity construction is a source of confusion. Moreover, the literary debates on the construction of gay male identity are extremely contentious. In terms of how gay men place themselves in relation to literary debates, the process of identification takes place outside of the literature so that gay man position themselves as they wish to see fit. They see whatever automatically relates to them, react in an appropriately subjective fashion, and stick to it fleetingly. The debates on gay male identity construction consider the meaning of "orientation." Gay men "orient" themselves towards objects of desire (or necessity) depending on proximity. Simultaneously, Ahmed (2006), Butler (2004), and Edelman (2004), that queer resistance, as claiming a political position standing outside the convention of polarization, displaces identity construction vis-à-vis irony. Thus, I will argue that the use of irony, stating what one does not really intend, is a deliberate and symbolic disruption when claiming one's self external from an either/or dichotomy.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Pickar, Michael	Philion, Stephen	Sociology and Anthropology

Session F-VS **Engineering II** **Voyageurs South**

Cost Analysis of Cut to Length Blanks Process at Bobcat

Bobcat is a company which manufactures compact equipment for global construction, rental, landscaping, agriculture, grounds maintenance, government, utility, industrial and mining markets. Bobcat facility in Litchfield, MN has a saw machine which does all the sawing operations. The blanks/slugs are manufactured in-house but there was a lot of scrap in this process. The objective of the project was to implement a material/process handling strategy that will improve the overall production process and minimize cost. Evaluating the costs is an economic evaluation technique that involves the systematic collection, categorization, and analysis of program costs. Replacing the current in-house process with direct procurement from the supplier, while maintaining the quality standards was one of the economic decision-making strategies. The project required the team to work alongside the sourcing department, designating part numbers and implementing and training the employees to use the new system. When the cost for the in-house manufactured blanks/slugs was compared with the supplier manufactured parts, the final economic decision was made to implement an economic strategy or to procure the finished parts from the supplier.

Presentation Index: F-VS 1 **Present Time:** 2:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Majji, Poojitha; Farooqi, Tahir; Agarwal, Ankit Vinodkuma	Shah, Hiral	Mechanical and Manufacturing Engineering

A Study to Identify and Prioritize Employer Expectations for Graduate Program in Engineering Management

In recent years the demand for well trained engineering managers is increasing rapidly. Also, the expectations from the employers that hire graduates are changing at a rapid pace. The program at St. Cloud State University has to be aligned with the constantly changing market trends. The purpose of this ongoing study was to identify and prioritize the customer expectations to develop a customer focused curriculum for the graduate program in Engineering Management. Quality Function Deployment (QFD) technique was used to achieve the objective of the study. To ensure that the customer expectations are taken into consideration at all levels of the product development process, the employers were identified as the primary customer for the study. The customer requirements or expectations were collected from the job descriptions posted on the web. Affinity diagram was used to group customer requirements based on their natural relationships. The students of SCSU cohort program were asked to prioritize the customer requirements after the clustering was done. Statistical tools were used to reduce or eliminate the customer requirements that were of low importance. This paper will discuss the results obtained from the study.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Madhavaram, Sudhir Rao; Mehta, Yash	Shah, Hiral	Mechanical and Manufacturing Engineering

Electric Car Chassis

This project is to design and fabricate an electric car that will be fully operable for the 2011 school year. The project will involve the design and fabrication of mechanical parts such as the chassis, suspension, and steering. The car will primarily be designed and built on the St Cloud State University campus. The car will also carry an acceptable amount of weight for two passengers while still being able to handle city driving speeds. It is being designed to primarily operate on paved roads in good driving conditions. This car will not only be a form of transportation but also a tangible thing that can be shown off for both the mechanical and electrical engineering programs at SCSU.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Krone, Adam	Byun, Jeongmin	Mechanical and Manufacturing Engineering

Implementing Lean Principle in Manufacturing Environment to Increase Productivity

Bobcat is a world renowned brand which produces heavy equipments for construction industry. Currently Bobcat has three manufacturing plants in the United States of America. Among its plants, the plant located at Litchfield, Minnesota is dedicated to produce more than 500 different attachment models that serve markets such as agriculture, personal use, landscaping and construction. These attachments go through the process of forming, welding, painting, drying, and lastly assembling. There are different processes that are involved in assembling as well. This paper discusses the project of implementing Lean principle to analyze the value added activities and increase the productivity of the process for one family of the Bobcat Attachments.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Ullah, ASM	Shah, Hiral	Mechanical and Manufacturing Engineering

Session G-B | **Poster Presentations II** | **Ballroom**

Stearns County Chlamydia Report

Because Stearns County Chlamydia rates were 300 times the national rate this year, Stearns County requested we look at possible explanations/causes of increased rates. Significance: Chlamydia is an infection that can spread throughout members of the community who engage in sexual activity because it is often asymptomatic and can go undetected. If left untreated, problems such as: pelvic inflammatory disease, infertility in women, and sterility in men can occur. Methods: Using a descriptive design, we collected data from clinics by administering a survey through interview. We contacted fourteen potential clinics via email and phone using non-probability purposive sampling. Sample size was 5 clinics. Data Analysis: (a) Coded each item of the survey (b) Calculated mean, median, mode, and range of ordinal data (c) Created tables and graphs of our statistically significant findings (d) Interpreted the meaning of the findings (e) Developed implications according to findings. Interpretation of Findings: 60% of the clinics believed that Stearns County provides adequate information regarding Chlamydia. 80% of the clinics strongly agreed that the most common ages with positive tests for Chlamydia are 19-24 year olds. 80% of the clinics reported offering women STI screenings with their annual pap smear. 40% of the clinics reported no increase in the amount of men being tested with the availability of a urine test. 40% of clinics reported an increase in the amount of men being tested with the availability of a urine test. 80% of the clinics reported an increase in Chlamydia rates from the past year. 60% of the clinics agreed according to their experience with patients testing positive do not take this result seriously. Implications of Findings: Increase the information and guidance regarding Chlamydia from Stearns County Public Health to the clinics for the community. Further education needs to be provided to 19 to 24 year olds regarding testing and prevention. All women should be offered STI screening at their annual pap smear. Increase the awareness of urine testing availability. Conclusion: All clinics interviewed continue to follow MDH guidelines on reporting positive results.

Presentation Index: G-B 1 **Present Time:** 2:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Hoffarth, Samantha; Fiegen, Melissa; Johnson, Timothy; Carlstrom, Rebecca; Landwehr, Kimberly; Anderson, Erik; Olinger, Britta; Adkins, Jessica; Janckila, Jennifer; Koshiol, Andrea	Lenz, Brenda; Henry, Vonna; Hiemenz, Melinda	Nursing Science

SCSU Survey

This spring, SCSU Survey is conducting a study of SCSU students to find out their views and opinions on a variety of topics. These include: questions on student housing; mental health issues; connectedness and student engagement with the campus and university activities; advising issues; the Social Host Ordinance; campus safety; budget concerns and related cutbacks; and certain demographic characteristics. The poster will highlight the most interesting and important findings, such as campus safety and views on the St. Cloud Social Host Ordinance. Comparisons to previous years' results will also be made. All student presenters have an active role in the design and implementation of the survey during spring semester, 2011.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Haggstrom, Brady; Archer, Julie; Martinez-Schuldt, Ricardo; Kellar, Donald	Frank, Stephen	Political Science

STUDENT RESEARCH COLLOQUIUM ABSTRACTS

An Analysis of the Level of Service for Multi-modal Transportation Systems on the SCSU Campus

The automobile continues to be the dominate means of transportation in the St. Cloud area, and this has made parking and auto congestion in the SCSU campus area a major issue. This issue could be lessened by providing convenient mass transit, safe sidewalks and bike lanes as alternatives to auto use. This analysis will use Multi-Modal Level of Service Indicators to assess the convenience, comfort, safety, and security of the transportation options other than auto use available to students, faculty, and guests. Data will be collected by observation of sidewalks, bike paths, and public transportation facilities. This will include observation of the different amenities provided to those people that choose an alternative to auto travel such as bus stops, pedestrian facilities and bike storage. The expectations of the analysis is that we will find that the automobile is still the dominate transportation choice because there is few other options, and the alternatives are inconvenient. We hope to find ways that the SCSU campus could be more pedestrian friendly, accessible to bike traffic, and to provide access to auto alternative transportation.

Presentation Index: G-B 3 **Present Time:** 2:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Omot, Obuuy; Diedrichsen, Douglas; Olund, Colton; Haider, Daniel; Demee, Jason	Woldeamanuel, Mintesnot	Community Studies

Physical Activity in Kandiyohi County

Our research was based on modifying the SHIP survey to focus research on physical activity and preferences as it relates to the Hispanic and Somali populations in Kandiyohi County. Significance: Obesity is increasing at an alarming rate in the United States. Obesity leads to high blood pressure, diabetes, heart disease, cancer, and other debilitating diseases. Within the population, Latinos are disproportionately represented among the overweight and obese, and Somali residents report a low level of physical activity. Methods: The study design was descriptive. The sample was conducted by Convience, and was a non-probability sample. The study had 30 participants agree to participate in the survey. From the 30 participants, 17 self-identified as Hispanic, 12 self-identified as Somali, and one self-identified as Karen. Inclusion criteria included over 18 years of age, as well as those who identified themselves as Somali or Latino. SHIP survey was modified to 18 questions and focused on activity and demographic information. Survey was reviewed by outside researcher and Kandiyohi Public Health Agency to provide validity. A script was used by each surveyor to produce rigor and ensure concepts were understood by the Somali and Latino participants. Survey had a disclaimer in the beginning to ensure that it was voluntary participation and they could stop at any time.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Simon, Ashley; Petersen, Andrea; Pedersen, Melissa; Sapletal, Elisha; Theisen, Eric; Major, Katie; Skaja, Tracy; Hilsgen, Eric; Benson, Lisa; Jansky, Sarah	Lenz, Brenda; Hiemenz, Melinda; Warner, Susan	Nursing Science

Inhibition of Planarian Paroxysms by Riluzole

Planarians, commonly known as flatworms, are non-parasitic invertebrates that belong to the phylum Platyhelminthes. Biochemical and immunochemical analysis have shown that planarians contain all the neurotransmitters that are found in vertebrates and also are shown to possess a bilaterally symmetric nervous system very similar to humans. Previous studies in our laboratory have shown that the planarians are useful as simple model organisms for investigating the behavioral effects of drugs and we have also shown that they can be used as quantifiable endpoints for detecting the effects of convulsant and anticonvulsant drugs. In this study, we will test the effects of Riluzole on the N-methyl-D-aspartate (NMDA) and L-glutamate induced planarian seizure-like activity (SLA). Riluzole, an anti-convulsant, is known to mediate its action by inhibiting the neurotransmission mediated by NMDA receptors, a type of ionotropic receptors that mediate excitatory neurotransmission in the central nervous system. Seizure activity is exhibited by model organisms when the delicate balance between excitation and inhibition in the brain is altered. We hypothesize NMDA and L-glutamate to induce SLA in planaria and Riluzole, which is an NMDA antagonist to inhibit the convulsant-drug induced SLA. The results of our investigation will be presented in the colloquium.

Presentation Index: G-B 5 **Present Time:** 2:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)
DeSaer, Cassie; Nelson, Briegette	Ramakrishnan, Latha	Chemistry

Measurement of Glutamate and GABA in Planaria

Planarians, commonly known as flatworms, are non parasitic invertebrates that belong to the phylum Platyhelminthes. Biochemical and immunochemical analyses have shown that planarians contain all the neurotransmitters that are found in vertebrates and also are shown to possess a bilaterally symmetric nervous system very similar to humans. Planarian behavioral studies in the presence of drugs acting on neural transmission have confirmed that they could be used as simple experimental model organisms to investigate interactions between neurotransmitters and their protein targets. Glutamate and ?-aminobutyric acid (GABA) are the major excitatory and inhibitory neurotransmitters, respectively, found in the mammalian central nervous system. Previous research conducted in the laboratory has shown that in the presence of picrotoxin, an antagonist of the chloride-conducting channels of the GABAA receptor protein, planarians display an increase in seizure-like activity (SLA). To determine the biochemical basis for this observed paroxysmal behaviors, we will do a fast extraction of neurotransmitters from planaria homogenates, followed by derivatization using 2,3-naphthalene dicarboxaldehyde (NDA) and detection using high-performance liquid chromatography (HPLC) coupled with fluorescence detection. We will present the results of our study in the Student Research Colloquium.

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

Student Presenter(s):	Sponsor(s):	Department(s)
DeSaer, Cassie; Dalhoff, Zachary	Ramakrishnan, Latha	Chemistry

Analyzing Walkability Crossability of Downtown Neigborhoods

Our research focuses on walkability and crossability of Downtown Saint Cloud, Minnesota from the worker point of view. People tend to walk more within Downtown neighborhoods that are well planned. A good planned downtown offers a wide variety of benefits and entertainment while providing a clean, safe and appealing neighborhood that serves people from all walks of life. It also creates social interaction, pedestrian friendly environment, new businesses and increases property values. The objective of this research is to assess the level of walkability and crossability of Saint Cloud downtown area and to evaluate the perception of workers towards the physical characteristics of the walking environment through a survey. Data will be gathered through an online response of downtown employees and city officials to the survey questions. The survey will include the socio-demographic background of the respondents and their personal observations and attitudes towards walking and crossing facilities of the downtown area. The expected result of this study is the formulation of an index score that shows how downtown workers perceive the safety and convenience of sidewalk and crosswalk environments, accessibility of downtown attractions and the traffic situation of the downtown area. This research will recommend suggestions how the walkability and crossability is improved. Our research may also assist policies such as making the downtown area pedestrian-friendly and more welcoming for both locals and people visiting.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Pratt Blenker, Julie; Abdi, Mohamed; Belden, Christopher; Holmbeck, Elizabeth; Nesterenco, Tatiana	Woldeamanuel, Mintesnot	Community Studies

Crystallization of Muscle Fatty Acid Binding Protein With Non-stroidal Anti-inflammatory Drugs

Fatty Acid Binding Proteins (FABPs) are intracellular carrier proteins abundantly found in the various tissue of the human body. The function of the FABPs is tissue specific and proposed roles include: transfer of fatty acid between extracellular and intracellular membranes, regulation of lipid storage, and lipid mediated gene expression in adipose tissue and macrophages. It has been demonstrated that the adipocyte FABP (a-FABP) has a fundamental role in obesity, type II diabetes and atherosclerosis. Molecules which inhibit the function of the a-FABP could have roles in the treatment of metabolic syndrome. The x-ray structures of FABP bound to the non-steroidal anti inflammatory drugs aspirin and ibuprofen recently solved in our laboratory provide a foundation for the development of a-FABP inhibitors. However, as fatty acids are the sole energy source in cardiac muscle, inhibition of the muscle isoform would have dire consequences. In order to develop a-FABP inhibitors, that do not bind muscle-FABP, we have begun to study its structure by developing a process to crystallize inhibitors bound to muscle FABP. Application of the depth knowledge of FABP Structure from our efforts could be used in developing structure based drug for treatment of obesity, type II diabetes and atherosclerosis.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Kharel, Subash	Jacobson, Bruce	Biological Sciences

Cardiovascular Risk in Clients Age 30-64: Concepcion, Chile

Cardiovascular disease is the main cause of morbidity and mortality in Chile. A descriptive study was done in Concepcion, Chile in order to determine the prevalence of risk factors for cardiovascular disease. Data from a sample size of 100 participants consisting of 63 females and 37 males was gathered using the Examen Medicina Preventina (EMP) assessment tool and three survey questions regarding participant perception of health status during annual client health screenings in a public health setting. Cardiovascular risk was determined by analyzing prevalence of smoking, elevated body mass index (BMI), hypertension, sedentary lifestyle, and 1st degree family history of a cardiovascular event or diagnosis. 54% of males and 84% of females were considered overweight or obese (BMI >25). 86% of males and 97% of females reported behaviors that indicate a sedentary lifestyle. 24% of males and 28% of females felt that they had what they needed to be a healthy person.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Johnson, Jenna; Rausch, Samantha	Lenz, Brenda; Hiemenz, Melinda	Nursing Science

The Movements of Small Mammals in an Experimentally Fragmented Landscape

As human populations expand, habitats become more fragmented. The effects of habitat fragmentation on animal populations have been discussed in the literature, but there is much more that needs to be studied. This presentation provides preliminary results from a site that is to be fragmented in Morrison County, MN. The site is the MacDougall Homestead outside of Royalton, MN, approximately 30 miles north of St. Cloud, MN. Three study species are common to Minnesota: three-lined ground squirrel (Spermophilus tridecemlineatus); meadow vole (Microtus pennsylvanicus); and deer mouse (Peromyscus maniculatus). The results provide information on the population sizes, recapture rates, and home range sizes of these three study species, which will be compared to the results calculated after the site has been fragmented. A total of 38 individual ground squirrels were captured with a 74% recapture rate, 62 deer mice with a 52% recapture rate, and 68 meadow voles with a 37% recapture rate.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Ryan, Christine	Cook, William	Biological Sciences

Effect of JAK3 Mutation on Insulitis Development in a Mouse Model of Autoimmune Type 1 Diabetes

Type 1 diabetes (T1D) is characterized by a decrease in production of insulin which is a hormone that is produced in beta cells of the pancreas. The function of insulin is to regulate blood sugar level by removing excess glucose from the bloodstream. T-cells are a part of the body's immune system. In patients with T1D, T-cells attack the beta cells that are located in the Islet of Langerhans in the pancreas. The process of accumulation of T-cells in islets is called insulitis. Insulitis is a hallmark histopathological lesion of T1D. T-cells express Janus Tyrosine Kinase (JAK3) which is an essential molecule for activation and proliferation of T-cells. The objective of our study is to analyze the effect of JAK3 mutation on insulitis development in a chemically (streptozotocin)-induced mouse model of autoimmune T1D. As JAK3-deficient mice appear to be slightly resistant to diabetes induction, we hypothesize that their insulitis level would be reduced compared to wild-type mice. Streptozotocin (STZ) will be injected into wild type and JAK3–deficient mice during the five-day period in a dose of 40 mg/kg/day. The pancreata will be removed on day 7, 14 and 28 post first STZ injection, placed in formalin for fixation, and embedded in paraffin. The slides will be stained with hematoxylin-eosin for evaluation of insulitis, or with anti-insulin antibody for detection of remaining beta cells. The level of insulitis in the mice will be semi-quantitatively evaluated, based on the level of infiltration (stage 0-4).

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

Student Presenter(s):	Sponsor(s):	Department(s)
Janckila, Stacy; Maraweera-Hewage, Vishakha	Cetkovic-Cvrlje, Marina	Biological Sciences

Autism Spectrum Disorder and Comorbidities in Wright County

A child with an Autism Spectrum Disorder (ASD) has impaired social interaction and communication. Autism requires multi-disciplinary treatment including medication and social therapy, psychology, medical care, and special education. ASDs have been increasing in Minnesota schools since 1992. The Minnesota Department of Health (2009) reports the average prevalence rate for children with ASDs was 1 in 150 eight year-olds. Students with an ASD commonly have comorbidities. In collaboration with Wright County Public Health Services (WCPH), we, as nursing students, conducted a research study to determine the interaction school nurses have with students that have an Autism Spectrum Disorder (ASD). A total of 13 school nurses were surveyed via email or follow-up phone calls. 11 responded and answered our survey questions. The survey included 18 Likert-scale questions, 10 demographic questions, and 3 questions regarding care provided. Key findings of the research study were that school nurses in Wright County: are responsible for students from several schools; report spending up to 30 minutes daily with students with an ASD administering medication and managing the students Individual Health Plan; 91% agreed or strongly agreed they had experience caring for these students; identified cognitive impairment, anxiety and attention deficit hyperactivity disorder (ADHD) as prevalent comorbidities; and less than half strongly agreed they felt comfortable caring for students with an ASD and the respective comorbidities. Implications of the study are: school nurses can serve as liaisons between parents, school professionals, and community resources; school nurses represent an important part of creating a school environment that facilitates optimal development for children with an ASD; and WCPH can have in-services on current ASD information to support school nurses. Further research could focus on increasing school nurses comfort level in caring for students with an ASD and comorbidities.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Janckila, Jean; Hickerson, Aleisha; Guenigsman, Alyssa; Marketon, Kayla; Carlson, Nicholas; Ochs, Megan; Shir, Hannah; Omanwa, Valentine; Warren, Leah; Stensland, Hannah	Lenz, Brenda; Hiemenz, Melinda; Morrison-Sandberg, Leslie	Nursing Science

Analyzing Factors Affecting the Auto Ownership of American Households Using NHTS.

For many years, American's main form of transportation has been the automobile but recently a movement has developed that shifts away from this trend. Due in part to the environmental impacts that automobile can have, now more than ever some Americans are taking a second look at their choice of transportation. The purpose of our research was to identify factors that influence auto ownership in American communities. In 2009, the Federal Highway Administration conducted a National Household Travel Survey and collected data on the travel behavior of the American Public. Through our research, we analyzed this data to understand the parametric relationship between auto ownership and variables such as race, income, and household location. The results of our research revealed some reasons why autos may have become so popular and how we can use this analysis result to encourage a shift of future transportation choice to a more sustainable option.

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

Student Presenter(s):	Sponsor(s):	Department(s)
King, Rachel; Othoudt, Aaron; Good, Katherine; O'Brien, Hugh; Lawler, Sean	Woldeamanuel, Mintesnot	Community Studies

Energy Efficent Home Options

With the economic conditions of the current day, homeowners are looking for opportunities to lessen the cost of their home energy. Throughout this research we will be discussing some possibilities of alternative energy for the home. Our main focus will be on the state of Minnesota and its residents. Through research and analysis we have come up with 3 options that we will focus on for the project- solar electric, solar water heating, and wind electric. The benefits of these options could remove the homeowner from the grid and provide enough energy to have a fully self-sufficient home.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Kauffman, Seth; Hovelson, Johannes; Othoudt, Aaron	Ugochukwu, Chukwunyere	Community Studies

The Development of a DNA Fingerprinting Method for Bacillus cereus

Bacillus cereus bacteria are aerobic, gram-positive, spore forming rods that cause food contaminations that lead to vomiting and diarrhea. B. cereus can be isolated from many foods that come off the grocery store shelf, such as honey, rice, and dried spices. Being able to track the source of bacterial contamination would be a key step in preventing future illness. Repeats in DNA sequences called Variable Number Tandem Repeats, or VNTR are commonly used to genetically fingerprint humans and bacteria. VNTRs are short DNA sequences that are repeated a variable number of times in a DNA region. The number of times a VNTR sequence is repeated directly affects the length of the repeat region. By utilizing polymerase chain reaction (PCR) vrrA, BCMS 19, and BCMS 20 were amplified (replicated) and sized by gel electrophoresis. A number of alleles were identified for each of the repeat regions in the isolates examined. Our preliminary data suggest that development of a VNTR genetic fingerprinting scheme may result in an applicable method for distinguishing between isolates of B. cereus.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Gucinski, Mark; Howe, Marie	Gulrud, Kristin	Biological Sciences

Regulation of PGC1-beta

We are interested in how a specific protein family, called PGC-1, is regulated in humans. The PGC-1 family is known to regulate metabolism in mammals by activating genes needed for this process. Their misregulation has been linked to heart disease, diabetes, and neurological diseases such as Parkinson's. Very little is known about the regulation of the PGC-1 family. The ultimate goal of our project is to find out more on how this protein family is regulated. It is known that tagging from Cdc4, which results in degradation, regulates the PGC-1a protein. Our research objective is to see if another member of the PGC-1 family, PGC-1β, is regulated by Cdc4 tags for degradation as well. Discovering if Cdc4 regulates all of the PGC-1 family proteins will give us insight as to how this family is regulated. This regulation can be inhibited or increased and may pose possible avenues for treatments in diseases associated with this protein family. Our research techniques focus on observing PGC-1β and Cdc4 in the same human cell. We hypothesize that if Cdc4 is an important regulatory protein for PGC-1β, the amounts of PGC-1β found in the cell will be altered accordingly. We are testing three important questions about the interaction of PGC-1β and Cdc4: Does an increase in amount of Cdc4 decrease the amount of PGC-1β, does Cdc4 bind to PGC-1β, and does Cdc4 add the tag which destroys PGC-1β? We have answered the first question and found that the two proteins of interest have an inverse relationship.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Bjorkquist, Angelica; Metzger, Nathan; Mann, Shaynna; O'Neil, Ashley	Olson, Brian	Biological Sciences

A Community Assessment Regarding Home Visits by Public Health Nurses

Meeker County Public Health (MCPH) Department noted a decline in Maternal Child Health (MCH) and Post-Partum (PP) women accepting public health nurse home visits. They are aware that women are receiving MCH and PP information through other means and are concerned about the quality and reliability of the information received and want to identify reasons why women chose to deny home visits. We assessed how they received pregnancy and post-partum related information and how they preferred to receive their information. MCPH had also expressed an interest in offering clients the option of receiving pregnancy and post-partum information from MCPH through electronic means. The research was descriptive exploratory research. A survey was given asking why home visits were not accepted, how these women were getting their information, and how they preferred to receive information from MCPH. The target population included pregnant women and PP women (children 6 months or less). There was a sample size of 34 PP women and 27 pregnant women with ages ranging from 17-46 with a mean of 27.5 years. Data found that 80% of the sample was contacted for home visits and 52% of those women did not accept. Data also revealed that 65% of women preferred to meet with a public health nurse person to person, 35% by phone, and 0% by text. When asked whether they would like to receive information by text, 44% strongly disagreed, 39% disagreed, leaving 15% who agree and only 2% who strongly agreed. Data for preference receiving information through e-mail showed 17% strongly disagreed, 37% disagreed, 42% agreed, and 4% strongly agreed. The data indicated that a larger percent of women decline home visits in Meeker county than accept but would rather meet the public health nurse face to face or by phone rather than through text messaging.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Palmquist, Jennifer; Benn, Dana; Kiffmeyer, Krista; Klein, Jessica; Kalbakdalen, Jessica; Bowman, Jennifer; Omare, Jeniffer; Neugebauer, Andrea; Kampen, Gina; Hoikka, Karyn	Lenz, Brenda; Hiemenz, Melinda	Nursing Science

Histological Examination of Sexual Differentiation in the Fathead Minnow

The presence of endocrine-disrupting chemicals in the aquatic environment has become of growing concern due to their widespread use in medicine, industry, and agriculture. Legislative actions are currently being prepared at the federal level to assess the effects of these chemicals through the testing of juvenile fathead minnows. The fathead minnow (Pimephales promelas) is a small fish species which is often used to assess the effects of chemical exposure on the developmental and reproductive health of vertebrate species which are exposed to these chemicals. However, certain problems exist with the use of fathead minnows. One of these problems is that the age of sexual differentiation, the age at which the fish becomes male or female, has never been determined for this species. Researchers at the Environmental Protection Agency (EPA) have identified genetic markers which may be able to predict the sex of the maturing fathead minnow and help determine the age at which sexual differentiation occurs. To validate these markers, fathead minnows were reared and collected at five-day intervals beginning at 0 days post-hatch and ending at 45 days post-hatch. After histological processing, the process of sexual differentiation in each fish was then assessed by light microscopy and the histological sex of each fish was compared to the sex determined by the EPA genetic markers. Our hypothesis was that newly discovered genetic sex markers in the fathead minnow can predict the sex of maturing fathead minnows and can be used to determine the timing of sexual differentiation in this species.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Lesteberg, Kelsey	Schoenfuss, Heiko	Biological Sciences

Immunophenotyping of T-Cells in Type 1 Diabetic JAK3-Deficient Mice

Type 1 Diabetes (T1D) is an autoimmune disorder which leads to the destruction of the insulin-producing beta-cells in the pancreas by immune cells known as T-cells. There are three main types of T-cells-T helper (Th), T cytotoxic (Tc), and T regulatory cells (Treg)-which are important in the development of T1D. They can be distinguished by their specific cell surface markers. The aim of this study was to quantify the T-cell populations involved in immunopathogenesis of chemically [streptozotocin (STZ)]-induced autoimmune T1D in C57BL6/J mice which lack expression of the protein Janus Tyrosine Kinase (JAK3). JAK3 plays an important role in the cell signaling of T-cells. When JAK3 is absent, the function of T-cells is severely impaired. To induce T1D, mice were injected with 40 mg/kg of STZ. The subpopulations of T-cells involved in the T1D development were quantified by flow cytometry using fluorochrome-conjugated antibodies specific for certain cell surface markers (immunophenotyping). It was hypothesized that JAK3-deficient mice that exhibit attenuated development of STZ-induced T1D would have decreased numbers of pathogenic and increased numbers of protective T-cells than wild-type mice which express JAK3. The results showed an increase in overall (CD3+), effector (CD4+CD62L) and Treg (CD4+PD1+) T-cells in JAK3-deficient mice. Interestingly, JAK3-deficient mice did not express common CD4/CD25/FoxP3 markers, typical for Tregs. STZ treatment decreased the CD3+, CD4+ (Th) and CD8+ (Tc) T-cells, while not affecting CD4+CD62L+ and CD4+PD1+ T-cells. Overall, these data suggest that protection against STZ-induced T1D in JAK3-deficient mice can be attributed to unchanged number of Tregs.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Lesteberg, Kelsey; Voegele, Alan; VanBruggen, Andrew	Cetkovic-Cvrlje, Marina	Biological Sciences

Does Symmetry Equal Beauty?

Facial symmetry influences the perception of attractiveness (e.g., Rhodes, Proffitt, Grady, & Sumich, 1998; Zaidel & Delieck, 2007). In addition to replicating the attractiveness of symmetrical faces, Malla and Veeramani (2009) found that people rated neutral facial expressions as more sad for asymmetrical faces while rating symmetrical faces as happy. Is the increase in perceived attractiveness related to the symmetry of the object or perceived emotional qualities of the object? In this study in addition to evaluating faces, participants also rated pictures of flowers on their symmetry and attractiveness. Participants viewed each flower individually on a computer monitor. They first judged the symmetry of the flower and then the attractiveness of the flower. If symmetry affects how pleasing we find an object in general, then the symmetrical flowers will be rated higher on attractiveness than asymmetrical flowers. If there is something special about human faces as it relates to symmetry and attractiveness, then no difference should occur between the two conditions of flowers. Data are currently being collected.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Veeramani, Viloshanakumaran; Rodriguez, Mario	Valdes, Leslie	Psychology

Restoring Minnesota Prairie Sites Dominated by Invasive Species via Successional Management Strategies

A thesis project at Camp Ripley Army National Guard Training Site will address the effectiveness of using assisted succession as a means of restoring areas dominated by perennial terrestrial invasive species: Common Tansy (Tanacetum vulgare) and Spotted Knapweed, (Centaurea stoebe). The purpose of this project is to design and implement an experiment that will test an assisted succession method of restoring perennial invasive-species-dominated areas into a native plant community. My experimental objective is to determine if assisted succession is an appropriate methodology for the restoration of Minnesota prairie ecosystems that are impacted by invasive species, as it has been shown that invasive species can severely degrade ecosystems where they invade. Assisted succession theory states that the disturbance regime within an ecosystem can be designed in a way that is actually beneficial to that ecosystem. The research question further involves determining which practices within this framework of assisted succession are most effective in restoring Minnesota prairie ecosystems that are degraded by the presence of these invasive plant species. This restoration will take place in spring 2010 through fall 2012 and will incorporate site manipulation of four seedbed preparations, two cover crop types, and two seed dispersal methods for each of these invasive species. I hypothesize that by introducing a competitive cover crop immediately upon intentional disturbance of these invaded areas, followed by the seeding of native grasses, an increase in the establishment of native grasses will occur. Also, a reduction of invasive plant species presence and persistence will be demonstrated. Once identified, the most successful combination of seedbed preparation, cover crop, and native grass seed dispersal method may be used by land managers on a larger scale in other restoration endeavors.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Hanson, Jamie	Arriagada, Jorge	Biological Sciences

Product Testing for Microbiocidal Activity

Activeion Cleaning Solutions LLC designs and develops a technology that kills microbiological germs. The Activeion™ ionator™ is one of the products manufactured by Activeion with this unique germ reduction technology. The Activeion technology utilizes regular tap water to kill up to 99.9% of bacteria. Unlike conventional methods used for killing germs, the Activeion technology uses electricity (specifically an electrical field), not hazardous chemicals, to kill bacteria and viruses. The technology is based on the biological science of electroporation. The purpose of this study was to test the microbiocidal activity of the ionator EXP™ spraying unit on three different bacteria; Escherichia coli, Staphylococcus epidermidis, and Mycobacterium smegmatis. These bacteria are surrogates for similar but more pathogenic bacteria like Escherichia coli 0157:H7, Staphylococcus aureus, and Mycobacterium tuberculosis. The results from this study demonstrated that the Activeion technology (electroporation), which applies an electrical field to water, killed various bacteria at a significantly higher rate compared to the control unit. The control unit was identical to the Activeion unit except for the lack of an applied electrical field. This study suggests that the Activeion technology could be a useful cleaning and sanitation alternative to traditional chemical products.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Read, Jeremy	Gulrud, Kristin	Biological Sciences

Effects of Goniothalamin Derivatives on HT29 Colon Cancer Cells

Goniothalamin is a compound isolated from the bark of Goniothalamus, an Asian shrub. This compound has been shown to be active against cancer cell lines by inducing apoptosis. Apoptosis may be triggered by oxidative stress from the buildup of OH radicals due reduced Glutathione (GSH) levels from the Goniothalamin. When cancer cells grown in culture are exposed to Goniothalamin, their growth is significantly impaired. Our research aims to manipulate the structure of Goniothalamin to make it more cytotoxic against cancer cell lines. An important component of Goniothalamin is thought to be the alpha-beta unsaturated lactone group. Using organic synthesis, we have created two new derivatives where different moieties were added to this position. Goniothalamin and each of the two new compounds were added to HT29 colon cancer cells in decreasing concentration, using a serial dilution. The cells were allowed to grow for 3 days after which we quantified the amount of cell growth compared to cells not exposed to the compounds. As expected, the data showed decreasing cell growth at increasing concentrations of Goniothalamin. Interestingly, one of the derivatives behaved identically to Goniothalamin while the other derivative lost all of its anti-cancer effect. These results demonstrate that adding chemical moieties to this position of Goniothalamin can affect its anticancer activity. Future studies will be aimed at finding additions to this position that increase the activity.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Hendrickson, Kathryn	Mechelke, Mark; Olson, Brian	Biological Sciences, Chemistry

Study of the Interaction of Ruthenium Benzimidazole Metal Complexes With DNA by Atomic Force Microscope (AFM)

Cisplatin (a platinum based anti-drug) -based therapies are used throughout the world to treat testicular and ovarian cancers. Many other metal complexes have been discovered as anticancer drugs to resist the tumor cells. In this regard, several Ruthenium benzimidizole complexes have been developed and are tested for their ability to inhibit tumor cell growth. The Ruthenium benzimidazole compounds such as Ruthenium (II) benzimidazole and Ruthenium (IV) benzimidazole are to be studied in this research. The physical interaction of these complexes with DNA will be explored using the Atomic Force Microscope (AFM) technique. Upon the treatment with the Ru (II) and Ru (IV) benzimidazole complexes some physical interaction with the DNA are expected to be visualized under the AFM. Ruthenium benzimidazole complexes have been shown to interact with DNA as judged by UV-Vis and fluorescence studies. However, how they may physically interact with DNA is not clear. We propose that AFM studies will provide microscopic evidence that they in fact interact physically. Accordingly, this study will be explore such possibilities.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Shrestha, Shiva	Sreerama, Lakshmaiah	Chemistry

An Investigation of the Knowledge, Behaviors, and Beliefs of 10th Grade Biology Students on the Effects of Drilling for Oil in ANWR

This research was done to answer the questions: What do high school biology students know about the outcomes of drilling for oil in the ANWR?, What are the high school biology students' behaviors regarding oil use?, and What are the high school biology students' beliefs regarding drilling for oil in the ANWR? In order to obtain this information, a 10-question survey was created and administered to 123 students from four biology classrooms. The completed surveys were picked up five days later from the department head and the data was analyzed to make conclusions, inferences, and recommendations. Through the analysis of the survey results, it was made clear that the high school biology students were knowledgeable about the possible outcomes of drilling for oil in Alaska's Arctic National Wildlife Refuge. Many of the students did not use much oil for personal use, as they had not begun to drive yet. The students did seem to believe that drilling for oil in the ANWR would have positive effects on the U.S. economy, and the gas prices. They also believed that drilling could have negative effects on the ecology of Alaska's ANWR, but the majority of the students still believed that the U.S. should in fact decide to begin production and drilling of oil in the protected area. If this project was completed again, it would be wise to change the questions in the behaviors section of the survey, and to get data from an even larger, perhaps older population.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Rogers, Carrollyn	Simpson, Patricia	Biological Sciences

Preserving Tradition within a Changing Homeland: Historiography, Cultural Identity and the Movement Patterns of the Bdewakantuwan Dakota

Following the United States-Dakota War of 1862, the traditional historical narrative regarding the fate of the Dakota peoples of Southwestern Minnesota became one largely of expulsion and exile. However, the movements of the Bdewakantuwan Dakota leading up to and following the Dakota Conflict suggest the survival of a strong cultural identity and association with their traditional homeland. Using ethnohistorical records, historiographical analysis, archaeological evidence, imagery and oral tradition, along with the examination of various written sources, this project strives to delineate the historical movements of the Bdewakantuwan Dakota in the region that is now present-day Minnesota. By showing the clear paleo-Indian presence that eventually evolves toward the establishment of Dakota tribes, I argue that these tribes ultimately exhibit remarkable resilience throughout European settlement by continuing, of course, to persist and thrive to this day.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Carlson, Kelsey	John, Gareth	Geography

Characterization of Single Crystal Tetracene Derivatives

Organic semiconductors have shown great potential for being a more cost effective resource for electronic devices than their inorganic counterparts. The compound 5,6,11,12-Tetrachlorotetracene has shown promise for being able to carry a charge more effectively than its parent compound tetracene due to its crystal stacking structure, which allows for a greater Ï€-orbital overlap that may allow charge carriers to flow more freely. By synthesizing these compounds and growing large single crystals of both tetracene and 5,6,11,12-Tetrachlorotetracene their respective charge carrier mobility can be tested in order to determine the usefulness of these materials as semiconductors based on their solid state structures.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Lohrman, Jessica	Lidberg, Russell; Neu, Donald	Chemistry, Physics, Astronomy and Engineering Science

Influence of Soil Type on Dry Down Patterns of the North Fork of the American River Basin

This study examines how soil type influences the way the North Fork of the American River Basin located east of Sacramento, CA drains following snowmelt or significant rainfall. Water content at 10.0 and 15.0 cm depths was measured at several soil monitoring sites that are operated by the National Oceanic and Atmospheric Administration's Earth System Research Laboratory. Soil moisture changes as a function of time at six locations were examined from the peak soil wetness fraction to the point in time when the soil moisture reached its seasonal minimum (a period commonly referred to as the dry down period). Precipitation amounts and air temperatures during the wet season prior to the dry down were inspected to ensure that seasonal variations did not affect the dry down pattern from year to year. The Upper Basin sites, comprised mostly of alluvium and volcanic-originated soils, showed a more rapid dry down compared to the Lower Basin, which is characterized by soils with high clay content. It was also observed during the months of October through May for the years 2008, 2009, and 2010, that in general, more precipitation fell over the Upper Basin than the Lower Basin, with the maximum precipitation falling over the region where the basin soil type changes from having high clay content to soils that are primarily alluvial and volcanic in origin. These results suggest that certain climate change scenarios could increase the precipitation at higher elevations, and in turn, increase the flood potential for the already flood-prone Sacramento area. The Thornthwaite Monthly Water-Balance Model was also applied to several sites to investigate how this model performs with soil moisture. It was found that the model slightly underestimated the soil moisture for the Lower Basin and transition zone, but overestimated the soil moisture for the Upper Basin.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Thorstensen, Andrea	Fedele, Juan	Earth and Atmospheric Sciences

Deforestation

Deforestation in the Amazon is the destruction of forests to create clear land for agricultural use. This investigation takes a look at middle school students' knowledge, beliefs, and behaviors regarding deforestation in the Amazon Rainforest. Results of this investigation show that the majority of the students have little to some knowledge about deforestation. Results also show that some students are unaware of their behaviors effect on the rainforest, and most students believe deforestation should be regulated through new technologies.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Pedersen, Carin	Simpson, Patricia	Biological Sciences

Comparative Effectiveness of Treatment Schedules for Childhood Speech Sound Disorders

Childhood speech sound disorders are the single most common disorder affecting up to 10% of children to some degree (ASHA, 2010). Severe childhood speech sound disorders are often directly responsible for delays in language, literacy, and social development and are associated with negative long-term consequences such as school dropout, juvenile delinquency, and unemployment (Caruso & Strand, 2000). Tragically these types of disorders more often target children of families of low socioeconomic status (e.g., inner city, rural, and new immigrant families). Early treatment is critical and has been proven effective (Gierut, 1998), however the cost and time involvement is prohibitive for families, the federal government, and health insurers. We are currently collecting and analyzing data from the St Cloud State University Clinic in which speech therapy is already ongoing. Data from 4 subjects is being analyzed within a single subject design with multiple baselines across individuals, a robust design for evidence-based research (Kazdin, 2010). We are comparing the effectiveness of speech sound acquisition across two different practice schedules. Massed practice consisted of practicing new target sounds repetitively (e.g., SUN, SUN, SUN). Distributed practice consisted of practicing new target sounds in different contexts (e.g., SUN, SOAP, SAT). If successful, this research will reveal the optimal practice schedule associated with increased speech improvement per clinic visit and reduced total clinic visits. Because the design is robust, the experimental manipulation is simple and generalizable, and the client sample is representative this information has the potential to be applied in most clinical settings. The cost and time savings of this information could potentially be immense and the impact on quality of life of families affected by these disorders would be significant.

Presentation Index: G-B 30 **Present Time:** 2:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Holman, Whitney	Smits-Bandstra, Sarah; Griffin, Lori	Communication Sciences and Disorders

Surface Modification and Characterization of Stabilities of Aspirin

Pharmaceuticals containing hydrates, esters, lactones, and/or amide functional groups undergo physical and chemical changes during storage and processing conditions. The storage lifetime and the use of these substances, for example aspirin - dicalcium phosphate dihydrate (DCPD), are limited by their stabilities. Surface modification of Active Pharmaceutical Ingredients (API) or excipients improves the chemical stability overall, though the scientific mechanism underlying these processes is not well understood. The main objective of our research is to investigate the factors affecting stabilities of aspirin and DCPD. The dehydration of DCPD is dependent on temperature and relative humidity (RH). With constant temperature of 32.2°C (+/- 1.1°C) and RH of 33.9 %, the dehydration rate of DCPD was 200 micrograms per hour and for the 1:1 weight/weight ratio of DCPD and anhydrous sodium sulfate was 80 micrograms per hour. This clearly shows that anhydrous sodium sulfate stabilizes DCPD. The rise in temperature increases the dehydration and intermediate RH (30-50%) has the maximum effect on dehydration. We have also monitored the dehydration by FT-IR and the effect of surface coating on the phase transformation.

Presentation Index: G-B 31 **Present Time:** 2:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Mandell, Matthew	Sivaprakasam, Kannan	Chemistry

Lateral Field Time-of-Flight for Determination of Surface Charge Carrier Mobility

The possibility 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 packaging structure of the organic molecule and may vary significantly at the surface of materials; this is an important aspect to consider when constructing such devices as organic photovoltaics, where charge transport and recombination processes occur. 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 in situ rather than injecting them through contacts. This allows 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 mobilites 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 semiconductors materials. One can then use these theoretical results to engineer optimal materials and structures to produce high performance devices.

Presentation Index: G-B 32 **Present Time:** 2:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Davies, Andrew; Schulzetenberg, Aaron; Lee, Desiree	Lidberg, Russell	Physics, Astronomy and Engineering Science

Development of a Chemotherapeutic Agent Derived from the Natural Product Costunolide

Many drugs used to treat cancer are derived from natural products. One particular natural product, costunolide, has shown tremendous cytotoxicity and selectivity against cancer cell lines. This compound is found in very small amounts naturally and therefore needs to be prepared synthetically to be a viable drug candidate. The goal of this project is to synthesize a compound that would mimic the cancer-fighting properties of costunolide. It was envisioned that the targeted costunolide analogue could be prepared in four linear steps from commercially available trans-cinnamaldehyde and levulinic acid. A key lactone intermediate was prepared via an acid-catalyzed Aldol condensation followed by a sodium borohydride reduction. All of the reaction intermediates were characterized using NMR spectroscopy, GC/MS, and IR spectroscopy.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Brethorst, Jason	Mechelke, Mark	Chemistry

Study of Proteins Involved in the Kinetoplast-Flagellum Connection in Trypanosoma Brucei via Tetracycline-induced RNA Interference

Trypanosoma brucei, a protozoan that causes African Trypanosomiasis, is characterized by a single mitochondrion with a disk shaped DNA body called Kinetoplast. The objective of our study was to investigate the connection between the kinetoplast and the flagellum basal body, and the proteins involved in their interaction. pZJM and pLEW82:HA vectors were used to detect the function and location of the proteins of interest via antibody tagging and RNA interference with Tetracycline induction experiments. Cell growth curves showed Tet induced cells had significantly slowed growth and Flow cytometry and microscopy showed larger and stretched cells. Results suggest that these proteins play a vital role in regulating cytokinesis and thus cell division.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Alemu, Michael	Olson, Brian	Biological Sciences

Hire Me!

Customer satisfaction determines success in markets. In today's competitive job market, student candidates can increase their chances of being hired by aligning the criteria of preparedness with the needs and expectations of employers. This qualitative study of SCSU students explores areas of compatibility and disparity. The objective of our research is to discover what interviewee attributes are most attractive to Central Minnesota employers, to compare and contrast student perceptions of what employer's value in candidates, and to compare and contrast what Career Services training materials say. The qualitative study will survey a sample of local employers and SCSU students using a Likert scale survey. The results will be compared and contrasted with Career Services materials.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Yuan, Cheng; Olsen, Cassandra; Robison, Rhea; Ludwig, Peter; Bhatta, Lalit	Polacco, Alexander	Management

Determination of Bisphenol A in Various Samples Using a Microextraction Technique and High Performance Liquid Chromatography with Fluorescence Detection

Bisphenol A (BPA) is a toxic chemical that has been a concern in the media lately. There has been much research on BPA to develop techniques to analyze this molecule. Many of these include microextraction techniques to extract the BPA from sample which are then put through an instrument that separates and analyzes these analytes. There has been no research done involving milk samples and a microextraction technique using a liquid phase microextraction. The goal is to develop a simplified technique to extract BPA and analyze it using a high performance liquid chromatography (HPLC) fluorescence detector. The extraction technique is similar to that of dispersive liquid-liquid microextraction (DLLME), but involves one solvent instead of two. The anticipated results to be presented are the correlation between vortex time during a microextraction and the determination of the amount of BPA, the determination of the amount of BPA using different concentrations of BPA spiked deionized water using the microextraction technique to form a standard curve, the determination of BPA found in various samples of milk using the microextraction technique developed, and the potential matrix interferences from milk components such as proteins and fat will be investigated with spike recovery measurements.

Presentation Index: G-B 36 **Present Time:** 2:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Adamski, Danielle	Jeannot, Michael	Chemistry

Study of Anticancer Activities of Ruthenium-Benzimidiazole Metal Complexes Using Fluorometry

Cisplatin, a platinum based anti-tumor drug, has been used in the treatment of cancer. Tumor cells have shown chemo-resistance to cisplatin, which is one reason why scientists in the world are researching the development of other anticancer drugs. Ruthenium benzimidazole metal complexes have shown some cytotoxic activities as cisplatin does. Further studies of these metal complexes may lead to the possibility of development of ruthenium-metal complexes as anticancer drugs with fewer side effects and less chemo-resistance by the tumor cells. Anticancer activities of Ruthenium (II) benzimidazole RuCl3(o-OHPhBzIH)3, Ru-2 and Ruthenium (IV) benzimidazole RuCl3(o-HPhBBzl)3, and Ru-4 are to be studied. The interaction of these two complexes with DNA will be studied using fluorometry. We will use competitive binding studies in which DNA will be first treated with ethidium bromide. This complex fluoresces. Upon treatment with Ru-2 or Ru-4 the fluorescence is expected to decrease. Titration of Ruthenium benzimidazole complexes at constant concentration of ethidium bromide enables to calculate the binding constant, which indicates the affinity between DNA and ruthenium benzimidazole metal complexes.

Presentation Index: G-B 37 **Present Time:** 2:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Dhungel, Abishek	Sreerama, Lakshmaiah	Chemistry

Synthesis of a Novel Goniothalamin Analogue Designed to Deplete Intracellular GSH

The natural product goniothalamin exhibits cytotoxicity against certain cancer cell lines while causing minimal damage to surrounding healthy cells. Cancerous cells treated with goniothalamin experience a rise in harmful reactive oxygen species. This is an internal signal for the cell to undergo apoptosis or cell self-destruction. Glutathione (GSH) is an antioxidant found within all cells that helps maintain the cell's redox balance by reducing the reactive oxygen species produced during normal metabolism. In cancerous cells treated with goniothalamin GSH levels have been shown to decrease dramatically, thereby causing oxidative stress within the cell. Eventually, the increase in reactive oxygen species triggers a natural internal signal for the cell to initiate apoptosis. Recent research indicates that goniothalamin may react with GSH through a 1,4-conjugate addition reaction, thereby covalently bonding to GSH and rendering it inactive. It is hypothesized that by converting the ester in the lactone of goniothalamin to a ketone the analogue will more readily react with GSH. The goniothalamin analogue will be prepared in six steps from commercially available trans-cinnamaldehyde. The most important step involves four sequential chemical transformations to yield the key intermediate: a cyclic dione.

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Student Presenter(s):	Sponsor(s):	Department(s)
Wegwerth, Sarah	Mechelke, Mark	Chemistry

Effect of Signs of Safety on Child Protection Workers

Signs of Safety is a new approach to child protection that has exploded in Minnesota. Historically, this field has had high turnover and low job satisfaction. With the high levels of success in using Signs of Safety with families, we analyze whether the implementation of Signs of Safety could have an impact on the job satisfaction of child protection social workers.

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Student Presenter(s):	Sponsor(s):	Department(s)
Schoepf, Jennifer	Pfohl, Mary	Social Work

Persistence of Vision Display and Uniform Circular Motion Demonstration

In an uniform circular motion, if angular speed doubles then acceleration quadruples. A physics demonstration will be constructed to qualify and quantify the above relation in introductory physics classes. A "persistence of vision (POV) display" mechanically sweeps across a person's field of view, giving the illusion of a 2D display. We will be using the POV to display angular velocity and acceleration, eliminating the need for wireless communication between the rotating apparatus and a data acquisition system. The display device will be controlled by an Arduino microcontroller development board, while an accelerometer will be used to sense acceleration. The rotational speed is sensed by a Hall effect switch, which also doubles as the trigger for the POV display.

Presentation Index: G-B 40 **Present Time:** 2:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Chen, Jing; Yong, Shun Jie	Liu, Zengqiang	Physics, Astronomy and Engineering Science

Analysis of Permian Strata in the Summit Springs Anticline of the Central Butte Mountains in Nevada

The Central Butte mountain range in Nevada is located in the western portion of White Pine County. Strata that is exposed in the Butte Range is defined by a north-trending, large scale syncline with associated anticlinal structures found at the Summit Springs location. The large Summit Springs Anticline is centrally located above the center of the Central Butte Mountain Syncline and dips gently to the southeast. It is a topographic and structural high, forming a ridge five miles long and one-half mile wide. This area has been drilled by Continental Oil Company and Standard Oil Company in 1951-1952. The core that was investigated in this study was recovered from the Summit Springs location in the NW1/4 of the NW1/4 of S32, T29N, R60E, in 1988. Thirteen different thinsections were made from each unique rock type observed in the core. Cores were observed to consist of mainly micritic and dolomitic limestone, with lenses of anhydrite, gypsum, and vuggy limestone. Many of the limestone thinsections contain abundant microfossils including trilobite pieces and brachiopods. One thinsection contained oil stained fractures. These rocks are interpreted as belonging to the Arcturus Formation, which was thickened by the compressional forces that produced the folding of the area during an orogenic episode in the post-Early Triassic.

Presentation Index: G-B 42 **Present Time:** 2:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)
McDonald, Lori	Pekarek, Alfred	Earth and Atmospheric Sciences

Nanowire and Single Crystal Growth Techniques for Perylene Tetracarboxyl Diimide Derivatives

Perylene tetracarboxyldiimide (PTCDI) derivatives have shown utility for use in a new generation of organic electronic devices. The design of these devices requires optimization of the charge carrying mobility in the crystalline PTCDI derivative for a specific application. By modifying the N,N' substituent on the PTCDI derivative the solid state packing structure of the crystal can be controlled. The solid state packing controls the interaction between adjacent molecules, and affected the type and magnitude of the carriers. Thus, the major charge carrier can be selected, and magnitude of that carrier can be tuned by controlling the molecular packing by altering the various R-groups on the N,N' positions. This study aims to develop the expertise required in synthesis, purification and growth of highly ordered, highly pure crystals and nanowires of PTCDI derivatives. The carrier mobilities can then be experimentally determined and compared to carrier mobilities derived from quantum mechanical calculations.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Backer, Brian; Khadka, Manoj; Deuermeyer, Hank	Lidberg, Russell; Neu, Donald	Chemistry, Physics, Astronomy and Engineering Science

Renewable Energies

This project included a survey of an SCSU EAS 230 class in November 2010. This survey was broken down into three main aspects. The aspects were the student's beliefs on greenhouse gas emissions and global warming, their behaviors on how they get to school, and their knowledge of solutions to reducing greenhouse gases in the atmosphere. From these surveys I have compiled graphs to represent their answers. After analyzing the graphs I have made conclusions about each of the questions individually and also I made recommendations and inferences for the three different aspects of my survey. I will include all of this information including the graphs, survey questions, conclusions, inferences and recommendations and the procedure for how the survey was administered.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Otteson, Spencer	Simpson, Patricia	Biological Sciences

Using AFM to Track Changes in Surface Topography

Atomic Force Microscopy (AFM) is used to measure changes in the topography on the crystalline surface of the iron oxide, magnetite. In the environment, iron oxides regulate the movement of trace elements in water and soil systems, including heavy metals. Under environmental conditions, when exposed to water and other aqueous species, the surface arrangement of atoms and atomic composition can be altered form the natural arrangement of the mineral. The resultant changes to the surface of the crystal can significantly alter the reactivity, the rate at which a chemical substance reacts. Our research focuses characterizing the formation of oxide overlayers composed of other iron oxide phases that grow on the magnetite surface with exposure to environmental conditions using AFM. The initial magnetite crystal surfaces are prepared using a chemical mechanical polishing (CMP) procedure resulting in a less rough surface as determined by AFM. The magnetite crystal is then submerged into an acidic electrolyte solution (pH 5, 0.1 M sodium perchlorate) with an applied electrical potential of +641 mV which in the maghemite regime, an oxidized form of magnetite. The resultant changes to the magnetite surface are monitored and characterized using AFM.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Harguth, Jacob; Workman, Michael	Petitto, Sarah	Chemistry

Stroop Effect And Cueing

The Stroop color-naming task (Stroop, 1935) tests the flexibility of your control on your attention and response. There are two conditions, congruent and incongruent. In the congruent condition, the stimulus words match the color of the word (e.g. the word red is visible in red ink). The incongruent condition consists of the color being implied is written in a different color (e.g. the word red is visible in blue ink). In this study, participants did the color naming task with a cue. The cue appeared before the color stimulus and either matched the hue of the word or the identity of the word. The Stroop effect was replicated and the cue enhanced this effect. Implications for attentional control are discussed.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Kautz, Amber; Feldick, Ashley; Weber, Amanda	Valdes, Leslie	Psychology

Phase Locked Loop

The phase locked loop was introduced in 1932, considered an exotic device in those days, it gained increased interest in the mid sixties when it first became available as an integrated circuit. The phase locked loop is found today in every home, in television receivers, radios, phones. The PLL keeps part of our world orderly. If we turn on a television set , a PLL will keep heads at the top of the screen and feet at the bottom. Another PLL makes sure green remains green and red remains red. A PLL is a circuit which causes a particular system to track with another one. More precisely, a PLL is a circuit synchronizing an output signal with a reference or input signal in frequency as well as in phase.

Presentation Index: G-B 47 **Present Time:** 2:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Compaore, Hassane	Hossain, Md	Electrical and Computer Engineering

Session H-G | **Social and Behavioral Studies II** | **Granite**

Technology in Technology Education

The concept is that students in Technology Education should be utilizing technology and resources available to the students to give them control of their own education. By utilizing technology such as computers, smart phones, iPods and the Internet students should be able to generate self-guided learning. A problem that Technology Education teachers face on a regular basis is safety. Teachers dedicate specific dates in their curriculum for safety lessons and demonstrations, and frequently students have to miss these lessons and demonstrations for various reasons. A simple solution to this problem is self-guided learning. Often, Technology Education teachers have to take time out of class and busy schedules to teach safety lessons and give demonstrations to those students who were absent. I am creating several Podcasts that demonstrate safety that Technology Education teachers can use when students are absent; this will allow the students to take control of their learning, and will alleviate Technology Education teachers of cramming in safety lessons and demonstrations in between managing labs and teaching lessons. The idea behind my research is that I can get students to take control of their education (at least in Technology Education), which will provide students with a rich learning experience, and will motivate them to take control of their learning in other areas of education as well.

Presentation Index: H-G 1 **Present Time:** 3:30 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Post, Hannah	Olson, Curtis	Environmental and Technological Studies

Effects of Currency Unions On International Trade

Since the inception of the euro in 2002, there has been much speculation in the area of how a monetary union affects the trade flows between countries. Theoretically, a monetary union effectively eliminates the transactions costs people incur when making international purchases, due to the costs associated with exchange rates. Andrew K. Rose's "One Money, One Market (2000)" research paper presents initial estimates that international trade tripled following the formation of a currency union, and much subsequent research has been done in search of a more "reasonable" estimate of the currency union effects. In this paper, I will reconstruct the model used by Rose, taking into account various errors and insights found in subsequent papers, and use current data to draw relevant interpretations of the currency union effect on international trade, specifically within the European Union.

Presentation Index: H-G 2 **Present Time:** 3:50 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Ohrt, Alix	Switzer, David	Economics

The Role of Textbooks in Elementary Schools: Teacher and Student Perceptions

The purpose of the study is to explore the role of textbooks in elementary schools, mainly based on teacher and student perceptions about the use, strengths, and weaknesses. To validate the data obtained through teacher and student interviews, I will use additional data obtained from the examinations of textbooks and supplementary materials, classroom observations and interviews with curricular key informants. Although my focus is the content of student learning, the effectiveness of the content area cannot be determined well without considering other intertwined factors such as instruction, assessment, school cultures and policies. Therefore, I am using *Multimethod strategies designed to widen up the range of results for determining the role of textbooks in elementary schools. Upon having informal conversations with administrators and teachers, I found out that the use of supplementary materials and technology has shaped the role of textbooks these days even in elementary schools. Having said that, I have made sure supplementary materials are addressed well in my interview questions. Since I am still in the process of obtaining approvals and collecting data, the results have not been finalized. This presentation will include my research purpose, design, and how I will validate and analyze the data with some findings that I will have collected at the time of presenting. *Multimethod Strategies: employ several data collection techniques such as participant observation, open observation, and in-depth interviews in an interwoven way (McMillan & Schumacher, 2001)

Presentation Index: H-G 3 **Present Time:** 4:10 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Kalayar, Chaw	Subrahmanyan, Lalita	Teacher Development

Session H-GN | **Economics III** | **Glacier North**

Effects of Household Debt on Household Durable Goods Consumption

In the wake of a financial crisis that lead to one of the deepest recessions in American history it is still apparent that there are no definitive answers as to its exact cause. Most agree that a perfect storm of bad lending policies, moral hazard, and global trade imbalances are most likely at the root of the causation. With such a vast array of causal forces at play there are many lenses by which one can view the events preceding the Recession of 2007-2009. These causal factors, which have been the topic of many research papers, have largely ignored the role of household balance sheets in the financial crisis. Through my research I would like to view those preceding events through a lens looking over the correlation between household debt and household consumption. More specifically I would like to study the quarterly time series relation between financial obligation ratios (FOR's) and durable goods consumption. My rationale for choosing the consumer durables time series produced by the United States Bureau of Economic Analysis is that as 13% (2010 Q4) of overall personal consumption expenditures and as a relatively elastic good it is the best way to measure household consumption behavior. Stone and Rowe proved this theory of durable goods when they demonstrated that short- and long-period elasticity's of durable consumption with respect to income and prices emerge as simple functions of one another. Moreover, as a highly elastic good, changes in durable goods consumption are the most relevant way to view fluctuations in consumer demand throughout the business cycle.

Presentation Index: H-GN 1 **Present Time:** 3:30 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Wilson, Michael	Hughes, Patricia	Economics

Race Matters

My senior project (Race Matters or Factoring the Incarceration Rate for Black Males or Policy Effects on Black Males) will take a look at the factors contributing to the growth of the Jail and prison systems in the United States to the largest in the world. My project will show through regression analysis, and subsequent research, that the War on Drugs and Sentencing Reform have had a direct impact on the number of people incarcerated in the United States and the percentage of the population incarcerated. I expect positive coefficients for all the independent variables. I expect the independent variable coefficients to increase after the onset of the United States War on Drugs. I will also run a regression analysis on all males and White males using the same independent variables to highlight the difference the War on Drugs and Sentencing Reform have had on Black males versus White males and Black males versus all males.

Presentation Index: H-GN 2 **Present Time:** 3:50 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Smith, John	Hughes, Patricia	Economics

Reducing Foreclosures

Looking into the latest recession we can certainly say that the housing crisis had an enormous impact on our economic situation. Foreclosure rates hit record highs and people were being forced out of their homes. The main reason behind this was the increase in the sub-prime mortgage lending industry and the loose underwriting standards held by banks. I am looking at foreclosures from a greater perspective, bringing in graphs and charts on other economic indicators that could have had an impact on foreclosure rates. Some of these indicators include unemployment rates, Consumer Price Index, Housing costs, U.S. population and Gross Domestic Product. I will be taking past articles and journals and combining them into my own journal with new data, information, and conclusion.

Presentation Index: H-GN 3 **Present Time:** 4:10 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Kingbay, Chad	Hughes, Patricia	Economics

Subscriptions and Redemptions vs the Economy

As markets fluctuate throughout the business cycle, one would expect cash flows in and out of investment vehicles to tightly follow the business cycle as well. It is assumed that investors in Hedge Funds are able to take more market risk and therefore their subscriptions (money into) and redemptions (money out) are not as varied as the business cycle. This paper will attempt to uncover patterns in market behavior, when investors buy into the market and when they pull out of the market. Common sense tells us we should buy low and sell high, but such timing is not an exact science. The model will show points during the business cycle where investment occurred and see how that correlates to the swings of the S&P 500 or GDP or whether it is more closely tied to interest rate and consumer confidence indices.

Presentation Index: H-GN 4 **Present Time:** 4:30 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Hansberger, Mark	Hughes, Patricia	Economics

Session H-GS **Computer Forensics** **Glacier South**

I Know What You Did, Your Hard Drive Told Me

There is a growing demand for computer forensics expertise to perform accurate and effective examination of digital evidence. Most of the information in digital evidence is processed or stored in some kind of magnetic media such as hard drive. Hard drive recovery in a computer forensic science requires the right knowledge and experience, specialized tools and facilities, and training. The successful data recovery depends on the usage of correct investigative tools and procedures to maximize effectiveness of evidence gathering. Some of the practical tools used are FTK, EnCase, Passware, Ethereal, LADS, WinHex, GIMP, Camouflage, and Snort. In this research we will conduct a forensic hard drive data investigation to access the data that may reside on the disk, but simply cannot be extracted in a regular manner. For example even when a file is deleted, the data is not actually erased from the hard drive; rather, the spot where the file was stored is allocated for reuse. Until that spot is actually used for storing new information, the data that was deleted is still recoverable. We will use specialized tools to extract data from hard drive that we have acquired on eBay and try to uncover the secrets of the owner through the hard drive. This project will highlight the importance of digital forensics in the computer world where unethical activities are performed every minute. It will also spread awareness of digital fingerprint left behind which are associated with the personal information and activities performed by the users.

Presentation Index: H-GS 1 **Present Time:** 3:30 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Sthapit, Sagun; Pradhan, Mandeep	Schmidt, Mark	Information Systems

Digital Forensics in the Real World: How They Busted the Most Notorious Cyber Criminal of Our Time

As digital technologies advance, network security experts play a constant game of catch-up, defending against the latest threats to data security. Cyber criminals have become more adept at exploiting weaknesses, translating network vulnerabilities into cash. As data security risks have increased, a new field has emerged. Information Assurance, and its sub-discipline, Digital Forensics, have defined the new world of criminal, investigative science. Digital forensics analysts exploit the nuances of data storage devices to recover incriminating digital evidence. Digital Forensics is a complex discipline, requiring the technical skills of computer science, knowledge of legal processes and rules of evidence admissibility, and the investigative prowess of behavior analysts. This paper explores one of the most egregious computer crimes ever committed and how Digital Forensics was used to crack the case. Referred to as the "Al Capone of Cyber Thieves," Albert Gonzalez secretly assembled an international gang of computer hackers who successfully penetrated the networks of large corporate retailers and card processing companies. Once on the network, Gonzalez' gang remained undetected for months or even years, harvesting credit card information that was sold on the black market. Employed by the Secret Service, Gonzalez' led a dual-life. He aspired to a life of crime, drugs, and women, emulating his favorite song by rapper 50 Cent, "Get Rich or Die Tryin'". The story plays out like an episode of CSI. Cracking the case, however, was nothing like prime time television, where cases are solved over the course of a 30 second commercial break. Digital forensics investigators on the Gonzalez case spent countless hours, tediously piecing together shards of digital evidence recovered from devices across the gang's global crime network. In the end, investigators amassed an air-tight case, putting Gonzalez and his men behind bars for lengthy sentences.

Presentation Index: H-GS 2 **Present Time:** 3:50 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Sundberg, Lawrence	Schmidt, Mark	Information Systems

A Practical Approach to Computer Forensic Investigation

What exactly do computer forensic analysts do? How can digital forensics help law enforcement or corporate security managers contribute to factors of an investigation? If you want to solve a puzzle isn't it often best to have all the pieces? Computer forensics contributes one piece of the investigative puzzle through the ability to examine recovered files, internet cache, and slack space. Computer Forensics is digital investigation which encompasses knowledge of investigation, technology, and legal issues. It entails finding, protecting, and investigating digital evidence using specialized tools. This paper will examine the utilization of a Forensics Tool Kit (FTK) in order to analyze the contents of a hard-disk.

Presentation Index: H-GS 3 **Present Time:** 4:10 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Ullah, ASM	Schmidt, Mark	Information Systems

Computer Forensics

Computer forensics involves the application of computer technology and techniques to aid in solving legal investigations. Computers can be involved in a crime by being used as a target, being used as an instrument or the computer can be incidental to a crime. When the computer is a target of a crime, the information (data) on the computer is what is being targeted. When a computer is used to commit the crime, then the computer is being used as an instrument. Thirdly when the use of a computer aids and facilitates the crime, making the crime easier, the computer is referred to as being incidental to the crime. This presentation uses computer forensics to solve two crimes in which a computer is incidental to a crime developed by two groups of students. Computer forensics evidence is left on computer hard drives by the two groups and hard drives are exchanged between the two groups. Each group is supposed to solve the other group's crime by relying solely on computer forensics to find evidence which will aid in solving the criminal case. The presentation will demonstrate how Forensic Tool Kit (FTK) is used to recover and analyze deleted and existing data off a computer's hard drive. The data collected includes browsing history, cookies of sites browsed, deleted files and folders, deleted emails and different financial transactions done online. This evidence collected is then pieced together to solve a crime where a computer is incidental to a crime. The presentation goes on to prove that a deleted electronic document is not 'lost' and can be retrieved using either open source or commercial computer forensic tools.

Presentation Index: H-GS 4 **Present Time:** 4:30 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Owusu, Eric; Tesfaye, Menna; Mubvumbi, Tinashe; Rai, Rashmi	Schmidt, Mark	Information Systems

Session H-VN **Humanities** **Voyageurs North**

Parking System Analysis: Improving St. Cloud's Downtown Infrastructure

To ensure its continued growth as a "destination," city business and governmental leaders must discover a long-term solution to the ever-present parking dilemma in St. Cloud's Downtown area. As all involved in solving the problem know, the thousands of people who visit and shop in the Downtown district need a place to park that is reasonably close to their desired destination. Although customers could park in one of the four existing ramps, many are unaware that the ramps even exist. Based on the ongoing complaints that business leaders routinely hear, it appears that the majority of visitors, as well as many local members of the St. Cloud community, are not well informed of their parking options. Current signage directing motorists to parking ramps is minimal and confusing to some. With the additional, recent push toward revitalizing the interiors and storefronts of several buildings in the area, it is more crucial than ever to adequately address the parking needs of our Downtown patrons. In accordance with this goal, we researched the efforts of other cities to solve their downtown parking problems as well as interviewed business owners and officials in St. Cloud to develop a set of recommendations. Because there are many stakeholders involved in this situation, we sought a mutually beneficial solution, one in which the City would be able to make a return on their investments while still providing convenient parking for Downtown businesses and their customers.

Presentation Index: H-VN 1 **Present Time:** 3:30 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Winch, Joseph; Feder, Ashley	Heiman, James	English

Somali Immigrant Families: Their Views and Practice of Literacy

This presentation is about a study based on the premise that supporting the first language and cultural identity of English Language Learners (ELLs) is critical for their long-term academic success. Teaching students to read and write their first language is an important step, as well as a way to make it easier for them to learn to read English. However, the many languages represented in a typical K-12 ESL class present a logistical challenge. So, this study explored the feasibility of instruction by parents. Research questions focused on the views and practice of literacy of families of K-12 ELL students. Data was collected using a strategic ethnographic interview method. The 12 participants were mostly women within a community of Somali immigrants. Using Spradley's *The Ethnographic Interview* as a guide for analysis, data was coded according to identified domains/topics and then organized into subtopics for evaluation. Analyzing what the participants reported showed few materials written in Somali. Most of the English resources were school books and computers. Reading and writing happened primarily in the home and secondarily in various school related settings. A majority of the participants could read/write Somali, though they reported very little activity doing this. The lack of materials was one obvious factor. In contrast, motivation for first language literacy seemed abundant, ranging from very practical reasons to the desire to preserve their language and culture. Many saw literacy as a key to learning. Furthermore, the value of education emerged as a major theme. With several possibilities for acquiring reading materials, the results contributed support for the feasibility of promoting first language literacy through parental instruction. Come hear the perceptions and stories of these courageous people. Bonus information includes: ways you can support native language literacy; additional insights for ESL teachers; and methodology tips.

Presentation Index: H-VN 2 **Present Time:** 3:50 PM

Student Presenter(s):	Sponsor(s):	Department(s)
DuMont, Suzanne	Robinson, James	English

Women Artists and Models: Each End of an Artwork

In 19th century France, patriarchy built the arts. Sexual difference promoted by social constructs determined what, and how, male and female artists painted. Victorine Meurent, Berthe Morisot, Mary Cassatt, and Suzanne Valadon were not only artist's models, but artists in their own right. The representations of these women by their male contemporaries assist in acknowledging the imbalance within French art and culture during the late 1800s. By examining the work of male artists who represent these women the relationship between artist and model will be analyzed while exploring the contrasting representations of femininity between the sexes. Social constructions that defined female roles and interfered with the artistic visions of these woman artists are also addressed in order to capture the plight of the 19th century female artist.

Presentation Index: H-VN 3 **Present Time:** 4:10 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Suski, Alison	Newman, Emily	Art

Bloody Sunday: An Investigative Report

Sunday, January 30th, 1972 has gone down in history as one of the bloodiest and most tragic days in the history of Ireland. A peaceful protest was organized by Irish citizens in response to violations of their civil liberties by the British. Yet when the dust settled that day, twelve people were dead and another thirteen lay injured and dying in the streets after British paratroopers have been firing at people for a solid twenty-five minutes. How did a peaceful protest evolve into an incident involving soldiers and so many people dead and injured? Were they killed in cold blood, or was it a justified response by the military? Using eyewitness accounts and a variety of both primary and secondary sources this paper takes apart the events of that day, known as Bloody Sunday, in an attempt to find the truth among the chaos.

Presentation Index: H-VN 4 **Present Time:** 4:30 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Bentley, Carol	Jordan, Christopher	Theatre, Film Studies and Dance

Session H-VS | **Biological Sciences** | **Voyageurs South**

Effects of Edges on Plant Communities in an Artificially Fragmented Landscape

In fragmented landscapes both quantity and orientation of edges has been shown to substantially affect ecological processes. Large and small patches often show differences in plant diversity and abundance, though sometimes it seems that the mechanism explaining these differences is that microhabitat conditions away from the edges of either large or small patches may be substantively different from those in the interior of large patches. In order to better understand the effects of edge processes on plant assemblages, data from a long-term habitat fragmentation study in central Kansas, U.S.A. were analyzed. Stem counts, percent cover, and habitat affiliations were used in conjunction with a patch classification scheme that defined large, medium, and small habitat patches while also describing all study quadrats as either edge or interior in location. Using one-way ANOVAs it was determined that the abundance of select trees, particularly rough-leaved dogwood (Cornus drummondi C.A. Mey), eastern red cedar (Juniperus virginiana L.) and slippery elm (Ulmus rubra Muhl.), differed significantly from edge to interior. This pattern was also seen for abundance of all trees. Beta diversity was measured over time using Sorensen's index and again the indices showed significant differences in plant diversity from the interior to edge of patches. Even though a significant difference was seen between interior and edge in most measures, they failed to be consistent in patch size. That is, the only consistent difference in measures from the interior to the edge was seen in the small patches. This indicates that more than just the effects of edges were at work in explaining plant diversity patterns in the study area. Overall, the findings provide support to the idea that habitat fragmentation causes variable responses in plant assemblages based on location within the individual fragment.

Presentation Index: H-VS 1 **Present Time:** 3:30 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Karschnik, Travis	Cook, William	Biological Sciences

The Behavioral and Physiological Responses of Waterfall Climbing in Gobiid Fishes from Hawai'i

The gobiid fishes of the Hawaiian Islands face extreme selective pressures throughout their life cycle. From the moment of hatching upstream, larvae are exposed to high velocity stream currents and are quickly swept out to sea. The oceanic developmental stage lasts for several months before juveniles return to inhabit upstream habitats for the remainder of the life cycle and to reproduce. Sicyopterus stimpsoni is one of the goby species that embarks on waterfall climbing to reach upstream habitats. Climbing behavior is driven by many external environmental cues and biological interactions which are poorly understood. In this study we examined the behavioral and physiological factors that affect waterfall climbing behavior. We hypothesized that juvenile Sicyopterus stimpsoni are attracted by stream water containing the odor of adult members of their species, and that adult fish will follow each other's mucous trail while climbing. The first experiment tested juvenile Sicyopterus stimpsoni in a choice experiment with two water flows. One side of the climbing ramp streamed carbon-filtered well water while the other side streamed carbon-filtered well water that had acclimated fish smell in it. For the second portion of choice trials, juveniles were given the option to climb a ramp fed by river water which contained Sicyopterus stimpsoni scent or the same river water that is up stream of the habitat of Sicyopterus tsimpsoni thus containing no fish scent. We also tested adult Sicyopterus stimpsoni in a mucus trail following experiments. Adults were stimulated to climb a single flow ramp in which a trail of mucus was hypothesized to be followed by subsequent adult Sicyopterus stimpsoni. Results of these experiments will improve our understanding of the environmental cues that guide fish migration in amphidromous Hawaiian gobiid fishes. Funding provided by the National science Foundation (NSF).

Presentation Index: H-VS 2 **Present Time:** 3:50 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Leonard, Gerald	Schoenfuss, Heiko	Biological Sciences

The First Annotation of Glycine, Serine, and Threonine Metabolic Pathways in Planctomyces Limnophilus

Planctomyces limnophilus, a gram negative bacteria with no peptidoglycan in its cell wall. It is a group of budding microorganism and member of the order Planctomycetales which lies within bacterial domain. It is usually found in marine environment and has spherical shape and regular structure. The optimal growth temperature of Planctomyces limnophilus is 32 degrees Celsius and grows in pH around 6.8. Saint Cloud State University is part of a consortium of institutions that make up the Collaborative Undergraduate Genomic Annotation Team. SCSU has undertaken the responsibility of using comparative genomics to identify the amino acid biosynthetic pathways. Glycine is a nonpolar aliphatic amino acid and is the smallest of the 20 amino acids. Serine is a polar uncharged amino acid that differs from Glycine by a hydroxyl group. Threonine is a polar uncharged amino acid with hydroxyl group that differs from Serine by a methyl group. We hypothesize that these amino acids have biosynthetic pathways in Planctomyces limnophilus, 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: H-VS 3 **Present Time:** 4:10 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Kharel, Subash; Kunwar, Yejur; Befikadu, Netsanet	Kvaal, Christopher	Biological Sciences

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

Robotic Painting System

The goal of this project was to design an automated system to replace the current template method that paints traffic-directing images on our roads, such as left turn lane arrows, or handicapped-only symbols. The new system offers a cost-effective, quick, and safe alternative to the process that local governments currently use. The design presented is a half scale prototype robotic arm system for painting graphical symbols on a road surface. The design will cut the overall time to paint a symbol from five minutes to two and a half minutes, and requires half of the manpower currently used. The design also addresses the previous safety concerns by allowing the operator to finish each symbol without leaving the vehicle, thus reducing the danger of being hit by passing vehicles. The design was also made portable so that it can be moved easily from vehicle to vehicle allowing local governments to maximize efficiency when planning projects. The system detailed here is capable of drawing any vector graphic with almost zero technical ability required of the user. We have tested and verified the functionality and reliability of our prototype, and have given demonstrations of its capabilities. This project allows for further development and eventually will provide a safer alternative to painting traffic-directing images on our roads.

Presentation Index: I-B 1 **Present Time:** 4:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Meemaduma, Harith; Schirmacher, Adam; Johnson, Jason; Fliegelman, Leslie	Thamvichai, Ratchaneekorn; Sezen, Ahmet; Hou, Ling	Electrical and Computer Engineering, Mechanical and Manufacturing Engineering

Comparison of Dual Users from Two Frames with Cell Only Users and Landline Only Users

An increase in cell phone usage in the past several years has been accompanied by a decline in houses which contain landline telephones. Current estimates project the percentage of households with only cell phones at about 30%. It has been shown that certain demographics are more likely to be members of cell phone-only households than others. This creates a coverage problem with survey research and can lead to a bias in surveys calling landline telephones. It is our goal to compare the responses between two groups in the SCSU Fall Survey: respondents who completed the survey on their landline telephone and respondents who completed the survey on their cell phone. We will break down each of these two larger groups into four smaller subgroups which consist of respondents who claim to use their cell phones for most of their calls, respondents who claim to use their landline phones for most of their calls, respondents who use landline and cell phones equally, and respondents who own either only a cell phone or only a landline phone. Then we will compare responses and demographics between the eight different subgroups.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Edberg, Lucas; Hardrath, Jacquelin	Zerbib, Sandrine; Robinson, David; Frank, Stephen; Wagner, Steven; Hammes, Michelle; Kulas, John	Political Science, Psychology, Sociology and Anthropology, Statistics

Induction of Toxoplasma Gondii Cell Cycle Fusion Proteins

Toxoplasma gondii is a highly successful parasitic protist. It is found in most regions of the world, and is thought to infect more than one third of the human population. This parasite has emerged as a major cause of morbidity and mortality in patients suffering from acquired immunodeficiency syndrome, and should therefore be an important target for drug therapies. Cell cycle proteins have been implicated as potential avenues for rational drug design against T. gondii. The goal of this study was to express important, putative T. gondii cell cycle proteins, CRK2, Cdk7, Cyc2, and Cyc1, in Escherichia coli cells for later use in biochemical assays. Plasmids containing these four gene inserts were subjected to DNA sequencing and restriction enzyme analysis. The plasmids were then transformed into E. coli cells and chemically induced. The induction results were subjected to growth curve analysis and sodium dodecyl sulfate polyarcylamide gel electrophoresis. CRK2 was the only obvious observable induction, but other proteins may still be present at lower concentrations.

Presentation Index: I-B 3 **Present Time:** 4:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Tran, Melissa; Mills, Serah	Kvaal, Christopher	Biological Sciences

Multiple Channel High-Speed and High-Resolution Analog Digital Converter for Shearwave Dispersion Ultrasound Vibrometry

To design and develop a pulse-echo Ultrasound system of 2 to 8 channels with high-speed and high-resolution Analog-Digital Converter (ADC). Our project is focused on receiving the reflected ultrasonic radiation force with the ADCs. The system will be used to measure the Doppler shifts caused by the shear wave induced by ultrasound radiation force to determine the viscosity and elasticity of human tissues. Elasticity and viscosity are very important material properties that can be used for tissue characterization and have applications in medical imaging such as artery stiffness. The need of physically moving the transducer is required for an Ultrasound system equipped with only a single transducer while collecting data in the current Ultrasound system at the DSP Lab of SCSU. Since moving the transducer changes the measurement condition of the experiment, therefore compromising the efficiency and accuracy of data collection, a multiple channel Ultrasound system will eliminate the necessity of physically moving the transducer, hence giving more accurate experimental data.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Lem, Wye; Fadlallah, Mohammed	Hou, Ling; Zheng, Yi; Yao, Aiping	Electrical and Computer Engineering

A Census of the Subatomic Population (At a Trillion Degrees)

Probing well past the nanometer scale, down to femtometers (10E-15 m), where the nucleus resides, one asks, "how many particles live there when it gets very hot? And what species of particles are they?" This hot and dense environment exists in particle physics experiments and existed in the early universe microseconds after the Big Bang. We use quantum physics and kinetic theory to predict the number density and kinematic properties of the most abundant particles when the temperature of the system reaches a trillion degrees. Specifically, we model the population density of pions, kaons, rho mesons and K-star mesons. Finite lifetime effects, strong nuclear interactions and system expansion effects are all included in this census.

Presentation Index: I-B 5 **Present Time:** 4:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Street, Michael	Haglin, Kevin	Physics, Astronomy and Engineering Science

Mathematical Psychology

Can human individuals be broken into and described by mathematical objects? Philosophers have thought long and hard about what it means to be a person and whether or not human beings are persons. Psychologists on the other hand have tried to describe human behavior. Using philosophical ideas, general observations, and psychological theory, this research has broken the human individual into different pieces, or components. The individual has been broken down into four main components; the heart (Hebrew philosophy), rationality, emotion, and the physical body. The project has begun to offer the most simplistic mathematical models of each of these components in hopes of establishing an effective model of each. Furthermore the project has begun to offer possible simplistic mathematical representations for the interaction of each of the components. The information used is generally from established psychological theories, as well as experiments done on human behavior. The model has offered some potential insight into group dynamics, but this has yet to be verified. There is a significant amount of work left to be done in this field. This theory, when fully grown, could describe and predict any human behavior that is describable or predictable. The theory remains for now in the developmental stage, though it shows substantial promise.

Presentation Index: I-B 6 **Present Time:** 4:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Jennen, Scott	Melcher, Joseph; Sharpe, Kevin	Philosophy, Psychology

An Introduction to Pulse Oximetry Using the dsPIC Controller

The principles of pulse oximetry are well understood as a non-invasive mechanism to measure a patients heart rate and blood oxygen level. The purpose for the presentation is to summarize a dsPIC based pulse oximeter prototype using off the shelf components. The presentation has been divided into three distinct parts. The first component pertains to the background and motivation to develop and implement a pulse oximeter using the dsPIC controller. The second component contains some fundamental principles pertaining to pulse oximetry. The third component provides a detailed description of the pulse oximeter we have developed.

Presentation Index: I-B 7 **Present Time:** 4:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Stahlback, Dustin; Liu, Liangnan	Zheng, Yi	Electrical and Computer Engineering

Understanding the Society We Live In and the Causes of Poverty

Using statistical data from government resources we will demonstrate social constructions that lead to poverty in the United States. We will emphasize the class inequalities then expand it to relation with racial inequalities. It will show the broad social problems that led to poverty in relation with the social problems that occur due to poverty occurring. The poster will demonstrate why it is important to acknowledge these inequalities in our society along with displaying practical ideas for change that will relate to what college students can do. We will theorize on what society can do to make changes to the poverty rate in the United States. The theories will take into account society's view of poverty and the stigma attached to that view.

Presentation Index: I-B 8 **Present Time:** 4:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Casserly, Alexandra; Peterson, Nickolas	Freilinger, Rebecca; Zuo, Jiping	Sociology and Anthropology

The Connection Between Domestic Violence and Animal Cruelty

The topic we chose was "The Connection Between Domestic Violence and Animal Cruelty." We are very passionate about stopping animal cruelty and wanted to know why people abuse animals. Interesting statistics while researching gave me some insight on the topic. In recent years there has been a strong documented connection linking animal abuse and domestic violence. There is legitimate evidence that the individuals involved in violent acts against animals present a danger to the public, and this must be addressed. Intentional animal abuse is often seen in association with other serious crimes including drug offenses, gang activity, weapons violation, sexual assault and domestic violence. It can be one of the most visible parts of an entire history of aggressive or antisocial behavior. So, it is very important to take care of this problem in our society. Animal cruelty is viewed as a serious issue by law enforcement, mental health professionals and the general public. The effective prosecution of animal abusers has many benefits including providing an early and timely response to those who are at risk of becoming a threat to the safety of others.

Presentation Index: I-B 9 **Present Time:** 4:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Trosen, Lisa; Pitzl, Hayley; Sather, Lindsey	Zuo, Jiping	Sociology and Anthropology

High Speed Circuit Design and Simulation

In this world of fast-paced and ever-evolving technology, integration is one of the most innovative and researched upon ideas. With this trend comes the need for tools to help analyze the issues associated with hardware and the parameters which affect them. Hence we worked on making a tool which could contribute to this endeavor. Our project will illustrate the concepts of high speed circuits and the issues with their designs. The project will feature a toolbox created in MATLAB's Graphical User Interface (GUI) which will simulate the effect of electromagnetic waves on traces which are embedded inside Printed Circuits Boards (PCBs). The simulation also demonstrates the changes in circuit parameters and hence makes this tool very efficient for analyzing high speed circuits. We will also be plotting S-Parameters and explaining the effects of these parameters in circuit analysis.

Presentation Index: I-B 10 **Present Time:** 4:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Sajid, Noureen; Khan, Niveen; Kanadji, Aboubacar; Chen, Xin	Zheng, Yi	Electrical and Computer Engineering

Perceptions of Feminism

The main issue considered in this study is students' perceptions of the concept of feminism. I hypothesize that 1) Female participants will be more likely than male participants to self-identify as feminists and 2) that female participants will be more likely to agree with the definition of feminism (social, political, and economic equality for women and men). I distributed an online survey link in the fall of 2009 (using Select Survey) to students currently enrolled in Introductory Sociology courses. I found strong support for the presence of a social stigma attached to the word "feminist". Additionally, the gender of the respondent was strongly correlated with the respondent's identity as a feminist. The results from this study could potentially be used in determining whether or not a goal of the Women's Movement should be to educate the general population regarding its purpose as well as educate college students about feminism (and by doing so give the word "feminist" a new (and more positive) meaning).

Presentation Index: I-B 11 **Present Time:** 4:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Bloomquist, Katharine	Berila, Elizabeth	Women's Studies

Globalization: Sri Lanka and South Korea

For my presentation I will be showcasing a paper I am finishing for my Global Studies Seminar Class this spring. Its main objective is to clarify a correlation between globalization and dependency theory. Developed countries like the US, Britain, and Japan can have interesting consequences and sometimes positive outcomes on developing, or third world countries. They can also make a country like Sri Lanka and South Korea, dependent on them. I choose this project because I am very interested in the economic development in Sri Lanka after the truce made between those in conflict and how outside sources can make a country dependent on its support such as South Korea.

Presentation Index: I-B 12 **Present Time:** 4:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Stacey, Kristen	Butenhoff, Linda	Political Science

Comparison of Factors Affecting Retention of DGS and Non-DGS Students at SCSU

A group of statistics students has been working with SCSU student data to attempt to learn about what factors influence students' success rates. The data are from the SCSU ISRS database, supplied to us with the help of the Institutional Research Office. We are looking at retention rates for the fall 2007 New Entering Freshman (NEF) cohort. In particular, we are interested in comparing DGS students (Division of General Studies) with regularly admitted SCSU students. Other factors which may affect retention rates of these students include ACT scores, high school percentage rank, GPA while at SCSU, and placement scores in algebra and reading ability. A summary of our results will be presented.

Presentation Index: I-B 13 **Present Time:** 4:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Shrestha, Raju; Ahlijah, Martin; Zhu, Chen	Robinson, David	Statistics

Educational System for Ultrasound Imaging

The existing SCSU system to induce and detect submicron harmonic motion is improved, integrated and enhanced to multiple channels to improve the collected data. A method for detecting the amplitude and phase shift of an induced shear wave using less power is studied. The travel speed of the induced shear wave can be calculated using its phase shift. The velocity of the shear wave can be used to calculate the properties of elasticity and viscosity of tissue.This method has been proven to have potential for non-invasive measurement of tissue such as artery.The results are to be compared with the results reported in previous studies.

Presentation Index: I-B 14 **Present Time:** 4:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Cuevas Ruiz, Carlos	Zheng, Yi	Electrical and Computer Engineering

The Effects of Implicit Theory Activation and Stereotype Threat Activation on Gender Differences in Mathematical Performance

Implicit theories are conceptions of limitations of ability; they include entity and incremental theories. Women suffer from stereotype threat in the math domain to such an extent that they are negatively affected by the presumption of gender differences. 76 undergraduate students were given specific implicit and stereotype instructions, and were made to take a math test. Scales were also administered. An interaction was discovered such that females and males performed similarly in all conditions except entity and no threat. In this condition, females outperformed males. With such a surprise result, it seems apparent that females flourish under entity and no threat. Females were also more likely to advocate entity. Perhaps entity theory validates the absence of threat more than incremental.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Nelson, Sean	Buswell, Brenda	Psychology

Precambrian Influence on the Topography of West-Central Minnesota

The Archean Gneiss Terrane contains some of the oldest rocks in the world, some on the order of ~3.6 Ga. This formed as a result of continental accretion, along with the intrusion of numerous granitic bodies synformationally. A series of maps were made, using Surfer, to determine if the Archean had an influence on the topography of Stevens and adjacent counties, Minnesota. Known structure contour maps from Pope County were used to verify the maps made. Using Digital Elevation Models (DEM), the topographic maps made using Surfer, and overburden isopach maps, the subsequent topography formed by the Quaternary glaciations of West-Central, Minnesota was influenced by the Archean basement rocks.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Olson, Dustin	Pound, Katherine	Earth and Atmospheric Sciences

Interest and Attitude in Chemistry: Do Different Instructional Strategies Have an Impact on Student Achievement?

One focus of Chemistry education research is the interest and attitudes of students towards chemistry. This research focused on the impact of student interest and attitude on achievement, and to identify how that correlates with instructional method. At Saint Cloud State University the introductory chemistry class is taught with learning assistants integrated into some sections of the course with a focus on active learning, while in other sections more traditional teaching strategies were utilized. In order to assess the impact of learning assistants on the students' interest and attitude a survey was designed and presented to all sections at the completion of their semester which was correlated with student achievement. This data, along with classroom observations and instructor interviews will be presented.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Frick, Tasha	Krystyniak, Rebecca	Chemistry

Ultrasound Pulser Unit

Pulser-Receiver detects vibration in the tissue for Ultrasound Vibrometry using comparatively inexpensive electronic parts. Shear-wave Dispersion Ultrasound Vibrometry (SDUV) is a quantitative method to measure stiffness and viscosity of soft tissue without having any adverse effect on the tissues. An ultrasound beam will be propagated through the tissue. A self-designed power supply is included in the unit. A tone burst with ±120V will be generated using the pulser unit. The unit will be controlled by a microcontroller and a USB will power the unit. The T/R switch will guide the generated pulse to the transducers and the received echo to the ADC for digitization. This device will replace an existing device used for research on ultrasound vibrometry in ECE department. New design will provide better accuracy and results.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Gautam, Sabin; Karkee, Daniel; Karmacharya, Pratish	Zheng, Yi	Electrical and Computer Engineering

Genetically Modified Crops

There are people in the world who believe genetically modified (GM) crops are too harmful to health to be grown and there are people who believe GM crops are a necessity to feed the world. I conducted an inquiry to answer the question, "Should GM crops be allowed to be grown around the world?" The inquiry on this science, technology, and society (STS) issue started with a survey of 141 science students at St. Cloud State University. Many of the students did not know the health risks of GM crops but still believed they were necessary for the growing world population. With proper education on GM crops, there could be a change in the current situation with STS issue.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Munsterman, Laura	Simpson, Patricia	Biological Sciences

Environmental Literacy and Beliefs about Environmental Education in High School Chemistry Teachers in Minnesota

Recently there has been increasing concern regarding environmental responsibility due to worsening environmental conditions. Therefore, there have been efforts to promote environmental responsibility in children through school curriculum. Evidence suggests that lessons that incorporate environmental issues are linked to an increase in student achievement and interest in science. Reviewed literature has shown, however, that pre-service chemistry teachers do not have a sound understanding of environmental issues, although they do have an interest in integrating environmental issues into their curriculum. This study investigated the environmental literacy, beliefs and behavior regarding incorporating environmental education into curriculum of Minnesota high school chemistry teachers. Subjects completed an online instrument regarding beliefs, behavior, and knowledge regarding environmental issues and environmental education. Results of the statistical analysis of the survey will be presented. Recommendations regarding changes in the preparation of pre-service chemistry teachers to build environmental literacy and incorporating environmental education as part of a science curriculum will be discussed.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Souna, Amanda	Krystyniak, Rebecca	Chemistry

Wireless Vital Sign Monitoring System

With the rising health care cost and a growing elderly population alternative health care options must be explored. A person may not be able to afford around the clock monitoring by a health care professional when needed but may be able to live independently enough to avoid the cost of a nursing home. Methods of monitoring key vital signs on a continual basis, while still allowing the ability to live a normal life, may be the answer to the problem. The project will include the design of the wireless monitoring system to be worn by the patient and the software necessary to collect the data. The armband monitor will periodically transmit the data to the patient's home PC and will transmit any time the readings are outside of predetermined limits. The data will then be transmitted to the health care provider via the internet for monitoring and storage. The vital signs monitored will include blood pressure, heart rate and body temperature.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Brisley, Justin; Vaidya, Ayushma; Abfalter, Nathan	Hossain, Md; Yao, Aiping; Meichsner, Jie	Computer Science, Electrical and Computer Engineering

Effect of Galantimine on FAM Beta-amyloid (1-42) Aggregation: Investigations Using Spectrofluorimetry and Atomic Force Microscopy

One of the major hallmarks of Alzheimer's disease (AD) is the formation of amyloid β (Aβ) peptide plaques in the brain, which are formed mainly due to the incorrect folding of the Aβ1-42 peptide. Prior to the misfolding the peptide is found in soluble form, but once the folding has occurred the peptide becomes insoluble and contains an over abundance of b-sheets. The objective of this study is to investigate the interaction between Galantamine, a small molecular drug used for treating AD, with the fluorescein-labeled β-amyloid (FAM Aβ1-42) peptide. The effect of Galantamine concentrations ranging from 1-100 μM on the fluorescence emission intensity of 10 μg/mL of FAM-Aβ1-42 will be determined to understand the effect of small molecular drugs on the aggregation of the amyloid peptide. Several molecular drugs such as Riluzole non-steroidal anti-inflammatory drugs, neutrophil-activating peptide (NAP), and including Galantamine are being studied for elucidating their roles in either β-amyloid aggregation or β-amyloid production. It has been proposed that small molecular drugs such as Galantamine may inhibit β-amyloid aggregation by disrupting the hydrophobic interaction between β-amyloid peptides. Several techniques such as atomic force microscopy and fluorescence emission intensity will be used to study the interaction between FAM-labeled β-amyloid with galantamine and the results of these investigations will be presented.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Rose, Bradley; Wauna, Namukulwa	Ramakrishnan, Latha	Chemistry

Using Petrologic Techniques to Determine the Composition and Economic Potential of a Carbonate-Dominated Breccia from the Rio Grande Rift in Central New Mexico

The Rio Grande Rift in the southwestern United States represents an active rift about 30-35 million years old. Extension of the crust has led to high heat flow and very active magma activity near the surface. Consequently, the rift basins of New Mexico are riddled with vein ore deposits of various forms. In the rift axis, the geochemistry of these bodies can be very complex. Modern petrologic techniques, such as making thin section microscope slides for mineral identification and scanning electron microscopy for element counts, can be used to determine the composition and internal structure of these intrusive rock bodies. Using this data, the lithology of rock samples from prospective mining sites can be determined and evaluated for economic mineral potential. A carbonate-cemented breccia with a number of igneous and metamorphic inclusions associated with a granitic pegmatite collected from west-central Sierra County, New Mexico represents a study case. This particular breccia has zoning in its carbonate-dominated matrix. The chemistry of these zoned areas range from pure calcite ($CaCO_3$) and ankerite ($Fe, MnCO_3$) to ore-grade siderite ($FeCO_3$) and other iron oxides in the breccia. The enrichment of iron and manganese suggests the breccia has a contact relationship with the pegmatite. Fragments of chemically altered muscovite-biotite-schist country rock and granitic inclusions in the breccia support this. Given the dominance of the carbonate in the breccia (>50%), it could technically be classified as a carbonatite, which is an intrusive rock formed from magma that is rich in carbonate and other volatiles (e.g. gases like CO_2, H_2O) while poor in silica. The presence of iron and other oxides in the pegmatite suggests the enriched carbonate is either secondary in nature, meaning it is likely the result of hydrothermal alteration of the pegmatite, or it formed during the last moments of the intrusive event when the final volatiles came out of solution. The only way to confirm this, however, would involve additional field work to determine the spatial and geochemical relationships between the pegmatite and the breccia. At this time, the exact ground location of the sample collection site is proprietary knowledge.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Rosenthal, Jeffrey	Pekarek, Alfred	Earth and Atmospheric Sciences

Remote Home Control System

The purpose of this project is to allow the control of various household appurtenances remotely. The two main components include a sprinkler and thermostat control, and this incorporates a combination of software and hardware. The interface involves both a home graphical interface and an internet web-based application. The website being designed must be dynamic to allow the user to manipulate the desired functions. ASP.net allows for a convenient, secure and flexible framework for this purpose. The hardware needed includes multiple sensors and various switching components. Additionally, the connections between the components are to be both wired and wireless. The user is also intended to be given feedback of environmental changes. A log of this data is also to be stored for reference.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Tchouetckea Tankoua, Romeo Blaise; Lee, Chong; Malchow, Jason	Yao, Aiping	Electrical and Computer Engineering

Environmental Monitoring Device (EMD)

The wireless environmental monitoring device (EMD) is designed and implemented. This type of device initially was of no interest, but it has gained more ground into other fields after its employment in military situations. The proposed system (EMD) senses temperature, humidity, dew point, dust, atmospheric pressure and uses a Global Positioning System (GPS) receiver to identify its location. . EMD will wirelessly transmit the data to a monitoring center in which the Graphical User Interface (GUI) will be used for user interface and measurement data display. GUI will display the measurement data and the position of the taken measurements plotted on a map using Google map program. In case of transmission problems or out of range the measurement data will be first stored in the device and can be downloaded to a monitoring center at a later time. The final product will be small, inexpensive, user-friendly, and reliable sensor system that withstands the elements of the nature such as heat, rain and so on.

Presentation Index: I-B 26 **Present Time:** 4:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Dangol, Shreeja; Sambuu, Badral; Adhikari, Niranjan	Thamvichai, Ratchaneekorn	Electrical and Computer Engineering

Complex Chemical Equilibrium: An Expert-Novice Study

Complex Chemical Equilibrium can be a difficult concept in Quantitative Chemistry. Currently there is little research on problem solving skills associated with this topic. This study investigates subjects' ability to solve complex chemical equilibrium problems. A think-aloud method of data collection was utilized to study students' approach to the problems. Subjects completed two problems related to complex chemical equilibrium including an algorithmic and a conceptual problem. An analysis of the think-aloud data provided insight into the problem solving skills of both experts and novices in terms of complex chemical equilibria. Recommendations regarding teaching strategies to help build better problem solving strategies in novice students will be presented, along with support for teaching strategies.

Presentation Index: I-B 27 **Present Time:** 4:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Amala, Rebecca	Krystyniak, Rebecca	Chemistry

Labeling Genetically Modified Foods

Genetic engineering is our ability to be able to take genes from one organism and place them into another in order to enhance the organism for desirable traits. This technology has allowed us to be able to modify the genetic make up of different foods. This has allowed for the ability to take a gene such as a fish gene and insert it into a fruit or vegetable. This is done to enhance the food and give it certain nurturance that it naturally does not have. There has been a rising concern among consumers with genetically modified foods and the introduction of possible labeling of genetically modified foods. In this research one hundred people were surveyed to see what the publics behavior, knowledge, and belief about labeling genetically modified foods.

Presentation Index: I-B 28 **Present Time:** 4:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Koehler, Lauren	Simpson, Patricia	Biological Sciences

Omni Directional Vehicle with Obstacle Avoidance and GPS Tracker

The Omni Directional Vehicle is one of the new concepts introduced to the world recently. Omni Directional movement is achieved using special kinds of wheels called Mecanum wheels. The Mecanum wheels used in this project consist of six rollers attached to the surface and angled at 45 degree. All wheels are independently powered using four units of brushed motors. The vehicle is equipped with four ultrasound sensors to detect and avoid obstacle in its path and a GPS receiver used to automatically guide the vehicle to the desired location. The combination of mechanical design on the wheel motion control and multiple sensors allows for a variety of control algorithms to be implemented to the vehicle for practical applications.

Presentation Index: I-B 29 **Present Time:** 4:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Rijal, Shristi; Shrestha, Samridh; Dahal, Abhinav	Thamvichai, Ratchaneekorn	Electrical and Computer Engineering

An Investigation into Knowledge, Beliefs, and Behaviors of High School Students on Animals and Zoos

An Investigation into the Knowledge, Beliefs, and the Behaviors of High School Students on Animals and Zoos poster project was done as a class project. The main objective of this project was to get a better understanding of the knowledge, beliefs, and behaviors of high school students. To collect the data used for the project, I wrote up a survey, which was approved by my instructor, then went to a high school and handed them out to the biology classes. With the information from the surveys I made conclusions, inferences, and research and action recommendations. I found that many high school biology students were not aware of irregular behaviors animals obtain from being in zoos. They also do not attend zoos frequently, and when they do the visit times are not for a long time. Numerous students believe that zoos are an adequate place for animals to stay. The implications for the findings of this survey show that zoos may not be doing what they were first intended to do, educate people.

Presentation Index: I-B 30 **Present Time:** 4:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Lucas, Madeleine	Simpson, Patricia	Biological Sciences

RFID Shopping System

Our project presents a revolutionized shopping cart that utilizes new technology of RFID (Radio Frequency Identification). The use of RFID allows us to go beyond bar codes without need to scan items, or wait in line to pay. The cart automatically detects all items that are put inside, displaying the price, and complete description of the items on a high resolution LCD screen attached onto the cart. Furthermore, the unique ability of purchasing items would also be available on the cart, thus eliminating long wait lines. The LCD screen will display commercials related to product categories of a specific aisle. In addition, customers would be able to see their receipts from a home internet connection. This feature will give an advantage to store managers that would be able to control the product flow and sales. All information would be backed up by a strong database.

Presentation Index: I-B 31 **Present Time:** 4:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Tuladhar, Aayush; Atadjanov, Otabek; ALZmanan, Hamad	Hossain, Md	Electrical and Computer Engineering

Microgrid

The purpose of this project is to make a renewable energy source which implements an automatic switching device for residential use. The project consists of 3 main components; a solar source, a storage system, and a switching device. The solar source will capture solar energy and supply 12VDC power to 12V energy storage system. The power switch will draw 120VAC from the multiple sources and supply a 120VAC to a household load.

Presentation Index: I-B 35 **Present Time:** 4:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Vang, Tou; Kamga, Joseph Pascal; Schubert, Nicholas	Hossain, Md	Electrical and Computer Engineering

CAN Data Logger

The objective of this project is to build a controller area network (CAN) data logger for Polaris Industries. CAN is a device protocol that enables a microcontrollers to communicate without the need of a host computer. The implementation of this project is done by combining different components of software, hardware, and a graphical user interface conjointly. The data logger will be integrated with the current CAN network used on production vehicles. This will directly influence and improve the diagnostic capabilities that Polaris possesses, thus driving positive business results.

Presentation Index: I-B 36 **Present Time:** 4:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Sytsma, Cole; Frymark, Justin; Owens, Daniel	Glazos, Michael	Electrical and Computer Engineering

Bulk Viscosity and Expansion of Hot Nuclear Fluid

Heated and compressed subatomic matter expands unexpectedly rapidly in particle accelerator experiments. Viscosity is expected to slow the expansion but is evidently not particularly effective. We seek an answer to the question why is viscosity ineffective? We estimate the bulk viscosity of an interacting gas of light hadrons using analysis from kinetic theory. We find that the viscosity is proportional to the relativistic momentum, the particle density, and to the mean free path. Additional particles are included since previous works to provide a more complete picture. A flow model is then developed from partical pressures within the gas. Time dependent and temperature dependent models are presented, and numerical results are compared with known field-theoretic approaches.

Presentation Index: I-B 37 **Present Time:** 4:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Pikus, Brendon	Haglin, Kevin	Physics, Astronomy and Engineering Science

Design of an Automated Positioning System

The purpose of this design project is to design and prepare for implementation a system for 2 axes positioning on a pipe bender. A need was identified by Polar Tank Trailer to increase the capabilities of a pipe bender located at their Opole production facility. Currently only the bend axis is controlled on the machine. Manual positioning of the pipe between bends on multiple bend pipes limits the capabilities of the bender. Accurate positioning is needed to reduce or eliminate out of tolerance parts, increase repeatability and throughput of the current machine. A streamlined bending process will eliminate or reduce the need for subsequent welding steps to join sections of pipes. This will increase the quality of the end product and reduce assembly time. Fully automated pipe benders that are similar in size are expensive. The positioning system that is being developed will provide comparable accuracy to fully automated equipment at a fraction of the cost and can easily be adapted to other positioning applications. This system will be capable of positioning pipes up to 4 inch schedule 40 stainless steel pipe 20 feet in length.

Presentation Index: I-B 38 **Present Time:** 4:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Caird, Scott; Tschida, Jason; Youngers, Matthew	Sezen, Ahmet	Mechanical and Manufacturing Engineering

Session J-A **First Year Service Learning Experiences** **Alumni**

Visiting CentraCare

We are volunteering at the CentraCare hospital in St. Cloud twice this semester. We are playing games and coloring with the sick children. Volunteering at CentraCare was a great experience that helped us get involved with the community.

Presentation Index: J-A 1 **Present Time:** 5:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Dahl, Casey; Robinson, Melvin; Roering, Christine; McKeever, Aubreanna; Harris, Wesley	Kuznia, Jodi	General Studies

CentraCare Service-Learning Project

Through a service-learning project we are volunteering at CentraCare Hospital twice this semester. This will help us become closer with our community and get involved.

Presentation Index: J-A 2 **Present Time:** 5:20 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Sullivan, Jacob; Wassermann, Lisa; McKinney, Dustin; Munson, Gabriel; Cowell, Bobbie	Kuznia, Jodi	General Studies

Service Learning at Centracare MN

With the Centracare project, our group plans to help kids as they go through tougher times. As well, with this action we intend to develop our interest in being active service learners.

Presentation Index: J-A 3 **Present Time:** 5:40 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Colbert, David; Brown, Nicholas; Gordon, Trevor; Langlois, Corey; Omann, Johnathon	Kuznia, Jodi	General Studies

CentraCare Volunteer Project

Our group did a service-learning project at CentraCare. We will talk about what we got out of it by working with the children and why it's important to do service-learning for our community.

Presentation Index: J-A 4 **Present Time:** 6:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Kapus, Tyler; Ripka, Casey; Connelly, Ian; Bjornson, Josh; Stewart, Cornelius	Kuznia, Jodi	General Studies

Session J-GS **Information Systems and Security II** **Glacier South**

Electronic Voting

This paper introduces the ideal security characteristics and features of Electronic Voting (E-Voting) systems with emphasis on how these improve on the traditional way of voting. It will examine and draw comparison between components of two small scale E-Voting systems being already implemented. The comparison will help pinpoint problems that are inherent in the systems chosen for analysis, by showing how they do not meet some of the ideal or mandatory characteristics of an E-Voting system. A model for describing the real life environment in which voting occurs is mentioned before analyzing the behavior of attacks that might be carried out on the systems based on their flaws. Finally, recommendations based on how some of these flaws can be improved are also given.

Presentation Index: J-GS 1 **Present Time:** 5:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Mubvumbi, Tinashe	Herath, Susantha	Information Systems

Have You Erased Your Electronic Data Properly?

This paper focuses on the ability to easily recover data from a seemingly wiped hard drive. It is also my goal to inform the average user that they should be aware of who has their data when they sell or recycle a computer. Most people believe they are getting rid of their documents when deleting, emptying the trash bin and or formatting their hard drive. The reality is their data is almost never gone unless it is overwritten or the hard drive is physically destroyed. For this experiment I will be examining several hard drives from different people and vendors. I am recording how well each vendor takes care of the hard drives they resell. I will produce some simple statistics while maintaining anonymity for all parties involved except myself.

Presentation Index: J-GS 2 **Present Time:** 5:20 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Forster, Antony	Schmidt, Mark	Information Systems

Importance of Computer Forensics Tools in Digital Forensics

The goal of computer forensics is to identify, extract, preserve, documentation and interpret computer data to support legal authorities. Computer technology has changed not only the modern society but also changed the ways of committing criminal activities by means of those cutting edge technologies.Though cybercrimes increase exponentially these criminals leave some trails as electronic evidence. E-evidence available on computer systems plays an important role in investigating criminal cases. Though e-evidence has a tremendous capability of making a precise judgment on criminal cases, it must satisfy several key properties to be admissible evidence in a court. Computer forensics tools are a key factor in modern cybercrime investigation and these tools support investigators throughout the life cycle of crime investigation. Computer forensics experts must have a deep knowledge and practice in utilizing forensics tools to tackle cybercrimes successfully. This paper presents the importance of computer forensics tools in modern computer forensics investigations to make judgments effectively, efficiently and precisely. Moreover issues of forensics tools and usage of open source tools in digital forensics are discussed.

Presentation Index: J-GS 3 **Present Time:** 5:40 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Hettiarachchi, Charitha; Arthanayaka, Imali	Schmidt, Mark	Information Systems

VM Computer Forensics

Computer forensics investigators are often limited to investigating the mere contents of a suspect's hard drive and may be missing very obvious evidence. Startup applications, screen savers, and desktop wallpaper are just a few examples that could provide an investigator with crucial evidence leading to a suspect being found guilty or innocent. By using Virtual Machines (VMs), an investigator can duplicate a live and functional copy of a suspect's computer environment while still preserving the integrity of the hard drive itself. Having a working copy of a drive allows the investigator to see the same environment as the suspect and can find things that they could have missed during a regular investigation. Using free applications, I will show how to duplicate an environment into a VM and demonstrate the types of evidence an investigator might find while navigating through a suspect's computer.

Presentation Index: J-GS 4 **Present Time:** 6:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Condon, Michael	Schmidt, Mark	Information Systems

Session J-VN **Science and Engineering III** **Voyageurs North**

Automated Loader/Unloader for the E8 Blade Straightener

Whirltronics is a manufacturer of custom lawn mower blades for a variety of lawn mower manufacturers including Toro and Honda. One of the many steps in the production of these blades is a straightening process which is required following the heat treatment process. Currently, the rate at which the blades come out of the heat treatment process is 720 units per hour. With the previous blade straightening process having an average output rate of 600 units per hour with a human operator, it was clear that the straightening process was a bottleneck in the overall production which resulted in increased storage and handling costs. The objective of this project was to design a fully automated system that loads and unloads the blade straightening machine at a rate of 720 units per hour without the need for a human operator. The automated system is able to accommodate to 6 different blade types and reduces the amount of human handling involved in the straightening process by 80%. The areas of analysis included conveying the blades from the heat treatment area, positioning the blades, loading and unloading the blades to and from the straightening machine and transferring the straightened blades away from the straightening area.

Presentation Index: J-VN 1 **Present Time:** 5:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Feia, John; Bengtson, Neil; Helgeson, Grant	Bekkala, Andrew	Mechanical and Manufacturing Engineering

How to Give a Hoot: Integrated Species Conservation of the Great Horned Owl

This study was conducted to determine why the Great Horned Owl can be utilized as an environmental indicator species, and what benefits can be obtained in their conservation. Further, analysis of an integrated species concept, compared to a hands-off conservation approach, is explored for Great Horned Owl conservation. Benefits discussed include indicating the health of an environment; reduction of pest species; reducing the probability of disease outbreaks; incubating, or being a source for, further medical advancements; indirectly reducing human stress, combating obesity, and reducing urban sprawl - in the development of parks and preserves. Moreover, the development or reclamation of land for parks and preserves is analyzed for its feasibility. This study suggests that in planning parks and preserves around the Great Horned Owl, particularly in an integrated species method, benefits can be maximized for both GHO and Human populations. However, it is important to note that such implementation is not economically feasible given current research on patch distribution, and state of the U.S. Economy. Further research and development may be needed to implement an integrated species method of conservation, pertaining to the Great Horned Owl.

Presentation Index: J-VN 2 **Present Time:** 5:20 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Mecum, Ashley	Cook, William	Biological Sciences

Adjustable Shear Die

The objective of this design project is to improve Whirltronics current shear die setup, which is used for the manufacturing of lawnmower blades. Whirltronics Inc. performs stamping, forming, and heat treating of low, medium, and high grade steels to make precision lawn mower blades. The current process to adjust dies to account for a change in blade length and width is time consuming. The improved die design should eliminate the current trial and error aspect of the setup process. It should have the ability to change the overall blade length and width with relative ease, and be within the dimensional tolerances the first time the press outputs product. The shear die should be able to adjust for blade lengths ranging from 14 to 28 inches, widths from 2 to 3 inches, and be able to obtain dimensional tolerances to within ±0.01 inches per blade. When finished, this project will provide one adjustable shear die that is ready to be placed into production. Finally, the new design should achieve all of the above aspects and be cost beneficial to the company.

Presentation Index: J-VN 3 **Present Time:** 5:40 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Lanie, Jesse; Johnson, Jared; Moser, Adam	Bekkala, Andrew	Mechanical and Manufacturing Engineering

Comparison of Responses to 17β-Estradiol Exposure Between an Endangered Species and Two Model Species

Although the effects of estrogenic exposure on model organisms are well documented, the effects across species, including endangered or threatened, is less clear. Traditionally, studies have focused on model organisms that are easily maintained and robust; as opposed to endangered species that are more vulnerable. It is likely that endangered species would show a greater response to exposure because of their vulnerability. To test our hypothesis that 17β-estradiol (E2) exposure will elicit the greatest effect in the endangered Rio Grande silvery minnow (Hybognathus amarus, RGSM), we assessed predator escape behavior, survival and vitellogenin concentration. We exposed juveniles of three species of fish: two model species, the fathead minnow (Pimephales promelas, FHM) and the bluegill sunfish (Lepomis macrochirus, BLG); and an endangered species, the RGSM. Fish were exposed concurrently to E2 at 10 ng/L and 30 ng/L for 21 days in a water quality that simulated the Middle Rio Grande, NM, using a flow-through proportional diluter system. FHM showed a significant decrease in latency response in the 10 ng/L and 30 ng/L treatments compared to the control. No significant effects on predator escape behaviors were observed in RGSM and BLG. RGSM showed a significant decline in survival at day 14 as compared to FHM and BLG. However, at day 21 both Cyprinides showed a significant decline in survival compared to BLG. Our study demonstrated response differences between species, and further divergence in responses between the families Cyprinidae and Centrarchidae. These results suggest phylogenetic relationships are an important consideration when evaluating conservation policies.

Presentation Index: J-VN 4 **Present Time:** 6:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Jorgenson, Zachary	Schoenfuss, Heiko	Biological Sciences

Session J-VS **Philosophy** **Voyageurs South**

Where Do Moral Standards Come From?

This is a panel discussion on a current debate in moral theory. It concerns whether there are basic moral standards that can be considered universally valid. Some think that morality is relative to individuals, cultures or systems of beliefs. To others, there is no moral right or wrong at all. On the other hand, objectivists reject these claims on various grounds, from science to religion. The presenters in this panel will bring a plethora of arguments for such views and assess whether or not common ground could be found in ongoing debate.

Presentation Index: J-VS 1 **Present Time:** 5:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Markeson, John; Bemis, Nathaniel; Nelson, Sean; Borgert-Spaniol, Matthew; Lordbock, Arthur; Glader, Andrew; Rannow, Caleb; Heltemes, Christopher; Prellwitz, Katherine	Nuccetelli, Susana	Philosophy

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Abfalter, Nathan	Wireless Vital Sign Monitoring System	Hossain, Md; Yao, Aiping; Meichsner, Jie	4:00 PM	Ballroom
Achtelik-Weber, Melissa	Mental Imagery and Pitching for SCSU Baseball	Edrisinha, Chaturi	12:20 PM	Glacier South
Adamski, Danielle	Determination of Bisphenol A in Various Samples Using a Microextraction Technique and High Performance Liquid Chromatography with Fluorescence Detection	Jeannot, Michael	2:00 PM	Ballroom
Addington, Eric	Cost of Attendance and Cost of Living: An Examination of Minnesota's Private Institutions of Higher Education and Federal Financial Aid Policy	Silvestre, Gabriela	11:20 AM	Glacier North
Adhikari, Niranjan	Environmental Monitoring Device (EMD)	Thamvichai, Ratchaneekorn	4:00 PM	Ballroom
Adkins, Jessica	Stearns County Chlamydia Report	Lenz, Brenda; Henry, Vonna; Hiemenz, Melinda	2:00 PM	Ballroom
Agarwal, Ankit Vinodkuma	Cost Analysis of Cut to Length Blanks Process at Bobcat	Shah, Hiral	2:00 PM	Voyageurs South
Ahlijah, Martin	Comparison of Factors Affecting Retention of DGS and Non-DGS Students at SCSU	Robinson, David	4:00 PM	Ballroom
Albrecht, Jacob	MME Senior Design FSAE Car	Miller, Kenneth	10:30 AM	Voyaguers South
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AlYami, Naif	Unmanned Aerial Vehicle	Hou, Ling	9:00 AM	Ballroom
ALZmanan, Hamad	RFID Shopping System	Hossain, Md	4:00 PM	Ballroom
Amala, Rebecca	Complex Chemical Equilibrium: An Expert-Novice Study	Krystyniak, Rebecca	4:00 PM	Ballroom
Anderson, Erik	Stearns County Chlamydia Report	Lenz, Brenda; Henry, Vonna; Hiemenz, Melinda	2:00 PM	Ballroom
Arbuckle, Ashly	Got Gym Germs?	Edrisinha, Chaturi	11:20 AM	Glacier South
Archambault, Tanya	Effects of Extra-Stimulus Prompts to Promote Respectful Computer Usage at SCSU	Edrisinha, Chaturi	2:20 PM	Granite
Archer, Julie	SCSU Spring Student Survey	Zerbib, Sandrine; Robinson, David; Frank, Stephen; Wagner, Steven; Hammes, Michelle; Kulas, John	9:50 AM	Alumni
Archer, Julie	SCSU Survey	Frank, Stephen	2:00 PM	Ballroom

STUDENT PRESENTER INDEX

Student Presenter	Project Title	Sponsor(s)	Time	Room
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Arthanayaka, Imali	Importance of Computer Forensics Tools in Digital Forensics	Schmidt, Mark	5:40 PM	Glacier South
Aryal, Nishant	Capacity Improvement of the Paint Line System at Bobcat	Shah, Hiral	9:50 AM	Voyaguers South
Atadjanov, Otabek	RFID Shopping System	Hossain, Md	4:00 PM	Ballroom
Au, Chin Cheung	Teaching a Child with Autism to Toothbrush	Edrisinha, Chaturi	8:20 AM	Cascade
Awalt, Shane	Backwater and Associated Hydraulic Choking in Stratified Density Currents	Fedele, Juan	9:00 AM	Ballroom
Backer, Brian	Nanowire and Single Crystal Growth Techniques for Perylene Tetracarboxyl Diimide Derivatives	Lidberg, Russell; Neu, Donald	2:00 PM	Ballroom
Backlund, Nicolas	Students' Perception of Campus Safety at SCSU	Zerbib, Sandrine	3:00 PM	Alumni
Bauer, Andrew	Analysis of the Relationship Between Tornado Frequency and the Fujita Scale	Wixon, Lewis	9:00 AM	Ballroom
Baune, Kala	Got Gym Germs?	Edrisinha, Chaturi	11:20 AM	Glacier South
Befikadu, Netsanet	The First Annotation of Glycine, Serine, and Threonine Metabolic Pathways in Planctomyces Limnophilus	Kvaal, Christopher	4:10 PM	Voyageurs South
Behrens, Anna	SCSU Spring Student Survey	Zerbib, Sandrine; Robinson, David; Frank, Stephen; Wagner, Steven; Hammes, Michelle; Kulas, John	9:50 AM	Alumni
Bekele, Nazrawit	Women's Empowernment and Economic Growth	MacDonald, Lynn	11:00 AM	Granite
Bekkala, Eldon	MME Senior Design FSAE Car	Miller, Kenneth	10:30 AM	Voyaguers South
Belay, Mikiyas	Histidine Metabolism in Plantomyces Limnophilus DSM 3776	Kvaal, Christopher	9:00 AM	Ballroom
Belden, Christopher	Analyzing Walkability Crossability of Downtown Neigborhoods	Woldeamanuel, Mintesnot	2:00 PM	Ballroom
Bemis, Nathaniel	Where Do Moral Standards Come From?	Nuccetelli, Susana	5:00 PM	Voyageurs South
Bengtson, Neil	Automated Loader/Unloader for the E8 Blade Straightener	Bekkala, Andrew	5:00 PM	Voyageurs North
Benn, Dana	A Community Assessment Regarding Home Visits by Public Health Nurses	Lenz, Brenda; Hiemenz, Melinda	2:00 PM	Ballroom
Benson, Lisa	Physical Activity in Kandiyohi County	Lenz, Brenda; Hiemenz, Melinda; Warner, Susan	2:00 PM	Ballroom
Bentley, Carol	Bloody Sunday: An Investigative Report	Jordan, Christopher	4:30 PM	Voyageurs North

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Student Presenter	Project Title	Sponsor(s)	Time	Room
Berglund, Jessica	Effects of Extra-Stimulus Prompts to Promote Respectful Computer Usage at SCSU	Edrisinha, Chaturi	2:20 PM	Granite
Berling, Gregory	Solar Powered Pontoon Boat	Glazos, Michael	9:00 AM	Ballroom
Bernard, Paul	Garage Drummer: Integration of Electronic Media and Percussion in Performance	Vermillion, Terry	1:20 PM	Ruth Gant Recital Hall, Rm 230, Performing Arts Center
Berning, Melita	Exit Strategies	Edrisinha, Chaturi	10:10 AM	Cascade
Bertilson, Zechariah	Autonomous Tracking Security System	Petzold, Mark	9:00 AM	Ballroom
Bhatta, Lalit	Hire Me!	Polacco, Alexander	2:00 PM	Ballroom
Bhattarai, Sagar	Application of Information Technology Support System to Develop Automated Reports at Earthmoving Equipment Manufacturing Company	Shah, Hiral	10:10 AM	Voyaguers South
Bialek, Marissa	A Changing View of SCSU	O'Brien, Maureen	9:00 AM	Glacier South
Biesanz, Eli	A Relation Between Military Expeditures And The Effects Upon Median Wages In A Global Community	MacDonald, Lynn	10:30 AM	Granite
Bilben, Summer	Saint Cloud Judicial System Funnel	Robinson, David; Xu, Hui	2:00 PM	Oak
Bjorkquist, Angelica	Regulation of PGC1-beta	Olson, Brian	2:00 PM	Ballroom
Bjornson, Josh	CentraCare Volunteer Project	Kuznia, Jodi	6:00 PM	Alumni
Bloomquist, Katharine	Perceptions of Feminism	Berila, Elizabeth	4:00 PM	Ballroom
Borgert-Spaniol, Matthew	Where Do Moral Standards Come From?	Nuccetelli, Susana	5:00 PM	Voyageurs South
Bourgeois, Emily	SCSU Where is the Love?	Edrisinha, Chaturi	11:40 AM	Glacier South
Bowman, Jennifer	A Community Assessment Regarding Home Visits by Public Health Nurses	Lenz, Brenda; Hiemenz, Melinda	2:00 PM	Ballroom
Braun, Michele	Assessment Surveys of SCSU Doctoral Students' Persistence and Degree Obtainment	Silvestre, Gabriela	2:40 PM	Glacier North
Brethorst, Jason	Development of a Chemotherapeutic Agent Derived from the Natural Product Costunolide	Mechelke, Mark	2:00 PM	Ballroom
Brisley, Justin	Wireless Vital Sign Monitoring System	Hossain, Md; Yao, Aiping; Meichsner, Jie	4:00 PM	Ballroom
Brown, Angela	Queer Youth Community Organizing: Intents and Outcomes of Youth Mobilization in LGBTQ Service Programs	Philion, Stephen	8:00 AM	Glacier North
Brown, Nicholas	Service Learning at Centracare MN	Kuznia, Jodi	5:40 PM	Alumni
Bui, Anh	Effect of Streptozotocin on the Proliferation and Cytokine Secretion of Mouse Splenocytes	Cetkovic-Cvrlje, Marina	9:00 AM	Ballroom
Burk, Sara	A Song For You	Edrisinha, Chaturi	2:00 PM	Granite

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Student Presenter	Project Title	Sponsor(s)	Time	Room
Cacek, Theresa	Diatoms: Modeling the Effects of High Flow Rate and Still Flow Rate on Orientation and Scouring of Stalk Forming Gomphonema and Cymbella from the Substrate	Julius, Matthew	9:00 AM	Ballroom
Caird, Scott	Design of an Automated Positioning System	Sezen, Ahmet	4:00 PM	Ballroom
CarlinSchauer, Kyle	Exit Strategies	Edrisinha, Chaturi	10:10 AM	Cascade
Carlson, Jennifer	SCSU Where is the Love?	Edrisinha, Chaturi	11:40 AM	Glacier South
Carlson, Kelsey	Preserving Tradition within a Changing Homeland: Historiography, Cultural Identity and the Movement Patterns of the Bdewakantuwan Dakota	John, Gareth	2:00 PM	Ballroom
Carlson, Nicholas	Autism Spectrum Disorder and Comorbidities in Wright County	Lenz, Brenda; Hiemenz, Melinda; Morrison-Sandberg, Leslie	2:00 PM	Ballroom
Carlstrom, Rebecca	Stearns County Chlamydia Report	Lenz, Brenda; Henry, Vonna; Hiemenz, Melinda	2:00 PM	Ballroom
Casserly, Alexandra	Understanding the Society We Live In and the Causes of Poverty	Freilinger, Rebecca; Zuo, Jiping	4:00 PM	Ballroom
Chen, Charlie	Perceptions of Safety on Campus	Zerbib, Sandrine	2:20 PM	Alumni
Chen, Jing	Persistence of Vision Display and Uniform Circular Motion Demonstration	Liu, Zengqiang	2:00 PM	Ballroom
Chen, Xin	High Speed Circuit Design and Simulation	Zheng, Yi	4:00 PM	Ballroom
Chitrakar, Neeva	Investigation of Sauk River Water and Sediment Quality	Bender, Michner	9:00 AM	Ballroom
Cody, Elizabeth	Affordable Senior Housing	Ugochukwu, Chukwunyere	11:20 AM	Alumni
Colbert, David	Service Learning at Centracare MN	Kuznia, Jodi	5:40 PM	Alumni
Cole, Tayler	Got Gym Germs?	Edrisinha, Chaturi	11:20 AM	Glacier South
Compaore, Hassane	Phase Locked Loop	Hossain, Md	2:00 PM	Ballroom
Condon, Michael	VM Computer Forensics	Schmidt, Mark	6:00 PM	Glacier South
Connelly, Ian	CentraCare Volunteer Project	Kuznia, Jodi	6:00 PM	Alumni
Conteh, Lynn	Ethnic Minority Participation in Decision Making in HIED	Silvestre, Gabriela	3:00 PM	Glacier North
Cowell, Bobbie	CentraCare Service-Learning Project	Kuznia, Jodi	5:20 PM	Alumni
Cronk, Elizabeth	Safety Awareness on Campus: Looking at the 2011 Student Survey	Zerbib, Sandrine	2:40 PM	Alumni
Cuevas Ruiz, Carlos	Educational System for Ultrasound Imaging	Zheng, Yi	4:00 PM	Ballroom

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Student Presenter	Project Title	Sponsor(s)	Time	Room
Current, Meghan	Cultural-Linguistic Diversity Trends in Speech-Language Pathologists' Caseloads	Whites, Margery	9:00 AM	Ballroom
Cuthbert, Zachary	Safety Awareness on Campus: Looking at the 2011 Student Survey	Zerbib, Sandrine	2:40 PM	Alumni
Dahal, Abhinav	Omni Directional Vehicle with Obstacle Avoidance and GPS Tracker	Thamvichai, Ratchaneekorn	4:00 PM	Ballroom
Dahl, Casey	Visiting CentraCare	Kuznia, Jodi	5:00 PM	Alumni
Dalhoff, Zachary	Measurement of Glutamate and GABA in Planaria	Ramakrishnan, Latha	2:00 PM	Ballroom
Dammann, April	Comparing Biological Effects of Estrone (E1) and 17β-estradiol (E2) in Mature Fathead Minnows	Schoenfuss, Heiko	9:30 AM	Glacier South
Dangol, Prabal	Design and Build of Small Battery Operated Scooter for Large Pipe Inspection	Zhao, Yongli	9:30 AM	Voyaguers South
Dangol, Prabal	Application of Kaizen for Improvement of Weld Line for Landscape Rakes at Bobcat	Shah, Hiral	11:00 AM	Voyageurs South
Dangol, Shreeja	Environmental Monitoring Device (EMD)	Thamvichai, Ratchaneekorn	4:00 PM	Ballroom
Davenport, Ashley	Pre-Competition Hydration Status of High School Athletes Participating in Alpine Skiing	Bacharach, David	9:00 AM	Ballroom
Davies, Andrew	Lateral Field Time-of-Flight for Determination of Surface Charge Carrier Mobility	Lidberg, Russell	2:00 PM	Ballroom
Dege, Lia	Crosswalk Experiment	Edrisinha, Chaturi	12:00 PM	Glacier South
Demee, Jason	An Analysis of the Level of Service for Multi-modal Transportation Systems on the SCSU Campus	Woldeamanuel, Mintesnot	2:00 PM	Ballroom
DeSaer, Cassie	Effect of Carbamazepine on Planarian-Seizure Like Activity	Ramakrishnan, Latha	11:20 AM	Cascade
DeSaer, Cassie	Inhibition of Planarian Paroxysms by Riluzole	Ramakrishnan, Latha	2:00 PM	Ballroom
DeSaer, Cassie	Measurement of Glutamate and GABA in Planaria	Ramakrishnan, Latha	2:00 PM	Ballroom
Deuermeyer, Hank	Nanowire and Single Crystal Growth Techniques for Perylene Tetracarboxyl Diimide Derivatives	Lidberg, Russell; Neu, Donald	2:00 PM	Ballroom
Dhungel, Abishek	Study of Anticancer Activities of Ruthenium-Benzimidiazole Metal Complexes Using Fluorometry	Sreerama, Lakshmaiah	2:00 PM	Ballroom
Diedrichsen, Douglas	Management of Household Waste in Ghana	Ugochukwu, Chukwunyere	11:00 AM	Alumni
Diedrichsen, Douglas	An Analysis of the Level of Service for Multi-modal Transportation Systems on the SCSU Campus	Woldeamanuel, Mintesnot	2:00 PM	Ballroom
DiLorenzo, Tricia	Exit Strategies	Edrisinha, Chaturi	10:10 AM	Cascade

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Student Presenter	Project Title	Sponsor(s)	Time	Room
DuMont, Suzanne	Somali Immigrant Families: Their Views and Practice of Literacy	Robinson, James	3:50 PM	Voyageurs North
Dunai, Cordelia	Investigating the Biosynthetic Pathways of Cysteine and Methionine in Planctomyces Limnophilus	Kvaal, Christopher	9:00 AM	Ballroom
Dunai, Cordelia	Does Deficiency in the T-cell Signaling Protein, Jak3, Affect the Development of Murine Type 1 Diabetes?	Cetkovic-Cvrlje, Marina	9:50 AM	Cascade
Dundore, Jessica	Speech-Language Pathologists' Perceptions and Understanding of Cultural-Linguistic Diversity	Whites, Margery	9:00 AM	Ballroom
Dwyer, Cory	Two Halves of Modern Capitalism: Haves and Have-Nots	Freilinger, Rebecca	10:10 AM	Glacier South
Dwyer, Laura	Perceptions of Safety on Campus	Zerbib, Sandrine	2:20 PM	Alumni
Edberg, Lucas	SCSU Spring Student Survey	Zerbib, Sandrine; Robinson, David; Frank, Stephen; Wagner, Steven; Hammes, Michelle; Kulas, John	9:50 AM	Alumni
Edberg, Lucas	Comparison of Dual Users from Two Frames with Cell Only Users and Landline Only Users	Zerbib, Sandrine; Robinson, David; Frank, Stephen; Wagner, Steven; Hammes, Michelle; Kulas, John	4:00 PM	Ballroom
Eha, Alexander	All-Terrain Robotic Device	Fedele, Juan; Petzold, Mark; Covey, Steven	9:00 AM	Ballroom
Einck, Alan	The Effects of Burning and Herbicide Treatments on Spotted Knapweed (Centaurea maculosa)	Arriagada, Jorge	9:00 AM	Ballroom
Fadlallah, Mohammed	Multiple Channel High-Speed and High-Resolution Analog Digital Converter for Shearwave Dispersion Ultrasound Vibrometry	Hou, Ling; Zheng, Yi; Yao, Aiping	4:00 PM	Ballroom
Farooqi, Tahir	Cost Analysis of Cut to Length Blanks Process at Bobcat	Shah, Hiral	2:00 PM	Voyageurs South
Feder, Ashley	Parking System Analysis: Improving St. Cloud's Downtown Infrastructure	Heiman, James	3:30 PM	Voyageurs North
Feia, John	Automated Loader/Unloader for the E8 Blade Straightener	Bekkala, Andrew	5:00 PM	Voyageurs North
Feldewerd, Meghan	SCSU Where is the Love?	Edrisinha, Chaturi	11:40 AM	Glacier South
Feldick, Ashley	Stroop Effect And Cueing	Valdes, Leslie	2:00 PM	Ballroom
Fiegen, Melissa	Stearns County Chlamydia Report	Lenz, Brenda; Henry, Vonna; Hiemenz, Melinda	2:00 PM	Ballroom

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Student Presenter	Project Title	Sponsor(s)	Time	Room
Fliegelman, Leslie	Robotic Painting System	Thamvichai, Ratchaneekorn; Sezen, Ahmet; Hou, Ling	12:00 PM	Voyageurs North
Fliegelman, Leslie	Robotic Painting System	Thamvichai, Ratchaneekorn; Sezen, Ahmet; Hou, Ling	4:00 PM	Ballroom
Fonken, Gael	Transatlantic Perspectives on Cultural Sovereignty in MN: Staging Multilingual Conversations With Gerald Vizenor and Carme Riera	Pryately, Margaret	12:00 PM	Alumni
Forster, Antony	Have You Erased Your Electronic Data Properly?	Schmidt, Mark	5:20 PM	Glacier South
Frick, Tasha	Interest and Attitude in Chemistry: Do Different Instructional Strategies Have an Impact on Student Achievement?	Krystyniak, Rebecca	4:00 PM	Ballroom
Friebel, Nicholas	All-Terrain Robotic Device	Fedele, Juan; Petzold, Mark; Covey, Steven	9:00 AM	Ballroom
Frymark, Justin	CAN Data Logger	Glazos, Michael	4:00 PM	Ballroom
Gahm, Noah	Compulsive Hoarding	Wells, Scott	12:20 PM	Alumni
Garimella, Sanjeet Chandra	Capacity Improvement of the Paint Line System at Bobcat	Shah, Hiral	9:50 AM	Voyaguers South
Gautam, Sabin	Ultrasound Pulser Unit	Zheng, Yi	4:00 PM	Ballroom
Gelormino, Kevin	Men's Groups and Movements Research Methods Paper	Zuo, Jiping	2:00 PM	Voyageurs North
Gelormino, Kevin	Methods Research	Zuo, Jiping	2:20 PM	Voyageurs North
Genty, Travis	The Big Woods of Wright County, Minnesota: Past, Present, and Future	Wixon, Lewis; Blinnikov, Mikhail	9:00 AM	Ballroom
Gilseth, Roshni	Exit Strategies	Edrisinha, Chaturi	10:10 AM	Cascade
Glader, Andrew	Where Do Moral Standards Come From?	Nuccetelli, Susana	5:00 PM	Voyageurs South
Goltz, Wendy	Speech-Language Pathologists' Perceptions and Understanding of Cultural-Linguistic Diversity	Whites, Margery	9:00 AM	Ballroom
Gong, Hwee Kiat	Effect of Streptozotocin on the Proliferation and Cytokine Secretion of Mouse Splenocytes	Cetkovic-Cvrlje, Marina	9:00 AM	Ballroom
Gong, Hwee Kiat	Investigating the Biosynthetic Pathways of Cysteine and Methionine in Planctomyces Limnophilus	Kvaal, Christopher	9:00 AM	Ballroom
Good, Katherine	Analyzing Factors Affecting the Auto Ownership of American Households Using NHTS.	Woldeamanuel, Mintesnot	2:00 PM	Ballroom
Gordon, Trevor	Service Learning at Centracare MN	Kuznia, Jodi	5:40 PM	Alumni
Granlund, Donald	Investigation of Sauk River Water and Sediment Quality	Bender, Michner	9:00 AM	Ballroom

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Student Presenter	Project Title	Sponsor(s)	Time	Room
Greene, Nicholas	MME Senior Design FSAE Car	Miller, Kenneth	10:30 AM	Voyaguers South
Grier, Megan	Investigation of Sauk River Water and Sediment Quality	Bender, Michner	9:00 AM	Ballroom
Grossman, Anthony	An Analysis of the Modern Usage of One-Room Schoolhouses in Stearns County	Wixon, Lewis	9:00 AM	Ballroom
Grosz, Danielle	Students' Understanding of Equilibrium	Krystyniak, Rebecca	9:00 AM	Ballroom
Gruber, Tiffany	Cultural-Linguistic Diversity Trends in Speech-Language Pathologists' Caseloads	Whites, Margery	9:00 AM	Ballroom
Grunst, Samantha	Hazardous Texting	Edrisinha, Chaturi	11:00 AM	Glacier South
Gucinski, Mark	The Development of a DNA Fingerprinting Method for Bacillus cereus	Gulrud, Kristin	2:00 PM	Ballroom
Guenigsman, Alyssa	Autism Spectrum Disorder and Comorbidities in Wright County	Lenz, Brenda; Hiemenz, Melinda; Morrison-Sandberg, Leslie	2:00 PM	Ballroom
Haggstrom, Brady	SCSU Spring Student Survey	Zerbib, Sandrine; Robinson, David; Frank, Stephen; Wagner, Steven; Hammes, Michelle; Kulas, John	9:50 AM	Alumni
Haggstrom, Brady	SCSU Survey	Frank, Stephen	2:00 PM	Ballroom
Haider, Daniel	An Analysis of the Level of Service for Multi-modal Transportation Systems on the SCSU Campus	Woldeamanuel, Mintesnot	2:00 PM	Ballroom
Halonen, Daniel	An Experiment Evoking Thanks	Edrisinha, Chaturi	2:40 PM	Granite
Hancock, Harrison	Research Solar Furnace with Tracking Heliostat	Miller, Kenneth	8:00 AM	Voyageurs South
Hancock, Harrison	Application of Kaizen for Improvement of Weld Line for Landscape Rakes at Bobcat	Shah, Hiral	11:00 AM	Voyageurs South
Hancock, Patrick	All-Terrain Robotic Device	Fedele, Juan; Petzold, Mark; Covey, Steven	9:00 AM	Ballroom
Hansberger, Mark	Subscriptions and Redemptions vs the Economy	Hughes, Patricia	4:30 PM	Glacier North
Hanson, Jamie	Restoring Minnesota Prairie Sites Dominated by Invasive Species via Successional Management Strategies	Arriagada, Jorge	2:00 PM	Ballroom

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Student Presenter	Project Title	Sponsor(s)	Time	Room
Hardrath, Jacquelin	SCSU Spring Student Survey	Zerbib, Sandrine; Robinson, David; Frank, Stephen; Wagner, Steven; Hammes, Michelle; Kulas, John	9:50 AM	Alumni
Hardrath, Jacquelin	Saint Cloud Judicial System Funnel	Robinson, David; Xu, Hui	2:00 PM	Oak
Hardrath, Jacquelin	Comparison of Dual Users from Two Frames with Cell Only Users and Landline Only Users	Zerbib, Sandrine; Robinson, David; Frank, Stephen; Wagner, Steven; Hammes, Michelle; Kulas, John	4:00 PM	Ballroom
Hardy, Jenna	Effects of Extra-Stimulus Prompts to Promote Respectful Computer Usage at SCSU	Edrisinha, Chaturi	2:20 PM	Granite
Harguth, Jacob	Using AFM to Track Changes in Surface Topography	Petitto, Sarah	2:00 PM	Ballroom
Harris, Wesley	Visiting CentraCare	Kuznia, Jodi	5:00 PM	Alumni
Hartwig, Elissa	A Song For You	Edrisinha, Chaturi	2:00 PM	Granite
Hawkins, Dawn	The Use of an Industrial By-product as a Soil Amendment and Its Effects on Soil Physical/chemical Characteristics and Nutrient Retention	Bender, Michner	9:00 AM	Ballroom
Helgeson, Grant	Automated Loader/Unloader for the E8 Blade Straightener	Bekkala, Andrew	5:00 PM	Voyageurs North
Heltemes, Christopher	Where Do Moral Standards Come From?	Nuccetelli, Susana	5:00 PM	Voyageurs South
Hendrickson, Kathryn	Effects of Goniothalamin Derivatives on HT29 Colon Cancer Cells	Mechelke, Mark; Olson, Brian	2:00 PM	Ballroom
Henry, Karie	Attitudes and Effectiveness of Social Host Policy	Zerbib, Sandrine	2:00 PM	Alumni
Hettiarachchi, Charitha	E-Voting Properties and Its Issues	Herath, Susantha	11:40 AM	Oak
Hettiarachchi, Charitha	Importance of Computer Forensics Tools in Digital Forensics	Schmidt, Mark	5:40 PM	Glacier South
Hickerson, Aleisha	Autism Spectrum Disorder and Comorbidities in Wright County	Lenz, Brenda; Hiemenz, Melinda; Morrison-Sandberg, Leslie	2:00 PM	Ballroom
Hillyer, Jesse	Cigarette Experiment	Edrisinha, Chaturi	3:00 PM	Granite
Hilsgen, Eric	Physical Activity in Kandiyohi County	Lenz, Brenda; Hiemenz, Melinda; Warner, Susan	2:00 PM	Ballroom

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Student Presenter	Project Title	Sponsor(s)	Time	Room
Hobbs, Joseph	Is There a Difference in Immune System Involvement in Murine Autoimmune Versus Toxic Type 1 Diabetes?	Cetkovic-Cvrlje, Marina	9:30 AM	Cascade
Hoffarth, Samantha	Stearns County Chlamydia Report	Lenz, Brenda; Henry, Vonna; Hiemenz, Melinda	2:00 PM	Ballroom
Hoikka, Karyn	A Community Assessment Regarding Home Visits by Public Health Nurses	Lenz, Brenda; Hiemenz, Melinda	2:00 PM	Ballroom
Holder, Molly	Attitudes and Effectiveness of Social Host Policy	Zerbib, Sandrine	2:00 PM	Alumni
Hollan, Michael	Forecasting Difficulties of the Severe Hail Outbreak in Southern North Dakota on 13-14 July 2010	Kubesh, Rodney	3:00 PM	Oak
Holm, Jenna	Threshold Population of Full-Time Fire Departments in the State of Minnesota	Wixon, Lewis	2:20 PM	Glacier South
Holman, Whitney	Comparative Effectiveness of Treatment Schedules for Childhood Speech Sound Disorders	Smits-Bandstra, Sarah; Griffin, Lori	2:00 PM	Ballroom
Holmbeck, Elizabeth	Analyzing Walkability Crossability of Downtown Neigborhoods	Woldeamanuel, Mintesnot	2:00 PM	Ballroom
Holt, Beckie	A Song For You	Edrisinha, Chaturi	2:00 PM	Granite
Holtz, Bradley	Forecasting Housing Bubbles	Hughes, Patricia	9:00 AM	Voyageurs South
Hovelson, Johannes	Energy Efficent Home Options	Ugochukwu, Chukwunyere	2:00 PM	Ballroom
Howe, Marie	The Development of a DNA Fingerprinting Method for Bacillus cereus	Gulrud, Kristin	2:00 PM	Ballroom
Huang, Chunyang	Speech-Language Pathologists' Perceptions and Understanding of Cultural-Linguistic Diversity	Whites, Margery	9:00 AM	Ballroom
Huber Rodriguez, Courtney	Beethoven's "Appassionata Piano Sonata No. 23 in F Minor, Op. 57"	Wilhite, Carmen; Moore, Albert	12:30 PM	Ruth Gant Recital Hall, Rm 230, Performing Arts Center
Imholte, William	Letterpress Printing	Quinn, Justin	11:20 AM	Voyageurs North
Janckila, Jean	Autism Spectrum Disorder and Comorbidities in Wright County	Lenz, Brenda; Hiemenz, Melinda; Morrison-Sandberg, Leslie	2:00 PM	Ballroom
Janckila, Jennifer	Stearns County Chlamydia Report	Lenz, Brenda; Henry, Vonna; Hiemenz, Melinda	2:00 PM	Ballroom
Janckila, Stacy	Effect of JAK3 Mutation on Insulitis Development in a Mouse Model of Autoimmune Type 1 Diabetes	Cetkovic-Cvrlje, Marina	2:00 PM	Ballroom
Jansky, Sarah	Physical Activity in Kandiyohi County	Lenz, Brenda; Hiemenz, Melinda; Warner, Susan	2:00 PM	Ballroom

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Student Presenter	Project Title	Sponsor(s)	Time	Room
Jennen, Scott	Mathematical Psychology	Melcher, Joseph; Sharpe, Kevin	4:00 PM	Ballroom
Johnson, Brittany	Snatch and Run	Edrisinha, Chaturi	8:40 AM	Cascade
Johnson, Chad	Pre-Competition Hydration Status of High School Athletes Participating in Alpine Skiing	Bacharach, David	9:00 AM	Ballroom
Johnson, Clare	Hazardous Texting	Edrisinha, Chaturi	11:00 AM	Glacier South
Johnson, Jared	Adjustable Shear Die	Bekkala, Andrew	5:40 PM	Voyageurs North
Johnson, Jason	Robotic Painting System	Thamvichai, Ratchaneekorn; Sezen, Ahmet; Hou, Ling	12:00 PM	Voyageurs North
Johnson, Jason	Robotic Painting System	Thamvichai, Ratchaneekorn; Sezen, Ahmet; Hou, Ling	4:00 PM	Ballroom
Johnson, Jenna	Cardiovascular Risk in Clients Age 30-64: Concepcion, Chile	Lenz, Brenda; Hiemenz, Melinda	2:00 PM	Ballroom
Johnson, Timothy	Stearns County Chlamydia Report	Lenz, Brenda; Henry, Vonna; Hiemenz, Melinda	2:00 PM	Ballroom
Jorgenson, Zachary	Comparison of Responses to 17β-Estradiol Exposure Between an Endangered Species and Two Model Species	Schoenfuss, Heiko	6:00 PM	Voyageurs North
Justin, Andrew	Cooling Fan Braking System	Zhao, Yongli	8:40 AM	Voyageurs South
Kalayar, Chaw	The Role of Textbooks in Elementary Schools: Teacher and Student Perceptions	Subrahmanyan, Lalita	4:10 PM	Granite
Kalbakdalen, Jessica	A Community Assessment Regarding Home Visits by Public Health Nurses	Lenz, Brenda; Hiemenz, Melinda	2:00 PM	Ballroom
Kamga, Joseph Pascal	Microgrid	Hossain, Md	4:00 PM	Ballroom
Kampen, Gina	A Community Assessment Regarding Home Visits by Public Health Nurses	Lenz, Brenda; Hiemenz, Melinda	2:00 PM	Ballroom
Kanadji, Aboubacar	High Speed Circuit Design and Simulation	Zheng, Yi	4:00 PM	Ballroom
Kapus, Tyler	CentraCare Volunteer Project	Kuznia, Jodi	6:00 PM	Alumni
Karkee, Daniel	Ultrasound Pulser Unit	Zheng, Yi	4:00 PM	Ballroom
Karmacharya, Pratish	Ultrasound Pulser Unit	Zheng, Yi	4:00 PM	Ballroom
Karschnik, Travis	Effects of Edges on Plant Communities in an Artificially Fragmented Landscape	Cook, William	3:30 PM	Voyageurs South
Kathrein, Lacy	Crosswalk Experiment	Edrisinha, Chaturi	12:00 PM	Glacier South
Kauffman, Seth	Energy Efficent Home Options	Ugochukwu, Chukwunyere	2:00 PM	Ballroom

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Student Presenter	Project Title	Sponsor(s)	Time	Room
Kaufmann, Kathryn	Influence of Block Angle on Take-off Velocity in Swim Starts	Street, Glenn	9:00 AM	Ballroom
Kautz, Amber	Stroop Effect And Cueing	Valdes, Leslie	2:00 PM	Ballroom
Kellar, Donald	SCSU Spring Student Survey	Zerbib, Sandrine; Robinson, David; Frank, Stephen; Wagner, Steven; Hammes, Michelle; Kulas, John	9:50 AM	Alumni
Kellar, Donald	SCSU Survey	Frank, Stephen	2:00 PM	Ballroom
Kern, Noel	Cigarette Experiment	Edrisinha, Chaturi	3:00 PM	Granite
Kettler, Kathryn	Mental Imagery and Pitching for SCSU Baseball	Edrisinha, Chaturi	12:20 PM	Glacier South
Khadka, Manoj	Nanowire and Single Crystal Growth Techniques for Perylene Tetracarboxyl Diimide Derivatives	Lidberg, Russell; Neu, Donald	2:00 PM	Ballroom
Khan, Adib	Smart Grid System	Hossain, Md	9:00 AM	Ballroom
Khan, Aneeqa	Risk Assessment Analysis on E-Voting Systems	Herath, Susantha	11:20 AM	Oak
Khan, Niveen	High Speed Circuit Design and Simulation	Zheng, Yi	4:00 PM	Ballroom
Kharel, Subash	Crystallization of Muscle Fatty Acid Binding Protein With Non-stroidal Anti-inflammatory Drugs	Jacobson, Bruce	2:00 PM	Ballroom
Kharel, Subash	The First Annotation of Glycine, Serine, and Threonine Metabolic Pathways in Planctomyces Limnophilus	Kvaal, Christopher	4:10 PM	Voyageurs South
Khat, James	Attitudes and Effectiveness of Social Host Policy	Zerbib, Sandrine	2:00 PM	Alumni
Kiffmeyer, Krista	A Community Assessment Regarding Home Visits by Public Health Nurses	Lenz, Brenda; Hiemenz, Melinda	2:00 PM	Ballroom
King, Rachel	Management of Household Waste in Ghana	Ugochukwu, Chukwunyere	11:00 AM	Alumni
King, Rachel	Analyzing Factors Affecting the Auto Ownership of American Households Using NHTS.	Woldeamanuel, Mintesnot	2:00 PM	Ballroom
Kingbay, Chad	Reducing Foreclosures	Hughes, Patricia	4:10 PM	Glacier North
Klein, Jessica	A Community Assessment Regarding Home Visits by Public Health Nurses	Lenz, Brenda; Hiemenz, Melinda	2:00 PM	Ballroom
Knigge, Samantha	SCSU Where is the Love?	Edrisinha, Chaturi	11:40 AM	Glacier South
Knudson, Tyler	Amateur Baseball Team Names	Wixon, Lewis	9:00 AM	Ballroom
Koehler, Lauren	Labeling Genetically Modified Foods	Simpson, Patricia	4:00 PM	Ballroom
Koshiol, Andrea	Stearns County Chlamydia Report	Lenz, Brenda; Henry, Vonna; Hiemenz, Melinda	2:00 PM	Ballroom

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Student Presenter	Project Title	Sponsor(s)	Time	Room
Kremers, Stephanie	Safety Awareness on Campus: Looking at the 2011 Student Survey	Zerbib, Sandrine	2:40 PM	Alumni
Krone, Adam	Electric Car Chassis	Byun, Jeongmin	2:40 PM	Voyageurs South
Kruse, Alexander	Solar Powered Pontoon Boat	Glazos, Michael	9:00 AM	Ballroom
Kueppers, Michael	Investigation of Sauk River Water and Sediment Quality	Bender, Michner	9:00 AM	Ballroom
Kummet, Brendan	Evaluating Players Through the NFL Combine	MacDonald, Lynn	9:30 AM	Granite
Kunde, Kristopher	Predicting the Number of Inmates in Stearns County Jail	Robinson, David; Xu, Hui	2:20 PM	Oak
Kunde, Lucas	Bankruptcy Rates	MacDonald, Lynn	9:50 AM	Granite
Kunkel, Arin	Autonomous Tracking Security System	Petzold, Mark	9:00 AM	Ballroom
Kunwar, Yejur	The First Annotation of Glycine, Serine, and Threonine Metabolic Pathways in Planctomyces Limnophilus	Kvaal, Christopher	4:10 PM	Voyageurs South
Landwehr, Kimberly	Stearns County Chlamydia Report	Lenz, Brenda; Henry, Vonna; Hiemenz, Melinda	2:00 PM	Ballroom
Langlois, Corey	Service Learning at Centracare MN	Kuznia, Jodi	5:40 PM	Alumni
Lanie, Jesse	Adjustable Shear Die	Bekkala, Andrew	5:40 PM	Voyageurs North
Lanners, Chad	Snatch and Run	Edrisinha, Chaturi	8:40 AM	Cascade
Lauritsen, Matthew	Secular Mode, Sacred Message: How Contemporary Christian Musicians are Called by God to Perform	Philion, Stephen	8:20 AM	Glacier North
Lawler, Sean	Analyzing Factors Affecting the Auto Ownership of American Households Using NHTS.	Woldeamanuel, Mintesnot	2:00 PM	Ballroom
LeBlanc, Laura	Cultural-Linguistic Diversity Trends in Speech-Language Pathologists' Caseloads	Whites, Margery	9:00 AM	Ballroom
Lee, Chong	Remote Home Control System	Yao, Aiping	4:00 PM	Ballroom
Lee, Desiree	Lateral Field Time-of-Flight for Determination of Surface Charge Carrier Mobility	Lidberg, Russell	2:00 PM	Ballroom
Lee, Yong Heng	Effect of Streptozotocin on the Proliferation and Cytokine Secretion of Mouse Splenocytes	Cetkovic-Cvrlje, Marina	9:00 AM	Ballroom
Lem, Wye	Multiple Channel High-Speed and High-Resolution Analog Digital Converter for Shearwave Dispersion Ultrasound Vibrometry	Hou, Ling; Zheng, Yi; Yao, Aiping	4:00 PM	Ballroom
Leonard, Gerald	The Behavioral and Physiological Responses of Waterfall Climbing in Gobiid Fishes from Hawai'i	Schoenfuss, Heiko	3:50 PM	Voyageurs South
Lesteberg, Kelsey	Histological Examination of Sexual Differentiation in the Fathead Minnow	Schoenfuss, Heiko	2:00 PM	Ballroom
Lesteberg, Kelsey	Immunophenotyping of T-Cells in Type 1 Diabetic JAK3-Deficient Mice	Cetkovic-Cvrlje, Marina	2:00 PM	Ballroom

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Student Presenter	Project Title	Sponsor(s)	Time	Room
Lindenfelser, Kali	Speech-Language Pathologists' Diversity Focused Training and Resources	Whites, Margery	9:00 AM	Ballroom
Liu, Liangnan	An Introduction to Pulse Oximetry Using the dsPIC Controller	Zheng, Yi	4:00 PM	Ballroom
Liu, Xingcai	A Comparative Study of Faculty Evaluation in American and Chinese Universities: The Cases of St. Cloud State University and Hebei University of Technology	Silvestre, Gabriela	11:00 AM	Glacier North
Lohrman, Jessica	Characterization of Single Crystal Tetracene Derivatives	Lidberg, Russell; Neu, Donald	2:00 PM	Ballroom
Lordbock, Arthur	Where Do Moral Standards Come From?	Nuccetelli, Susana	5:00 PM	Voyageurs South
Lucas, Madeleine	An Investigation into Knowledge, Beliefs, and Behaviors of High School Students on Animals and Zoos	Simpson, Patricia	4:00 PM	Ballroom
Lucken, Natalie	Attitudes and Effectiveness of Social Host Policy	Zerbib, Sandrine	2:00 PM	Alumni
Ludwig, Peter	Hire Me!	Polacco, Alexander	2:00 PM	Ballroom
Madden, Dennis	A Comparison of Absolute and Relative Upper Body Power With Roller Ski-skating Performance	Bacharach, David	9:00 AM	Ballroom
Madden, Dennis	High Intensity Interval Training and 40km Time Trial Cycling	Bacharach, David	9:00 AM	Ballroom
Madhavaram, Sudhir Rao	A Study to Identify and Prioritize Employer Expectations for Graduate Program in Engineering Management	Shah, Hiral	2:20 PM	Voyageurs South
Majji, Poojitha	Cost Analysis of Cut to Length Blanks Process at Bobcat	Shah, Hiral	2:00 PM	Voyageurs South
Major, Katie	Physical Activity in Kandiyohi County	Lenz, Brenda; Hiemenz, Melinda; Warner, Susan	2:00 PM	Ballroom
Malchow, Bridgette	Integrating Women Into the Teaching of Early 20th Century America	Galler, Robert	8:40 AM	Glacier South
Malchow, Jason	Remote Home Control System	Yao, Aiping	4:00 PM	Ballroom
Mandell, Matthew	Surface Modification and Characterization of Stabilities of Aspirin	Sivaprakasam, Kannan	2:00 PM	Ballroom
Mann, Shaynna	Regulation of PGC1-beta	Olson, Brian	2:00 PM	Ballroom
Maraweera-Hewage, Vishakha	Effect of JAK3 Mutation on Insulitis Development in a Mouse Model of Autoimmune Type 1 Diabetes	Cetkovic-Cvrlje, Marina	2:00 PM	Ballroom
Markeson, John	Where Do Moral Standards Come From?	Nuccetelli, Susana	5:00 PM	Voyageurs South

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Student Presenter	Project Title	Sponsor(s)	Time	Room
Marketon, Kayla	Autism Spectrum Disorder and Comorbidities in Wright County	Lenz, Brenda; Hiemenz, Melinda; Morrison-Sandberg, Leslie	2:00 PM	Ballroom
Markgraf, Jessica	Cultural-Linguistic Diversity Trends in Speech-Language Pathologists' Caseloads	Whites, Margery	9:00 AM	Ballroom
Marmolejo Davis, Alvaro	The Impact of the College Environment on the Gay Identity Development of Male Undergraduate Students at SCSU	Imbra, Christine	11:40 AM	Glacier North
Martinez-Schuldt, Ricardo	SCSU Spring Student Survey	Zerbib, Sandrine; Robinson, David; Frank, Stephen; Wagner, Steven; Hammes, Michelle; Kulas, John	9:50 AM	Alumni
Martinez-Schuldt, Ricardo	SCSU Survey	Frank, Stephen	2:00 PM	Ballroom
Masterson, Kristen	Exit Strategies	Edrisinha, Chaturi	10:10 AM	Cascade
Matto, Saqib	Research Solar Furnace with Tracking Heliostat	Miller, Kenneth	8:00 AM	Voyageurs South
Matto, Saqib	Designing the Rack for Brackets at Bobcat	Shah, Hiral	11:20 AM	Voyageurs South
Mawilmada, Prasad	Diffusion Dynamics of Hydrogels	Sivaprakasam, Kannan	9:00 AM	Ballroom
Mawilmada, Prasad	Diffusion Dynamics of Hydrogels	Sivaprakasam, Kannan	12:00 PM	Voyageurs South
McClellan, Brianne	Integrating Women Into the Teaching of Early 20th Century America	Galler, Robert	8:40 AM	Glacier South
McDermeit, Alissa	Snatch and Run	Edrisinha, Chaturi	8:40 AM	Cascade
McDonald, Lori	Analysis of Permian Strata in the Summit Springs Anticline of the Central Butte Mountains in Nevada	Pekarek, Alfred	2:00 PM	Ballroom
McElwain, Eli	All-Terrain Robotic Device	Fedele, Juan; Petzold, Mark; Covey, Steven	9:00 AM	Ballroom
McKeever, Aubreanna	Visiting CentraCare	Kuznia, Jodi	5:00 PM	Alumni
McKinney, Dustin	CentraCare Service-Learning Project	Kuznia, Jodi	5:20 PM	Alumni
Mecum, Ashley	How to Give a Hoot: Integrated Species Conservation of the Great Horned Owl	Cook, William	5:20 PM	Voyageurs North
Meemaduma, Harith	Robotic Painting System	Thamvichai, Ratchaneekorn; Sezen, Ahmet; Hou, Ling	12:00 PM	Voyageurs North

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Student Presenter	Project Title	Sponsor(s)	Time	Room
Meemaduma, Harith	Robotic Painting System	Thamvichai, Ratchaneekorn; Sezen, Ahmet; Hou, Ling	4:00 PM	Ballroom
Meemken, Kelly	Solar Powered Pontoon Boat	Glazos, Michael	9:00 AM	Ballroom
Mehta, Yash	A Study to Identify and Prioritize Employer Expectations for Graduate Program in Engineering Management	Shah, Hiral	2:20 PM	Voyageurs South
Metzger, Nathan	Regulation of PGC1-beta	Olson, Brian	2:00 PM	Ballroom
Meyer, Danielle	Endocrine Disruptors and Waste Water Treatment Plants in the Chicago Area	Schoenfuss, Heiko	9:00 AM	Ballroom
Meyer, Danielle	Research in Metacognition	Bodvarsson, Mary	9:00 AM	Ballroom
Miller, Jeffrey	Abiotic Influences On Estrogenic Biomarker Expression In Riverine Conditions Of Exposure To Treated Wastewater	Schoenfuss, Heiko	8:20 AM	Voyageurs South
Mills, Serah	Induction of Toxoplasma Gondii Cell Cycle Fusion Proteins	Kvaal, Christopher	4:00 PM	Ballroom
Moberly, Lance	Snatch and Run	Edrisinha, Chaturi	8:40 AM	Cascade
Mooney, Aaron	MME Senior Design FSAE Car	Miller, Kenneth	10:30 AM	Voyaguers South
Moser, Adam	Adjustable Shear Die	Bekkala, Andrew	5:40 PM	Voyageurs North
Mubvumbi, Tinashe	Computer Forensics	Schmidt, Mark	4:30 PM	Glacier South
Mubvumbi, Tinashe	Electronic Voting	Herath, Susantha	5:00 PM	Glacier South
Mueller, Brenda	Crosswalk Experiment	Edrisinha, Chaturi	12:00 PM	Glacier South
Munson, Gabriel	CentraCare Service-Learning Project	Kuznia, Jodi	5:20 PM	Alumni
Munsterman, Laura	Genetically Modified Crops	Simpson, Patricia	4:00 PM	Ballroom
Muschler, Robert	Management of Household Waste in Ghana	Ugochukwu, Chukwunyere	11:00 AM	Alumni
Najmee, Taha	Smart Grid System	Hossain, Md	9:00 AM	Ballroom
Nash, Julie	Stadium Analysis, Comparing Domes to Outdoor Stadiums	MacDonald, Lynn	11:20 AM	Granite
Nelson, Briegette	Inhibition of Planarian Paroxysms by Riluzole	Ramakrishnan, Latha	2:00 PM	Ballroom
Nelson, Sean	The Effects of Implicit Theory Activation and Stereotype Threat Activation on Gender Differences in Mathematical Performance	Buswell, Brenda	4:00 PM	Ballroom
Nelson, Sean	Where Do Moral Standards Come From?	Nuccetelli, Susana	5:00 PM	Voyageurs South
Nesterenco, Tatiana	Analyzing Walkability Crossability of Downtown Neigborhoods	Woldeamanuel, Mintesnot	2:00 PM	Ballroom
Neugebauer, Andrea	A Community Assessment Regarding Home Visits by Public Health Nurses	Lenz, Brenda; Hiemenz, Melinda	2:00 PM	Ballroom

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Student Presenter	Project Title	Sponsor(s)	Time	Room
Nickolauson, Meghan	Resistance	Freilinger, Rebecca; Zuo, Jiping	9:50 AM	Glacier South
Nieland, Nicole	Investigating the Biosynthetic Pathways of Cysteine and Methionine in Planctomyces Limnophilus	Kvaal, Christopher	9:00 AM	Ballroom
Nietz, Luke	Energy Consumption	Hughes, Patricia	12:00 PM	Granite
Nogosek, Chad	Electonic Display Board	Hossain, Md	9:00 AM	Ballroom
Norman, Jennifer	Identifying the Effects of Tree Throw on Soil Stratigraphy at the Wendt Site	Muniz, Mark	10:30 AM	Glacier South
Notch, Patrick	All-Terrain Robotic Device	Fedele, Juan; Petzold, Mark; Covey, Steven	9:00 AM	Ballroom
O'Brien, Hugh	Analyzing Factors Affecting the Auto Ownership of American Households Using NHTS.	Woldeamanuel, Mintesnot	2:00 PM	Ballroom
Ochs, Megan	Autism Spectrum Disorder and Comorbidities in Wright County	Lenz, Brenda; Hiemenz, Melinda; Morrison-Sandberg, Leslie	2:00 PM	Ballroom
Ohrt, Alix	Effects of Currency Unions On International Trade	Switzer, David	3:50 PM	Granite
Olinger, Britta	Stearns County Chlamydia Report	Lenz, Brenda; Henry, Vonna; Hiemenz, Melinda	2:00 PM	Ballroom
Olsen, Cassandra	Hire Me!	Polacco, Alexander	2:00 PM	Ballroom
Olson, Dustin	Precambrian Influence on the Topography of West-Central Minnesota	Pound, Katherine	4:00 PM	Ballroom
Olson, Stepfanee	Safety Awareness on Campus: Looking at the 2011 Student Survey	Zerbib, Sandrine	2:40 PM	Alumni
Olund, Colton	An Analysis of the Level of Service for Multi-modal Transportation Systems on the SCSU Campus	Woldeamanuel, Mintesnot	2:00 PM	Ballroom
Omann, Johnathon	Service Learning at Centracare MN	Kuznia, Jodi	5:40 PM	Alumni
Omanwa, Valentine	Autism Spectrum Disorder and Comorbidities in Wright County	Lenz, Brenda; Hiemenz, Melinda; Morrison-Sandberg, Leslie	2:00 PM	Ballroom
Omare, Jeniffer	A Community Assessment Regarding Home Visits by Public Health Nurses	Lenz, Brenda; Hiemenz, Melinda	2:00 PM	Ballroom
Omot, Obuuy	Management of Household Waste in Ghana	Ugochukwu, Chukwunyere	11:00 AM	Alumni
Omot, Obuuy	An Analysis of the Level of Service for Multi-modal Transportation Systems on the SCSU Campus	Woldeamanuel, Mintesnot	2:00 PM	Ballroom

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Student Presenter	Project Title	Sponsor(s)	Time	Room
O'Neil, Ashley	Regulation of PGC1-beta	Olson, Brian	2:00 PM	Ballroom
Othoudt, Aaron	Analyzing Factors Affecting the Auto Ownership of American Households Using NHTS.	Woldeamanuel, Mintesnot	2:00 PM	Ballroom
Othoudt, Aaron	Energy Efficent Home Options	Ugochukwu, Chukwunyere	2:00 PM	Ballroom
Otteson, Spencer	Renewable Energies	Simpson, Patricia	2:00 PM	Ballroom
Owens, Daniel	CAN Data Logger	Glazos, Michael	4:00 PM	Ballroom
Owusu, Eric	Computer Forensics	Schmidt, Mark	4:30 PM	Glacier South
Oyedele, Kazeem	Investigating the Inhibition of Bacterial Growth by Potassium Sorbate and Sodium Benzoate	Schrank, Gordon	9:00 AM	Ballroom
Packer, Hilary	Bike Theft Experiment	Edrisinha, Chaturi	9:00 AM	Cascade
Palmquist, Jennifer	A Community Assessment Regarding Home Visits by Public Health Nurses	Lenz, Brenda; Hiemenz, Melinda	2:00 PM	Ballroom
Pedersen, Carin	Deforestation	Simpson, Patricia	2:00 PM	Ballroom
Pedersen, Melissa	Physical Activity in Kandiyohi County	Lenz, Brenda; Hiemenz, Melinda; Warner, Susan	2:00 PM	Ballroom
Peiris, Yoshan	Cooling Fan Braking System	Zhao, Yongli	8:40 AM	Voyageurs South
Perry, Alissa	Speech-Language Pathologists' Perceptions and Understanding of Cultural-Linguistic Diversity	Whites, Margery	9:00 AM	Ballroom
Petersen, Andrea	Physical Activity in Kandiyohi County	Lenz, Brenda; Hiemenz, Melinda; Warner, Susan	2:00 PM	Ballroom
Peterson, Abbie	Hazardous Texting	Edrisinha, Chaturi	11:00 AM	Glacier South
Peterson, Nickolas	Understanding the Society We Live In and the Causes of Poverty	Freilinger, Rebecca; Zuo, Jiping	4:00 PM	Ballroom
Peterson, Ryan	Perceptions of Safety on Campus	Zerbib, Sandrine	2:20 PM	Alumni
Peterson, Yusan	Application of Information Technology Support System to Develop Automated Reports at Earthmoving Equipment Manufacturing Company	Shah, Hiral	10:10 AM	Voyaguers South
Peyton, Stefanie	Bike Theft Experiment	Edrisinha, Chaturi	9:00 AM	Cascade
Pham, Nguyen	Preferential Policies for Education: The Reality of Its Implementation and Impacts on Disadvantaged High School and University Students in An Giang Province	Silvestre, Gabriela	2:20 PM	Glacier North
Phelps, John	'PCmode: A Robust Modem for High Frequency Ionospheric Communications'	Harlander, John	9:00 AM	Ballroom

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Student Presenter	Project Title	Sponsor(s)	Time	Room
Phillips, Shaun	The Role of Social Capital at the Winter Farmers' Market in the Lives and Livelihoods of Farmers	Finan, Ann-Marie	9:00 AM	Glacier North
Pickar, Michael	The Wedge of Symbolic Disruption: Negating the Sexual Either/Or	Philion, Stephen	3:00 PM	Voyageurs North
Pickens, Melissa	Attitudes and Effectiveness of Social Host Policy	Zerbib, Sandrine	2:00 PM	Alumni
Pietsch, Kayla	Students' Perception of Campus Safety at SCSU	Zerbib, Sandrine	3:00 PM	Alumni
Pikus, Brendon	Bulk Viscosity and Expansion of Hot Nuclear Fluid	Haglin, Kevin	4:00 PM	Ballroom
Pinson, James	Effects of Extra-Stimulus Prompts to Promote Respectful Computer Usage at SCSU	Edrisinha, Chaturi	2:20 PM	Granite
Pitzl, Hayley	The Connection Between Domestic Violence and Animal Cruelty	Zuo, Jiping	4:00 PM	Ballroom
Plachecki, Matthew	The Impact of the College Environment on the Gay Identity Development of Male Undergraduate Students at SCSU	Imbra, Christine	11:40 AM	Glacier North
Poganski, Beth	Are All Lake Habitats Equal? Effects of Endocrine Compounds From Non-point Sources on Sunfish	Schoenfuss, Heiko	8:00 AM	Cascade
Post, Hannah	Technology in Technology Education	Olson, Curtis	3:30 PM	Granite
Pradhan, Mandeep	I Know What You Did, Your Hard Drive Told Me	Schmidt, Mark	3:30 PM	Glacier South
Pratt Blenker, Julie	Affordable Senior Housing	Ugochukwu, Chukwunyere	11:20 AM	Alumni
Pratt Blenker, Julie	Analyzing Walkability Crossability of Downtown Neigborhoods	Woldeamanuel, Mintesnot	2:00 PM	Ballroom
Pratt, Kevin	Groundwater Contamination in Stearns County	Wixon, Lewis	9:00 AM	Ballroom
Prellwitz, Katherine	Where Do Moral Standards Come From?	Nuccetelli, Susana	5:00 PM	Voyageurs South
Primus, Kelsi	Cultural-Linguistic Diversity Trends in Speech-Language Pathologists' Caseloads	Whites, Margery	9:00 AM	Ballroom
Rai, Rashmi	Computer Forensics	Schmidt, Mark	4:30 PM	Glacier South
Ramirez, Juan	Cooling Fan Braking System	Zhao, Yongli	8:40 AM	Voyageurs South
Rannow, Caleb	Where Do Moral Standards Come From?	Nuccetelli, Susana	5:00 PM	Voyageurs South
Rassier, Sierra	SCSU Where is the Love?	Edrisinha, Chaturi	11:40 AM	Glacier South
Rauer, Reagan	Crosswalk Experiment	Edrisinha, Chaturi	12:00 PM	Glacier South
Rausch, Samantha	Cardiovascular Risk in Clients Age 30-64: Concepcion, Chile	Lenz, Brenda; Hiemenz, Melinda	2:00 PM	Ballroom
Ravn, Kelle	MME Senior Design FSAE Car	Miller, Kenneth	10:30 AM	Voyaguers South
Ray, Jonathan	Computer/Digital Forensics	Schmidt, Mark	11:00 AM	Oak
Read, Jeremy	Product Testing for Microbiocidal Activity	Gulrud, Kristin	2:00 PM	Ballroom
Reichert, Senn	Speech-Language Pathologists' Perceptions and Understanding of Cultural-Linguistic Diversity	Whites, Margery	9:00 AM	Ballroom

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Student Presenter	Project Title	Sponsor(s)	Time	Room
Revier, Kevin	Surviving with Spirituality	Philion, Stephen	8:40 AM	Glacier North
Rhodes, Mark	The Ease of Cycling Around St. Cloud State University: A political and cultural geographic examination of spatial movement	John, Gareth	11:00 AM	Voyageurs North
Rijal, Shristi	Omni Directional Vehicle with Obstacle Avoidance and GPS Tracker	Thamvichai, Ratchaneekorn	4:00 PM	Ballroom
Ripka, Casey	CentraCare Volunteer Project	Kuznia, Jodi	6:00 PM	Alumni
Robinson, Melvin	Visiting CentraCare	Kuznia, Jodi	5:00 PM	Alumni
Robison, Rhea	Hire Me!	Polacco, Alexander	2:00 PM	Ballroom
Rodriguez, Mario	Does Symmetry Equal Beauty?	Valdes, Leslie	2:00 PM	Ballroom
Roering, Christine	Visiting CentraCare	Kuznia, Jodi	5:00 PM	Alumni
Rogers, Carrollyn	An Investigation of the Knowledge, Behaviors, and Beliefs of 10th Grade Biology Students on the Effects of Drilling for Oil in ANWR	Simpson, Patricia	2:00 PM	Ballroom
Rogers, Dustin	Decrypting Password Protected Data For Use in Digital Forensics	Schmidt, Mark	2:40 PM	Glacier South
Rose, Bradley	Effect of Galantimine on FAM Beta-amyloid (1-42) Aggregation: Investigations Using Spectrofluorimetry and Atomic Force Microscopy	Ramakrishnan, Latha	4:00 PM	Ballroom
Rosenthal, Jeffrey	Using Petrologic Techniques to Determine the Composition and Economic Potential of a Carbonate-Dominated Breccia from the Rio Grande Rift in Central New Mexico	Pekarek, Alfred	4:00 PM	Ballroom
Rosier, Jessica	Geocaching as a Learning Tool in Minnesota's State Parks	Yu, Hung-Chih	11:40 AM	Cascade
Rostomily, Katherine	Affordable Senior Housing	Ugochukwu, Chukwunyere	11:20 AM	Alumni
Rovanpera, Jennifer	Using Charcoal to Date the Lillian Joyce Archaeological Site	Muniz, Mark	2:40 PM	Voyageurs North
Ruegemer, Kayla	Hazardous Texting	Edrisinha, Chaturi	11:00 AM	Glacier South
Ruhland, Gail	Past, Present, Future: Times of Change for Continuing Education	Silvestre, Gabriela	2:00 PM	Glacier North
Rumpca, Justin	Autonomous Tracking Security System	Petzold, Mark	9:00 AM	Ballroom
Ryan, Christine	The Movements of Small Mammals in an Experimentally Fragmented Landscape	Cook, William	2:00 PM	Ballroom
Sainju, Anish	Electonic Display Board	Hossain, Md	9:00 AM	Ballroom
Sajid, Noureen	High Speed Circuit Design and Simulation	Zheng, Yi	4:00 PM	Ballroom
Sall, Genessa	Left Motor Cortex Interference in Relation to Cell Phone Use and Driving	Widner, Robert	9:00 AM	Ballroom

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Student Presenter	Project Title	Sponsor(s)	Time	Room
Sambuu, Badral	Environmental Monitoring Device (EMD)	Thamvichai, Ratchaneekorn	4:00 PM	Ballroom
Sandeen, Taren	Snatch and Run	Edrisinha, Chaturi	8:40 AM	Cascade
Sapletal, Elisha	Physical Activity in Kandiyohi County	Lenz, Brenda; Hiemenz, Melinda; Warner, Susan	2:00 PM	Ballroom
Sather, Lindsey	The Connection Between Domestic Violence and Animal Cruelty	Zuo, Jiping	4:00 PM	Ballroom
Savage, Abby	Bike Theft Experiment	Edrisinha, Chaturi	9:00 AM	Cascade
Savolainen, Rachel	Perceptions of Safety on Campus	Zerbib, Sandrine	2:20 PM	Alumni
Sayers, June	Sedimentary Lake Cores from Swamp Lake in Central Minnesota to Show Effects of Lake Level on Wild Rice	Fedele, Juan	9:00 AM	Ballroom
Schirmacher, Adam	Robotic Painting System	Thamvichai, Ratchaneekorn; Sezen, Ahmet; Hou, Ling	12:00 PM	Voyageurs North
Schirmacher, Adam	Robotic Painting System	Thamvichai, Ratchaneekorn; Sezen, Ahmet; Hou, Ling	4:00 PM	Ballroom
Schmidt, Rebecca	Mental Imagery and Pitching for SCSU Baseball	Edrisinha, Chaturi	12:20 PM	Glacier South
Schneider, Brent	Expression of Toxoplasma Gondii Cell Cycle Proteins	Kvaal, Christopher	11:00 AM	Cascade
Schoepf, Jennifer	Effect of Signs of Safety on Child Protection Workers	Pfohl, Mary	2:00 PM	Ballroom
Schroeder, Curt	Incentive to Win in NFL	MacDonald, Lynn	10:10 AM	Granite
Schubert, Nicholas	Microgrid	Hossain, Md	4:00 PM	Ballroom
Schulzetenberg, Aaron	Lateral Field Time-of-Flight for Determination of Surface Charge Carrier Mobility	Lidberg, Russell	2:00 PM	Ballroom
Schweiss, Maria	SCSU Spring Student Survey	Zerbib, Sandrine; Robinson, David; Frank, Stephen; Wagner, Steven; Hammes, Michelle; Kulas, John	9:50 AM	Alumni
Selchow, Tracy	State Unemployment	MacDonald, Lynn	11:40 AM	Granite
Sexton, Brian	Effects of Extra-Stimulus Prompts to Promote Respectful Computer Usage at SCSU	Edrisinha, Chaturi	2:20 PM	Granite
Shah, Anil	Smart Grid System	Hossain, Md	9:00 AM	Ballroom
Shepard, Troy	Attitudes and Effectiveness of Social Host Policy	Zerbib, Sandrine	2:00 PM	Alumni

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Student Presenter	Project Title	Sponsor(s)	Time	Room
Sherman, Sonny	SCSU Spring Student Survey	Zerbib, Sandrine; Robinson, David; Frank, Stephen; Wagner, Steven; Hammes, Michelle; Kulas, John	9:50 AM	Alumni
Shir, Hannah	Autism Spectrum Disorder and Comorbidities in Wright County	Lenz, Brenda; Hiemenz, Melinda; Morrison-Sandberg, Leslie	2:00 PM	Ballroom
Shrestha, Benam	Design and Build of Small Battery Operated Scooter for Large Pipe Inspection	Zhao, Yongli	9:30 AM	Voyaguers South
Shrestha, Raju	Comparison of Factors Affecting Retention of DGS and Non-DGS Students at SCSU	Robinson, David	4:00 PM	Ballroom
Shrestha, Ritesh	MME Senior Design FSAE Car	Miller, Kenneth	10:30 AM	Voyaguers South
Shrestha, Rupak	Feminist Legacy in Geography: Case Study in the Role of Female Geographers in the History of St. Cloud State University Since Its Establishment as Third State Normal School in 1869	Wixon, Lewis; John, Gareth	2:00 PM	Glacier South
Shrestha, Samridh	Omni Directional Vehicle with Obstacle Avoidance and GPS Tracker	Thamvichai, Ratchaneekorn	4:00 PM	Ballroom
Shrestha, Shiva	Study of the Interaction of Ruthenium Benzimidazole Metal Complexes With DNA by Atomic Force Microscope (AFM)	Sreerama, Lakshmaiah	2:00 PM	Ballroom
Siewert, Breann	Speech-Language Pathologists' Diversity Focused Training and Resources	Whites, Margery	9:00 AM	Ballroom
Simon, Ashley	Physical Activity in Kandiyohi County	Lenz, Brenda; Hiemenz, Melinda; Warner, Susan	2:00 PM	Ballroom
Skaja, Tracy	Physical Activity in Kandiyohi County	Lenz, Brenda; Hiemenz, Melinda; Warner, Susan	2:00 PM	Ballroom
Skogerboe, Inna	'Glass Prison: A Compositional Approach' a View of Electronic Music from a Compositional Aspect	Twombly, Kristian	12:55 PM	Ruth Gant Recital Hall, Rm 230, Performing Arts Center
Slah, Gregory	Closing the Achievement Gap	Widner, Robert	12:00 PM	Glacier North
Smith, John	Race Matters	Hughes, Patricia	3:50 PM	Glacier North
Smith, Kathryn	Safety Awareness on Campus: Looking at the 2011 Student Survey	Zerbib, Sandrine	2:40 PM	Alumni
Smith, Michelle	Safety Awareness on Campus: Looking at the 2011 Student Survey	Zerbib, Sandrine	2:40 PM	Alumni

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Student Presenter	Project Title	Sponsor(s)	Time	Room
Snell, Derick	Mental Imagery and Pitching for SCSU Baseball	Edrisinha, Chaturi	12:20 PM	Glacier South
Souna, Amanda	Environmental Literacy and Beliefs about Environmental Education in High School Chemistry Teachers in Minnesota	Krystyniak, Rebecca	4:00 PM	Ballroom
Stacey, Kristen	Globalization: Sri Lanka and South Korea	Butenhoff, Linda	4:00 PM	Ballroom
Stahlback, Dustin	An Introduction to Pulse Oximetry Using the dsPIC Controller	Zheng, Yi	4:00 PM	Ballroom
Stalker, Sarah	Public Perceptions of the 10 May 2010 Oklahoma and the 17 June 2010 Minnesota Tornado Outbreaks	Hansen, Anthony	11:40 AM	Voyageurs South
Stanton, Dexter	A Song For You	Edrisinha, Chaturi	2:00 PM	Granite
Stay, Karen	Community Outreach: the Health Fair Experience at SCSU	Antunez, Hector	9:00 AM	Ballroom
Stein, Amanda	Bike Theft Experiment	Edrisinha, Chaturi	9:00 AM	Cascade
Stensland, Hannah	Autism Spectrum Disorder and Comorbidities in Wright County	Lenz, Brenda; Hiemenz, Melinda; Morrison-Sandberg, Leslie	2:00 PM	Ballroom
Stevenson, Tiara	Effects of Extra-Stimulus Prompts to Promote Respectful Computer Usage at SCSU	Edrisinha, Chaturi	2:20 PM	Granite
Stewart, Cornelius	CentraCare Volunteer Project	Kuznia, Jodi	6:00 PM	Alumni
Sthapit, Sagun	I Know What You Did, Your Hard Drive Told Me	Schmidt, Mark	3:30 PM	Glacier South
Street, Michael	A Census of the Subatomic Population (At a Trillion Degrees)	Haglin, Kevin	4:00 PM	Ballroom
Stumvoll, Tanner	Electonic Display Board	Hossain, Md	9:00 AM	Ballroom
Suess, Channa	Hazardous Texting	Edrisinha, Chaturi	11:00 AM	Glacier South
Sullivan, Jacob	CentraCare Service-Learning Project	Kuznia, Jodi	5:20 PM	Alumni
Sundberg, Lawrence	Digital Forensics in the Real World: How They Busted the Most Notorious Cyber Criminal of Our Time	Schmidt, Mark	3:50 PM	Glacier South
Suski, Alison	Women Artists and Models: Each End of an Artwork	Newman, Emily	4:10 PM	Voyageurs North
Svare, Nathan	How Masculinity Works to Oppress Men as Defined by Iris Marion Young's Five Faces of Oppression	Berila, Elizabeth	8:00 AM	Glacier South
Svare, Nathan	Theory of Men's Groups and Movements	Berila, Elizabeth	8:20 AM	Glacier South
Svare, Nathan	Men's Groups and Movements Research Methods Paper	Zuo, Jiping	2:00 PM	Voyageurs North
Svare, Nathan	Methods Research	Zuo, Jiping	2:20 PM	Voyageurs North

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Student Presenter	Project Title	Sponsor(s)	Time	Room
Sytsma, Cole	CAN Data Logger	Glazos, Michael	4:00 PM	Ballroom
Tabbert, Jacob	An Investigation of Use of Real-World Examples by High School Chemistry Teachers	Krystyniak, Rebecca	9:00 AM	Ballroom
Tandon, Nikita	Impact of Information Technologies on Relational Communication in the Workplace	Eyo, Bassey	11:40 AM	Alumni
Tchouetckea Tankoua, Romeo Blaise	Remote Home Control System	Yao, Aiping	4:00 PM	Ballroom
Tesfaye, Menna	Computer Forensics	Schmidt, Mark	4:30 PM	Glacier South
Tham, Jason	The Usage and Implication of Social Networking Sites: A Survey of College Students	Ahmed, Niaz	10:30 AM	Cascade
Thapa, Meen	Histidine Metabolism in Plantomyces Limnophilus DSM 3776	Kvaal, Christopher	9:00 AM	Ballroom
Thapa, Milan	Design and Build of Small Battery Operated Scooter for Large Pipe Inspection	Zhao, Yongli	9:30 AM	Voyaguers South
Thaung, Kyaw	Computer Forensic Investigation	Schmidt, Mark	3:00 PM	Glacier South
Theisen, Eric	Physical Activity in Kandiyohi County	Lenz, Brenda; Hiemenz, Melinda; Warner, Susan	2:00 PM	Ballroom
Thibodeau-Schuldt, Megan	Leaving Home: An Analytical Discussion on Immigration	Zerbib, Sandrine	9:30 AM	Alumni
Thibodeau-Schuldt, Megan	SCSU Spring Student Survey	Zerbib, Sandrine; Robinson, David; Frank, Stephen; Wagner, Steven; Hammes, Michelle; Kulas, John	9:50 AM	Alumni
Thompson, Nicholas	MME Senior Design FSAE Car	Miller, Kenneth	10:30 AM	Voyaguers South
Thorstensen, Andrea	Influence of Soil Type on Dry Down Patterns of the North Fork of the American River Basin	Fedele, Juan	2:00 PM	Ballroom
Tran, Melissa	Induction of Toxoplasma Gondii Cell Cycle Fusion Proteins	Kvaal, Christopher	4:00 PM	Ballroom
Trosen, Lisa	The Connection Between Domestic Violence and Animal Cruelty	Zuo, Jiping	4:00 PM	Ballroom
Tschida, Jason	Design of an Automated Positioning System	Sezen, Ahmet	4:00 PM	Ballroom
Tuladhar, Aayush	RFID Shopping System	Hossain, Md	4:00 PM	Ballroom
Ullah, ASM	Implementing Lean Principle in Manufacturing Environment to Increase Productivity	Shah, Hiral	3:00 PM	Voyageurs South
Ullah, ASM	A Practical Approach to Computer Forensic Investigation	Schmidt, Mark	4:10 PM	Glacier South

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Student Presenter	Project Title	Sponsor(s)	Time	Room
Vaidya, Ayushma	Wireless Vital Sign Monitoring System	Hossain, Md; Yao, Aiping; Meichsner, Jie	4:00 PM	Ballroom
Van Den Einde, Jessica	Speech-Language Pathologists' Diversity Focused Training and Resources	Whites, Margery	9:00 AM	Ballroom
Van Slyke, Jenna	Examining the Relationship Between Internalized Homonegativity and Treatment Outcomes in LGBT-specific Addiction Treatment	Livingston, Tina	9:00 AM	Ballroom
Vanam, Sharath Chandra	Designing the Rack for Brackets at Bobcat	Shah, Hiral	11:20 AM	Voyageurs South
VanBruggen, Andrew	Immunophenotyping of T-Cells in Type 1 Diabetic JAK3-Deficient Mice	Cetkovic-Cvrlje, Marina	2:00 PM	Ballroom
Vandenberghe, Amber	Speech-Language Pathologists' Diversity Focused Training and Resources	Whites, Margery	9:00 AM	Ballroom
Vang, Tou	Microgrid	Hossain, Md	4:00 PM	Ballroom
Veeramani, Viloshanakumaran	Does Symmetry Equal Beauty?	Valdes, Leslie	2:00 PM	Ballroom
Viestenz, Robin	Investigation of Sauk River Water and Sediment Quality	Bender, Michner	9:00 AM	Ballroom
Voegele, Alan	Immunophenotyping of T-Cells in Type 1 Diabetic JAK3-Deficient Mice	Cetkovic-Cvrlje, Marina	2:00 PM	Ballroom
Vondal, Edward	Two Halves of Modern Capitalism: Haves and Have-Nots	Freilinger, Rebecca	10:10 AM	Glacier South
Vondal, Edward	Attitudes and Effectiveness of Social Host Policy	Zerbib, Sandrine	2:00 PM	Alumni
Waddell, Abby	Expert/Novice Study of Percent Yield	Krystyniak, Rebecca	9:00 AM	Ballroom
Warling-Spiegel, Ashley	Use of Stimulus Fading to Teach Generalization of Expressive Responding to Noun Sub-categories	Edrisinha, Chaturi	12:40 PM	Glacier South
Warren, Leah	Autism Spectrum Disorder and Comorbidities in Wright County	Lenz, Brenda; Hiemenz, Melinda; Morrison-Sandberg, Leslie	2:00 PM	Ballroom
Wassermann, Lisa	CentraCare Service-Learning Project	Kuznia, Jodi	5:20 PM	Alumni
Wauna, Namukulwa	Effect of Galantimine on FAM Beta-amyloid (1-42) Aggregation: Investigations Using Spectrofluorimetry and Atomic Force Microscopy	Ramakrishnan, Latha	4:00 PM	Ballroom
Weber, Amanda	Stroop Effect And Cueing	Valdes, Leslie	2:00 PM	Ballroom
Wegwerth, Sarah	Synthesis of a Novel Goniothalamin Analogue Designed to Deplete Intracellular GSH	Mechelke, Mark	2:00 PM	Ballroom
Werner, Peter	Students' Perception of Campus Safety at SCSU	Zerbib, Sandrine	3:00 PM	Alumni
Williams, Amber	Got Gym Germs?	Edrisinha, Chaturi	11:20 AM	Glacier South

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Student Presenter	Project Title	Sponsor(s)	Time	Room
Williams, Jennifer	Histidine Metabolism in Plantomyces Limnophilus DSM 3776	Kvaal, Christopher	9:00 AM	Ballroom
Williams, Jennifer	Monoclonal Screening for Salmonella Potency Assay Development	Cetkovic-Cvrlje, Marina	9:00 AM	Ballroom
Wilson, Michael	Effects of Household Debt on Household Durable Goods Consumption	Hughes, Patricia	3:30 PM	Glacier North
Winch, Joseph	Parking System Analysis: Improving St. Cloud's Downtown Infrastructure	Heiman, James	3:30 PM	Voyageurs North
Witt, Taylor	Predicting the Number of Inmates in Stearns County Jail	Robinson, David; Xu, Hui	2:20 PM	Oak
Workman, Michael	Using AFM to Track Changes in Surface Topography	Petitto, Sarah	2:00 PM	Ballroom
Wright, Eric	A Comparison of Absolute and Relative Upper Body Power With Roller Ski-skating Performance	Bacharach, David	9:00 AM	Ballroom
Yong, Shun Jie	Persistence of Vision Display and Uniform Circular Motion Demonstration	Liu, Zengqiang	2:00 PM	Ballroom
Youngers, Matthew	Design of an Automated Positioning System	Sezen, Ahmet	4:00 PM	Ballroom
Yuan, Cheng	Capacity Improvement of the Paint Line System at Bobcat	Shah, Hiral	9:50 AM	Voyaguers South
Yuan, Cheng	Hire Me!	Polacco, Alexander	2:00 PM	Ballroom
Yusuf, Dirie	Closing the Achievement Gap	Widner, Robert	12:00 PM	Glacier North
Zamfir, Alina	Students' Perception of Campus Safety at SCSU	Zerbib, Sandrine	3:00 PM	Alumni
Zhang, Wei	Crosswalk Experiment	Edrisinha, Chaturi	12:00 PM	Glacier South
Zhu, Chen	Comparison of Factors Affecting Retention of DGS and Non-DGS Students at SCSU	Robinson, David	4:00 PM	Ballroom
Zuluaga, Juan	A Comparison of Methods to Model Similarity Among Categorical Sequences	Xu, Hui	2:40 PM	Oak

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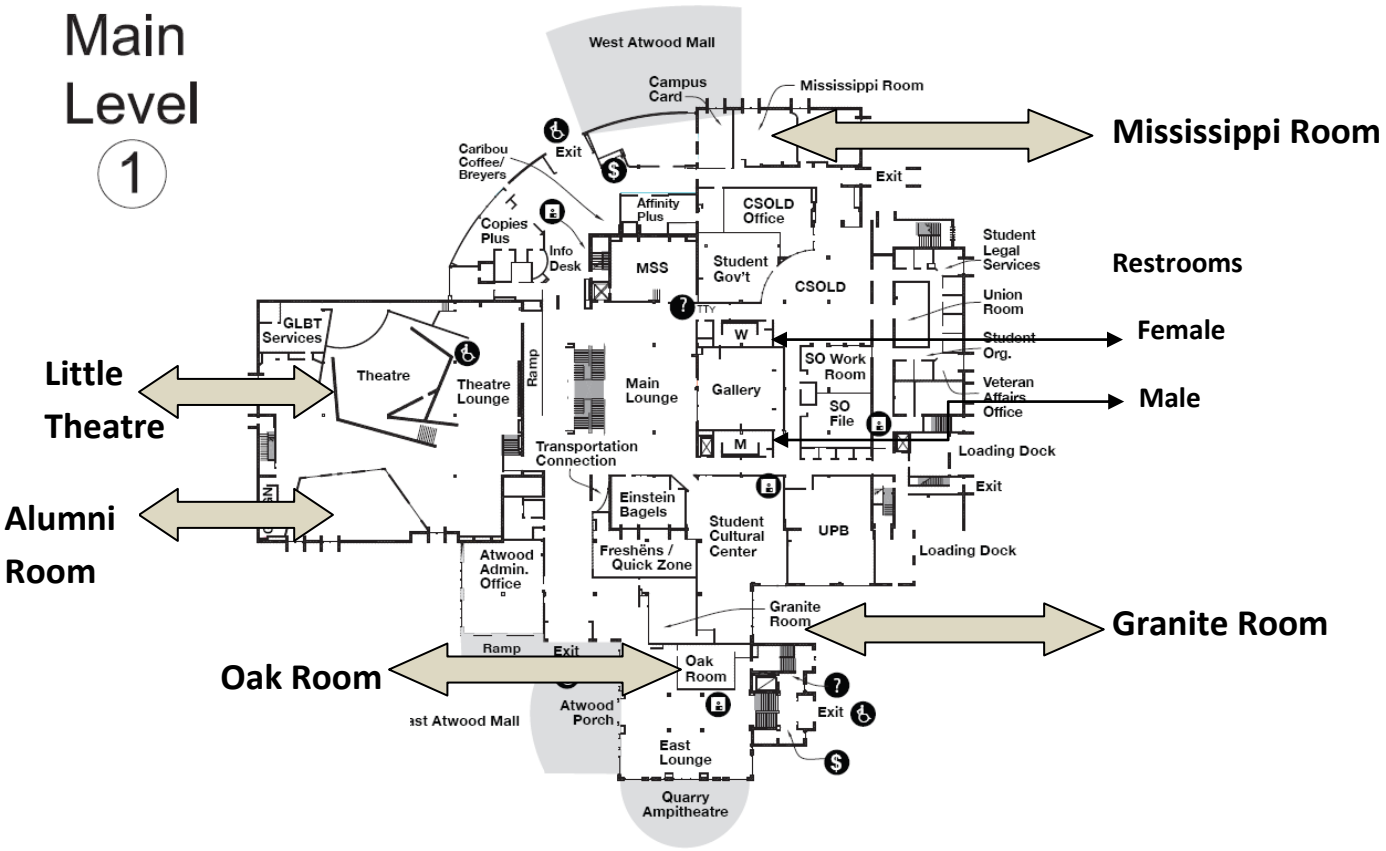
- Michner Bender, Associate Professor, Environmental and Technological Studies
- Janis Cimperman, Associate Professor, Mathematics
- Rachael Jahr, Graduate Assistant, Office of Sponsored Programs
- Elena Kurinski, Assistant Professor, Foreign Languages and Literature
- Betty Lommel, Office and Administrative Specialist, Biological Sciences
- Renee Dingmann, Office Manager, Equity and Affirmative Action Office
- Kristi Tornquist, Dean, Learning Resources and Technology Services
- Carolyn Ruth A. Williams, Associate Dean, Multicultural Affairs and STEM Initiatives

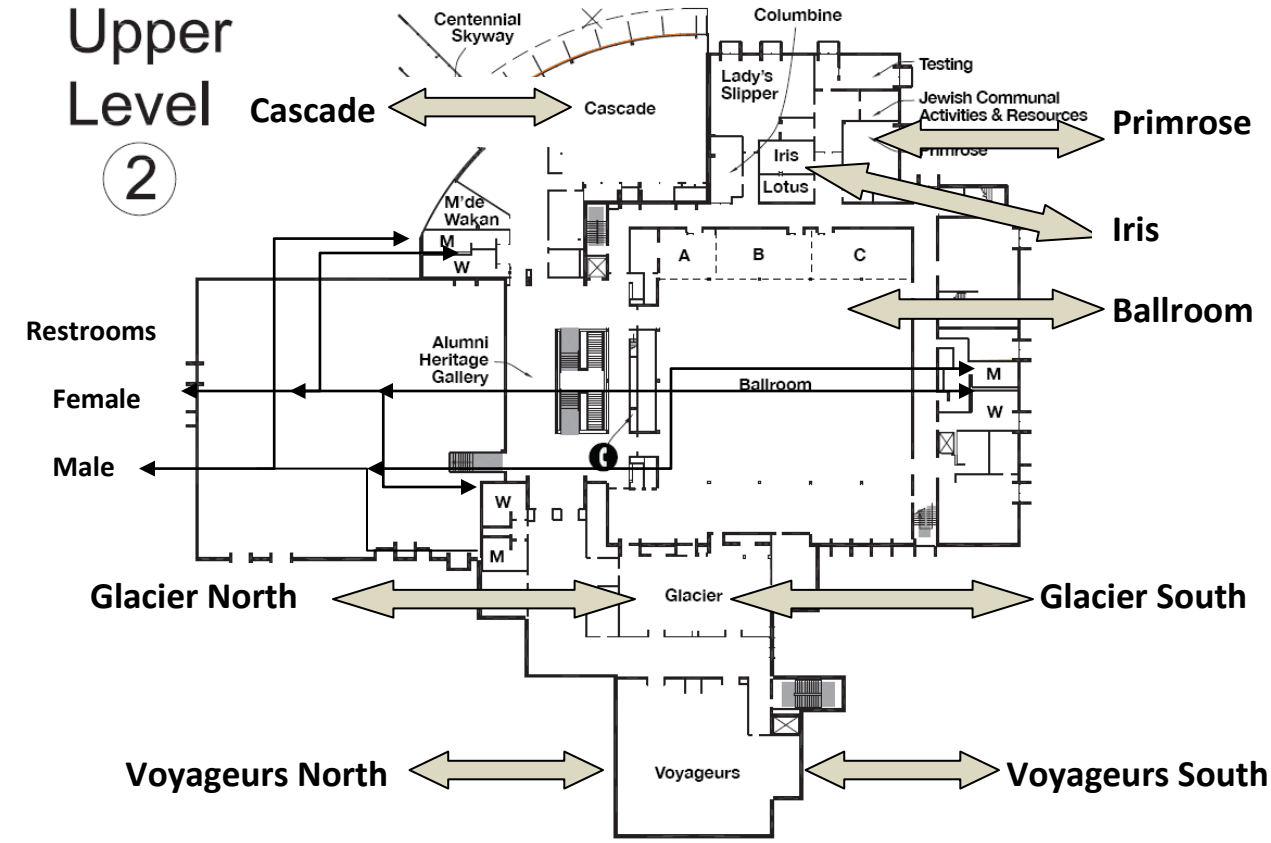
Names are included based on the information available as of the publishing date. We regret any omissions.

NOTES

If you wish to support the Student Research Colloquium, donations can be submitted to the St. Cloud State Foundation Account #27602, Alumni and Foundation Center, 720 Fourth Avenue South, St. Cloud, MN 56301-4498.

Floor Plan for Atwood Memorial Center





The event is partially funded by
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