4-21-2009

Student Research Colloquium Proceedings 2009

St. Cloud State University

Student Research COLLOQUIUM

PROCEEDINGS

TUESDAY, APRIL 21, 2009

ATWOOD MEMORIAL CENTER

8 a.m. to 8 p.m.

A MEMBER OF THE MINNESOTA STATE COLLEGES AND UNIVERSITIES SYSTEM

2009

ST. CLOUD STATE UNIVERSITY

12th Annual Student Research Colloquium

April 21, 2009

KEYNOTE ADDRESS – CASCADE ROOM

12:30 – 12:45 p.m. Keynote Speaker

Dr. Sean Garrick, Associate Professor
Department of Mechanical Engineering
University of Minnesota

Two of the most pressing challenges that face mankind are the need to reduce anthropogenic emissions of greenhouse gases and due to combustion of fossil fuels and the need to meet an expanding global demand for energy. The U.S. maintains the highest percentage of global energy consumption (24%), and highest per capita energy consumption (339,000,000 Btu). China is second in percentage of global energy consumption (10%) and the growing Chinese economy and rising standard of living strongly suggest that meeting tomorrow's energy needs without adversely affecting the local and global environment is not only necessary but it's an economic opportunity. Professor Garrick will highlight two research projects, involving conventional mechanical engineering as well as nano-scale science and engineering that may be tomorrow's technology.

12:45 – 1:30 p.m. Sustainability Panel Discussion

Dr. Anthony Akubue, Professor, Environmental and Technological Studies
Dr. Sean Garrick, Associate Professor, Mechanical Engineering, University of Minnesota
Valerie Knopp, Assistant Director of Financial Aid, Office of Scholarships and Financial Aid
Teresa A. Lamo-Nelson, Doctoral Candidate, Higher Education Administration
Angela Olson, Assistant Professor, Aviation
Dr. Tracy E. Ore, Associate Professor/Coordinator, Sociology and Anthropology/SCSU Community Garden
Dr. Mitch Bender (Moderator), Associate Professor, Environmental and Technological Studies

1:30 – 2:00 p.m. Reception

RECEPTION AND CLOSING CEREMONY – CASCADE ROOM

6:30 – 7:00 p.m. Reception – All SRC attendees are welcome to the reception.

7:00 - 8:00 p.m. Closing Ceremony – The 2009 Student Research Colloquium Best Poster Awards and Best Paper Awards will be announced and given. The College of Science and Engineering Denise M. McGuire Research Awards will be announced and given.

LOOKING BEYOND THE NOTES: A MUSIC RESEARCH AND PERFORMANCE COLLOQUIUM

8:00 – 10:00 p.m. Performing Arts Center, Ruth Gant Recital Hall, Room 230

Students from the SCSU Music Department will perform and discuss the creative process of performance. Students were selected to present based on faculty nomination.

SCHEDULE OF EVENTS

Session	Event	Time	Room
Session A-C	Paper Competition-1	8:00 AM - 9:20 AM	Cascade
Session A-GN	Economics-1	8:00 AM - 9:20 AM	Glacier North
Session A-GS	Contending Sociological Perspectives on Religion's Changing Significance	8:00 AM - 9:20 AM	Glacier South
Session A-VN	Applied Sciences-1	8:00 AM - 9:20 AM	Voyageurs North
Session A-VS	Behavioral Sciences-1	8:00 AM - 9:20 AM	Voyageurs South
Session B-B	Poster Session I - All Disciplines	9:00 AM - 10:30 AM	Ballroom
Session C-C	Paper Competition-2	9:30 AM - 10:50 AM	Cascade
Session C-GN	Language-1	9:30 AM - 10:50 AM	Glacier North
Session C-GS	German	9:30 AM - 10:50 AM	Glacier South
Session C-VN	Science & Engineering-1	9:30 AM - 10:50 AM	Voyageurs North
Session C-VS	Behavioral Sciences-2	9:30 AM - 10:50 AM	Voyageurs South
Session D-C	Paper Competition-3	11:00 AM - 12:20 PM	Cascade
Session D-G	Sociology-1	11:00 AM - 12:20 PM	Granite
Session D-GN	Applied Sciences-2	11:00 AM - 12:20 PM	Glacier North
Session D-GS	Innovation	11:00 AM - 12:20 PM	Glacier South
Session D-LT	Engineering	11:00 AM - 12:20 PM	Little Theatre
Session D-VN	Science & Engineering-2	11:00 AM - 12:20 PM	Voyageurs North
Session D-VS	Language-2	11:00 AM - 12:20 PM	Voyageurs South
Session E-C	Sustainability - Keynote Speech Followed by Panel Discussion	12:30 PM - 1:30 PM	Cascade
	Reception	1:30 PM - 2:00 PM	
Session F-G	SCSU Survey	2:00 PM - 3:20 PM	Granite
Session F-GN	Economics-2	2:00 PM - 3:20 PM	Glacier North
Session F-GS	Biological & Behavioral Sciences	2:00 PM - 3:20 PM	Glacier South
Session F-M	Sociology-2	2:00 PM - 3:20 PM	Mississippi
Session F-O	The Links Between Religion Social Context	2:00 PM - 3:20 PM	Oak
Session F-VS	Science & Engineering-3	2:00 PM - 3:20 PM	Voyageurs South
Session G-B	Poster Session II - All Disciplines	2:00 PM - 3:30 PM	Ballroom
Session H-GN	Student Survey	3:30 PM - 4:50 PM	Glacier North
Session H-GS	Social Sciences-1	3:30 PM - 4:50 PM	Glacier South
Session H-VN	Behavioral Sciences & Engineering	3:30 PM - 4:50 PM	Voyageurs North
Session H-VS	Performance	3:30 PM - 4:50 PM	Voyageurs South
Session I-B	Poster Session III - All Disciplines	4:00 PM - 5:30 PM	Ballroom
Session J-GN	Economics-3	5:00 PM - 6:20 PM	Glacier North
Session J-GS	Business Computer Information Systems	5:00 PM - 6:20 PM	Glacier South
Session J-VN	Social Sciences-2	5:00 PM - 6:20 PM	Voyageurs North
Session K-C	Reception	6:30 PM - 7:00 PM	Cascade
	Awards Ceremony	7:00 PM - 8:00 PM	
Session L-R	Looking Beyond the Notes: A Music Research And Performance Colloquium	8:00 PM - 10:00 PM	Ruth Gant Recital Hall Rm 230, Performing Arts Ctr

STUDENT RESEARCH COLLOQUIUM PROGRAM

Session A-C **Paper Competition-1** **Cascade**

Moderator Cindy Gruwell, Associate Professor, LR&TS

Time	Index	Presenter(s)	Project Title
8:00 AM	1	Schroeder, Christopher; Meunier, Joseph; Hemminger, Corey	BCRL Global Authentication
8:20 AM	2	Krause, Karla	Sociosemantics and Book Clubs
8:40 AM	3	Pradhananga, Amit	E. coli loading of water and sediment in the Sauk River, Minnesota
9:00 AM	4	Schroeder, Christopher; Meunier, Joseph; Hemminger, Corey	Using Virtual Hosts

Session A-GN **Economics-1** **Glacier North**

Moderator Philip Grossman, Professor, Economics

Time	Index	Presenter(s)	Project Title
8:00 AM	1	Mizer, Holly	Interaction in Tax Policies Among States
8:20 AM	2	Le, Thu	The Relationship Between Technology Innovativeness and Consumers' Characteristics with Online Banking Adoption
8:40 AM	3	Jenniges, Derrick	Determinants of Credit Supply: An Empirical Investigation
9:00 AM	4	Best, Thomas	Lottery Ticket Consumption

Session A-GS **Contending Sociological Perspectives on Religion's Changing Significance** **Glacier South**

Moderator Stephen Philion, Assistant Professor, Sociology

Time	Index	Presenter(s)	Project Title
8:00 AM	1	Wambua, Angela	Changing Christianity and the Acceptance of Relativism
8:20 AM	2	Vondal, Edward	Churches, Beliefs, Expansion: A Comparison of How the Spread of Capitalism Impacted Tribalistic Cultures in Europe and on Turtle Island
8:40 AM	3	Giller, Jeffery	Religion and Homosexuality: Urban and Suburban Churches' Position on LGBT Issues

Session A-VN **Applied Sciences-1** **Voyageurs North**

Moderator Latha Ramakrishnan, Assistant Professor, Chemistry

Time	Index	Presenter(s)	Project Title
8:00 AM	1	Quek, Yi Lin; Law, Chin Yew	Improve Production with Lean Six-Sigma
8:20 AM	2	Greene, Alexander; Woznica, Ewa	Factors Affecting Retention of SCSU Students
8:40 AM	3	Kraushaar, Scott	Aspects of the Role of Winter Weather Pertaining to Vehicle Crashes in Saint Cloud, MN from 1998 to 2009
9:00 AM	4	Law, Chin Yew; Mallikarjunappa, Lohit	Optimizing Work in Process in the Stamping Area of an Assembly Plant

STUDENT RESEARCH COLLOQUIUM PROGRAM

Session A-VS **Behavioral Sciences-1** **Voyageurs South**

Moderator Mohammad Mahroof-Tahir, Professor, Chemistry

Time	Index	Presenter(s)	Project Title
8:00 AM	1	Hagestuen, Christopher; Ackley, David	MK57 Virtual Fit Check
8:20 AM	2	Rooney, Anna	The Necessity of Music Education
8:40 AM	3	Hoffman, Rebecca	Peer Mediation as an Approach to Combat Adolescent Conflict in Schools
9:00 AM	4	Aasen, Bradley	Reflexes vs. Personal Wellbeing (Medical regression analysis)

Session B-B **Poster Session I - All Disciplines** **Ballroom**

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

Time	Index	Presenter(s)	Project Title
9:00 AM	1	Lynch, Trevor; Barthel, Craig	SCSU Survey Feeling Thermometer
9:00 AM	2	Carlyon, Joseph	Integrating Prescribed Burn and Chemical Herbicide for the Control of Common Tansy Tanacetum vulgare
9:00 AM	3	Malla, Kailash; Flores, Julia; Nelson, Cassandra	Tendency to Pickup Money
9:00 AM	4	Malla, Kailash	Finding Meaning: Graphic Novel Comprehension and Field Independence
9:00 AM	5	Leichtnam, Paige	The Influence of Grandparents on College Students
9:00 AM	7	Wendlandt, Kati	Extroversion and Creativity across Real-World Situations
9:00 AM	8	Poganski, Beth	Histological Investigation of the Biological Effects of Endocrine Disrupting Pollution in Minnesota Lakes
9:00 AM	9	Honcharoff, Amber; Vanderbilt, Ann; Wachter, Toni; McLain, Kristin; Screeden, Julia	Speech-Language Pathologists' Participation In and Knowledge About Health/Wellness in the Workplace
9:00 AM	10	Thapa, Rajan	Mechanism of interaction of Alzheimer's disease drugs with aggregates of beta-amyloid peptide (AB 1-42)
9:00 AM	11	Knutson, Lacy	Teaching Functional Communication to an Adult with Developmental Disabilities
9:00 AM	12	Stillwell, Matthew	Life Stress and Task Performance
9:00 AM	13	Chen, Feng	Electric Magnetic Simulation Tool
9:00 AM	14	Scott, Lwando	Xenophobia and Capitalism in South Africa
9:00 AM	15	Grulke, Jerisa; Nelson, Hillary; Jama, Naima; Sherpa, Mingmar; Kommer, Cathrine; Cashman, Anna; Langworthy, Casey; Ringler, Sarah	An Assessment of Sexuality Education
9:00 AM	16	Maskey, Manjit	Vanadium- Flavonoid Complexes as the Inhibitors of the Enzymes Involved in Glucose Metabolism

9:00 AM	17	Lin, Jiangli	Reverberation and Uncertainty of Vibro-Acoustograhy
9:00 AM	18	Crookston, Carina	Goniothalamin Analogues Incorporating Alpha-Methylene Lactones
9:00 AM	19	Bialka, Susan; Mboko, Wadzanai	Acute Fasting-Induced Changes in Motilin, Luteinizing Hormone and Metabolites in Castrated Goats
9:00 AM	20	Stenske, Michelle	Increasing Sight-word Reading and Math Skills Using Response Repetition
9:00 AM	21	Edin, Jennifer	Fraternal Organizations and Their Disability Related Programs
9:00 AM	22	Olson, Emily	A Distance-Cost Analysis of Hinterland Variation for Rainbow Kennels in Braham, MN, Between 1994 and 2008
9:00 AM	23	Johnson, Samuel	Instrumentation and Calibration of Track and Field Starting Blocks for the Measurement of Kinetic Data
9:00 AM	24	Ahles, Amanda	Sociology of Eating Disorders
9:00 AM	25	Lukkes, William	Atomic Force Microscope Imaging
9:00 AM	26	Mitchell, Heather; Kohl, Heather; Sprengeler, Jennifer; Langner, Jennifer; Tures, Mildred; Tuladhar, Chungta; Rassier, Shannon; Dauphin, Stephanie	Stearns County Fall Assessment
9:00 AM	27	Nwachukwu, Chudy	Impact of Electroporation Technology on Fight Against Cancer
9:00 AM	28	O'Hara, Kaye; Knutson, Lindsay; Gabbert, Kristina; Martell, Patricia; Treichel, Katherine	Safety and Security Issues for Speech-Language Pathologists on the Job
9:00 AM	29	Konkel, Christopher; Buckner, John; DeWald, Eric	Reading Graphic Novels: Effects of Media on Comprehension
9:00 AM	30	Borgerding, Tara	Restoration of Battle Point Park on Lake Osakis
9:00 AM	31	Vouk, William; Balle, Elischeba; Syed, Zafrul; Jeppesen, Dane; Sacko, Fatimata; Gazal, Akinfolarin; Victorson, Eric; Harter, Joseph	Liquid crystals tell temperatures - A physics and computer science project
9:00 AM	32	Johnson, Hannah; Schwartz, Juleena; John, Ashley; Ganser, Carolyn; Forster, Michael; Shrestha, Shikha; Oliech, Nephat	Resources for Young Families in Meeker County
9:00 AM	33	Gurung, Kushal	Characterization of Algae Overgrowth Using Water Sampling and Geographic Information System
9:00 AM	34	Jangu, Neema	Understanding Third World Women: A Transnational Feminist Perspective
9:00 AM	35	Wenz, Donald	Synthesis, Characterization and DNA Interaction Studies of Metal Complexes Using Atomic Force Microscopy
9:00 AM	36	Castellano, Janna	Metabolic Demand of a Kettlebell Workout Routine
9:00 AM	37	Lallemont, Mark	Smart Vending Machine
9:00 AM	38	Galoff, Megen	A Meteorological Performance Comparison of CSU-CHILL Radar New and Old Antennas

9:00 AM	39	Berg, Rachael; Coyer, Sarah; Roberts, Nicole	Social Norms: Reducing High-Risk Drinking Among On-Campus Students
9:00 AM	40	Kuschke, April; Ford, Ashlee; Udermann, Mary	The Influence of a POWER /BALANCE Hologram on Single Leg Standing Balance
9:00 AM	41	Seaton, Thomas	Utilization of the Miller Center: A Gender-Affordance Interaction
9:00 AM	42	Eisenschenk, Glen	Investigation of Nitration Reactions for Organic Chemistry 1 Laboratory
9:00 AM	43	Deans, Carrie	The Impact of Stoichiometry on Competitive Interactions in a Detritus-Based Stream Invertebrate Community
9:00 AM	44	Shelton, Lisa; Mazour, Audra	How to Perform a Job Analysis of an Electrical Engineer
9:00 AM	45	Miller, Tyler; Lindfors, Jeanette	Investigation of Multiple Fingerprinting Methods to discriminate between Bacillus cereus group I bacteria
9:00 AM	46	Hansen, Malinda	Video Field Selection Errors When Measuring Collegiate Volleyball Jump Heights
9:00 AM	47	Wade-Ferrell, Jessica	The Role of Toxoplasma gondii Cell Cycle Proteins in the Perturbation of the Cell Cycle of Budding Yeast Saccharomyces Cerevisiae
9:00 AM	48	Meyer, Greta; Anderson, Anne; Degenhardt, Kristi; Shoberg, Krista; Flaherty, Brenna	Speech-Language Pathologists' Perceptions of Employer Emphasis on Health and Wellness
9:00 AM	50	Johnstone, Lucas; Lohrman, Jessica	Sythesis and Characterization of 5,6,11,12-tetrachlorotetracene
9:00 AM	51	Liu, Yu	Finite Element Simulation for Ultrasound Vibrometry and Wave Propagation in Anisotropic Biological Tissue
9:00 AM	52	Cheng, Shiang Kai	Development of gas chromatography mass spectrometry, liquid chromatography mass spectrometry and high performance liquid chromatography methods for the detection of ethylene glycol ethers
9:00 AM	53	Tey, Chih Hsiang; Tay, Yii Van; Ong, Ta Ren	Modulation of human liver aldehyde dehydrogenase (ALDH3A1 and ALDH9A1) activity by glyoxal and methylglyoxal may lead to non-alcoholic steatohepatitis (NASH) and diabetes
9:00 AM	54	Seidel, Aaron	Stimulated Brillouin Scattering of Laguerre-Gaussian Beams
9:00 AM	55	Bordwell, Benjamin	Scientific Glass Blowing and Its Applications

Session C-C **Paper Competition-2** **Cascade**

Moderator JoAnn Meerschaert, Professor, Biological Sciences

Time	Index	Presenter(s)	Project Title
9:30 AM	1	Goh, Kah Yong; Maher, Michael; Olson, Marin; Ertelt, Katie; Nandlal, Larita; Ghate, Ketaki	Janus Tyrosine Kinase 3 Inhibitor WHI-P131 Induces T-Regulatory-Type Immune Response in NOD Mice
9:50 AM	2	Das, Debjani	Anti-Discrimination at Work and the Tata Group of Companies: A Case Study

10:10 AM	3	Nicklay, Matthew	Math requirements and the popularity of the economics major: A cross-sectional study of the United States.
10:30 AM	4	Isaacson, Kristin	Understanding the Demographic & Psychographic Predictors of Online News Adoption: Exploring the Digital Divide in Minnesota

Session C-GN Language-1 **Glacier North**

Moderator Oladele Gazal, Professor, Biological Sciences

Time	Index	Presenter(s)	Project Title
9:30 AM	1	Hoffman, Katie	Fredric Jameson and Postmodernism
9:50 AM	2	Klint, Karl	To Tutor Before Teaching: Dispelling Myths Surrounding English Graduate Assistantships
10:10 AM	3	Perbix, Lisa	Language Acquisition at a St Cloud Chinese Immersion School
10:30 AM	4	Koon, Dustin	Acoustic Analysis of Three NAE Vowels by Native Minnesotans

Session C-GS German **Glacier South**

Moderator Isolde Mueller, Professor, Foreign Languages and Literature

Time	Index	Presenter(s)	Project Title
9:10 AM	1	George, Marisa	Stearns County German: Andreas Job's Life in Oak Township
9:30 AM	2	Lundgren, Naomi	Populist Politics in the St Cloud German Immigrant Communitiy, 1890's
9:50 AM	3	Petersen, Lucas	The German Language in Central Minnesota
10:10 AM	4	Younker, Kathleen	Heirs of Guilt: The Forgotten Victims of World War II
10:30 AM	5	Rogers, Jacob	1096 Rhineland Persecutions: Inhumane Economics

Session C-VN Science & Engineering-1 **Voyageurs North**

Moderator Cari Kenner, Assistant Professor, Academic Learning Center

Time	Index	Presenter(s)	Project Title
9:30 AM	1	Leet, Jason; Relph, Dana	Fluorescence Life Time Study of Tetracene Single Crystal
9:50 AM	2	Stanga, Michael	Effects of Population Density and Storm Reports in Minnesota from 1985-2005
10:10 AM	3	Quek, Yi Lin; Sanam, Sri Harsha	Ergonomic Redesign and Evaluation of a Workstation to Reduce Worker Injuries
10:30 AM	4	Taraldsen, Matthew	Post Storm Survey

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Session C-VS **Behavioral Sciences-2** **Voyageurs South**

Moderator Elena Kurinski, Assistant Professor, Foreign Languages and Literature

Time	Index	Presenter(s)	Project Title
9:30 AM	1	Jaspers, MaryEllen	Marked by Faith: the Rhetorical Power of Christian-based Charities
9:50 AM	2	Adjei-Bosompem, Eunice	The Working Place Problems of Working Women
10:10 AM	3	Klepetar, Adam; Kuznia, Jodi	Emotional Intelligence in Higher Education
10:30 AM	4	Jacobson-Schulte, Marah	Understanding the Experience of Parents Employed at Midwestern Postsecondary Institutions

Session D-C **Paper Competition-3** **Cascade**

Moderator Melissa Prescott, Assistant Professor / Reference Services Coordinator, Miller Center Library

Time	Index	Presenter(s)	Project Title
11:00 AM	1	Maher, Michael	From Synthesis to Chemoprevention: Application of Novel Goniothalamin Analogues On MCF-7 Cells For Assessment of Cytotoxicity
11:20 AM	2	May, Mike	The Making of a Self-Made Man: Rock, Hope, and Bruce Springsteen
11:40 AM	3	McGee, Meghan	The Impact of Human Contaminants on Aquatic Environments: Adverse Effects on Fish

Session D-G **Sociology-1** **Granite**

Moderator Paul Greider, Assistant Professor, Sociology and Anthropology

Time	Index	Presenter(s)	Project Title
11:00 AM	1	Dwyer, Cory; Scott, Lwando; Adjei-Bosompem, Eunice; Anastasi, Lisa; Geyer, Courtney; Jeyachandran, Rebecca; Kowalski, Amanda; Faidley, Kristen; Warner, Erik; Goemer, Amy; Pechonick, Tami; Buermann, Amy; Gyawaly, Anu; Horton, Alyssa; Larson, Benjamin; Mart	Sociology of Work

Session D-GN **Applied Sciences-2** **Glacier North**

Moderator Michael Gorman, Assistant Professor, Reference Librarian, LR&TS

Time	Index	Presenter(s)	Project Title
11:00 AM	1	Coss, David	On a Proposed Solution to the Continuum Problem
11:40 AM	3	Cheng, Shu Hui	Sauk River Assessment
12:00 PM	4	Westerhoff, Susanne	Human Trafficking and the United Arab Emirates

STUDENT RESEARCH COLLOQUIUM PROGRAM

Session D-GS Innovation **Glacier South**

Moderator Nancy Mills, Assistant Professor, Academic Learning Center

Time	Index	Presenter(s)	Project Title
11:00 AM	1	Brandriet, Alexandra	A Comparison of Upper-Level Chemistry Majors' and Chemistry Experts' Knowledge of Physical Change and Environmental Topics
11:20 AM	2	Shrestha, Ritu	An Investigation into the Scope and Prospect of Virtual Existence of Businesses in Second Life
11:40 AM	3	Smith, Mark	Minnesota Geographical Locations and Identity Assumptions
12:10 PM	4	Stepanek, Joshua	From micro to macro: Determining hydrodynamic properties of stalk forming pennate diatoms

Session D-LT Engineering **Little Theatre**

Moderator Mary Edwards, Professor, Economics

Time	Index	Presenter(s)	Project Title
11:00 AM	1	Ramdas, Goutham	Defense & Combat Systems-An Insight into 21st Century Warfare
11:20 AM	2	Zollner, Justin; Nistler, Adrian; Kaiser, Timothy; Roggenkamp, Kyle; Klaehn, Isaac; Grow, Matthew	FSAE Racecar

Session D-VN Science & Engineering-2 **Voyageurs North**

Moderator Andrew Jilani, Assistant Professor, Ethnic Studies

Time	Index	Presenter(s)	Project Title
11:00 AM	1	Pederson, Nicholas; Johnson, Nathan; Simone, Jessica	Hydrogen/Gasoline Hybrid System
11:20 AM	2	Das, Debjani	A Proposed Study and Analysis of User Perceptions of Biometric Acceptance
11:40 AM	3	Carlyon, Joseph	Integrating Prescribed Burn and Chemical Herbicide for the Control of Common Tansy Tanacetum vulgare

Session D-VS Language-2 **Voyageurs South**

Moderator Roger Belisle, Assistant Professor, Psychology

Time	Index	Presenter(s)	Project Title
11:00 AM	1	Rooney, Anna	A Program on the Slippery Slope of Slothful Syntax
11:20 AM	2	Seifert, Nicholas; Chong, Pik Kuan	The Riveting Adventures of Peer Paired Tutorials in Outer Space
11:40 AM	3	Heimermann, Mark	The Implied Author in Comics
12:00 PM	4	Klicker, Karin	Emily Dickinson: A Study in Psychology

Session E-C **Sustainability - Keynote Speech Followed by Panel Discussion** **Cascade**

Moderator Mitch Bender, Associate Professor, Environmental and Technological Studies

Time	Index	Presenter(s)	Project Title
12:30 PM	1		Keynote Speaker: Dr. Sean Garrick
12:50 PM	2		Panel Discussion
1:30 PM	3		Reception

Session F-G **SCSU Survey** **Granite**

Moderator Sandrine Zerbib, Assistant Professor of Sociology, Sociology and Anthropology

Time	Index	Presenter(s)	Project Title
2:00 PM	1	Helm, Renee; Lynch, Trevor; Barthel, Craig; Helmin, Derrek; Saucedo, Frederico; Thapa, Birat; Kampa, Kaelynn; Schoenberg, Chris; Karsten, Keith; Nelson, Heidi	SCSU Survey

Session F-GN **Economics-2** **Glacier North**

Moderator Philip Grossman, Professor, Economics

Time	Index	Presenter(s)	Project Title
2:00 PM	1	Robish, Scott	Influence of Local Economy on Major League Baseball Attendance
2:20 PM	2	Kordosky, Jordan	MVP Voting
2:40 PM	3	Stock, Garrett	Fouls in the National Basketball Association
3:00 PM	4	Eannelli, Michael	Rural Minnesota Pharmacy Viability

Session F-GS **Biological & Behavioral Sciences** **Glacier South**

Moderator Art Grachek, Professor Emeritus, Communication Studies

Time	Index	Presenter(s)	Project Title
2:20 PM	2	Ziegler, Frank	Advertisement Behavior of Springtime-Breeding Frogs During an Aberrantly Cold Spring
2:40 PM	3	Kane, Rahul	Characterizing Toxoplasma Gondii Protein TgCYC2 80.m03971
3:00 PM	4	Jeyachandran, Rebecca	Immigrant Workers

Session F-M **Sociology-2** **Mississippi**

Moderator Paul Greider, Assistant Professor, Sociology and Anthropology

Time	Index	Presenter(s)	Project Title
2:00 PM	1	Leichtnam, Paige; Anastasi, Lisa; Wambua, Angela; Pechonick, Tami; Buermann, Amy; Palokangas, Preston; Schmit, Nicole	Self and Society

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Session F-O **The Links Between Religion Social Context** **Oak**

Moderator Stephen Philion, Assistant Professor, Sociology

Time	Index	Presenter(s)	Project Title
2:00 PM	1	Scott, Lwando	The Influence of Christianity on Indigenous South Africans
2:20 PM	2	Pechonick, Tami	Where is God Now: A Sociological Look at Impending Death and the Role of Religion
2:40 PM	3	Panchmatia, Neil	The Catholic Church and Somali Immigrants in Central Minnesota: A Comparative Study of Faith-Based Social Justice Engagement
3:00 PM	4	Dwyer, Cory	Religious Economics: Interaction Between the Community and Local Christian Religious Institutions

Session F-VN **Discussion with Dr. Sean Garrick** **Voyageurs North**

Moderator Dr. Balsy Kasi, Professor, Environmental and Technological Studies

Time	Index	Presenter(s)	Project Title
2:00 PM	1		Discussion with Keynote Speaker Dr. Sean Garrick

Session F-VS **Science & Engineering-3** **Voyageurs South**

Moderator Hiral Shah, Assistant Professor, Mechanical and Manufacturing Engineering

Time	Index	Presenter(s)	Project Title
2:00 PM	1	Phuyal, Biswaraj; Philippe, Jonathan; Khanal, Abinash	Optimization of Production Input to Streamline Excess Component Inventory in an Assembly Line
2:20 PM	2	Metz, Emily; Heydt, Rachael	Histological Assessment of Liver Samples Taken from Perfluooctane Sulfonate (PFOS) Exposed Bluegill Sunfish (Lepomis macrochirus)
2:40 PM	3	Tatineni, Sushmita; Marripudi, Alekhya	Application of Ergonomics to Prevent Musculoskeletal Injuries at a Manufacturing Workstation

Session G-B **Poster Session II - All Disciplines** **Ballroom**

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

Time	Index	Presenter(s)	Project Title
2:00 PM	1	Wenger, Carol; Armstrong, Amanda; Bearson, Rachel; Johnke, Andrea; Neumann, Geraldine; Ogle, Sharon; Varner, Kali; Fineday, Rebekah	Wright County Fall Risk Assessment
2:00 PM	2	Strand, Nathan	Patenting the Genome
2:00 PM	3	Modi, Rupesh; Mandal, Ayush; Chaulagain, Sagar	Characterization of Class 3 Aldehyde Dehydrogenase with T186S Point Mutation
2:00 PM	4	Mandal, Ayush; Chaulagain, Sagar	Production of Cellulosic Ethanol
2:00 PM	5	Gorder, Bradley	The Effect of Ego Depletion on Biome Preferences

2:00 PM	6	Scherer, Jacob; Free, Kelly; Godding, Benjamin	Electronic Paintball Sentry
2:00 PM	7	Patridge, Margaret	Becoming Global: A Study In Intercultural Competence
2:00 PM	8	Bergstrom, Courtney	Global Warming
2:00 PM	9	Mahroof, Taqdees	Molecular-Basis for Anticancer Activity of Ruthenium-Benzimidazole Metal Complexes
2:00 PM	10	Mareini, Fatima	Vitamin A Deficiency: A Hidden Problem that can be Prevented by Simple Public Health Measures
2:00 PM	11	Olson, Marin	Flow Cytometric Analysis of Cell Death Induced by WHI-P131 and Rapamycin in Cultured T-cells of NOD Mice
2:00 PM	12	Nandlal, Larita	The Effect of Rapamycin on Generation of the T-regulatory Cells in NOD/LtJ Mice
2:00 PM	13	Enninga, Melissa	What Should be Done to Decrease Frog Deformation
2:00 PM	14	Gill, Satinderpal	Peak-To-Average Power Reduction of OFDM Signals Using Adaptive Digital Filter
2:00 PM	15	Gartei, Marion; Brandt, Ross; Balla, Yohanis; Peterson, Mandy; Chalupsky, Curtis	Travel Behaviors of Elders and People with Disability
2:00 PM	16	Peterson, David	An Analysis of Terminated Propane Customers: A Case Study of Range Bottle Gas, Coleraine, MN, 2007-2009
2:00 PM	17	Welle, Erin; Dahl, Jason; Heintzeman, Colin; Paavola, Ryan; Wachter, Brody	The St. Cloud Community's Inclination Towards Modal Switch
2:00 PM	18	Welle, Erin; Reichl, Melissa; Brama, Patrick	Southside University Neighborhood Revitalization
2:00 PM	19	Brama, Patrick; Singh, Sophiya; Browne, Eric; Gerads, Christopher; Phelps, Scott	Mode Choice characteristics of University Students
2:00 PM	20	Stein, Megan	Characteristics of People in Advertisement
2:00 PM	21	Goh, Kah Yong; Maher, Michael; Olson, Marin; Ertelt, Katie; Nandlal, Larita; Ghate, Ketaki; Poudel, Sumeet	Flow Cytometric Analysis of NOD/LtJ and C57BL/6 Mouse Splenocytes
2:00 PM	22	Goh, Kah Yong; Maher, Michael; Olson, Marin; Ertelt, Katie; Nandlal, Larita; Ghate, Ketaki	Immunophenotyping of Cultured NOD Mouse T-cells by Flow Cytometry
2:00 PM	23	Goh, Kah Yong; Poudel, Sumeet	T-Cell Proliferation Conditions in Fathead Minnow
2:00 PM	24	Maher, Michael; Olson, Marin; Ertelt, Katie; Ghate, Ketaki	Analysis of Immune Cell Differentiation Due To JAK-3 Kinase Inhibition Using Flow Cytometry
2:00 PM	25	Lamb, Katherine	Hearing Loss in Musicians: The Need for a Hearing Health Program at St. Cloud State University
2:00 PM	26	Lamb, Katherine	Facilitating Social Skills using Voice Output Devices in a Child with ASD and Anxiety
2:00 PM	27	McDonald, James	Date of Implementation and Extent of GIS Capabilities of Minnesota Counties
2:00 PM	28	Hillukka, Gary	Educational Experimentation System for Ultrasound Vibrometry and Vibro-Acoustography

2:00 PM	29	Hoffer, Jeannette	Sim River
2:00 PM	30	Stafne, Joseph	Analysis of Nutrient Loading and Escherichia. Coli Contamination of Johnson Creek
2:00 PM	31	Mukherjee, Debashree	Ground Bounce Analysis and Reduction
2:00 PM	32	Hagel, Matthew; Carlier, Jill; Lee, Desiree	Meteorological Autonomous Aircraft
2:00 PM	33	Reinhart, Jeffrey	Trends in Water Quality in Minnesota and Quetico Lakes
2:00 PM	34	Anderson, Tedman	A Cartogram and Choropleth Map Comparison of the 2008 Minnesota Senate Election
2:00 PM	35	Fuchs, Brody	Measuring small wavelength shifts with a Spatial Heterodyne Spectrometer
2:00 PM	36	Criswell, Rebekah	Effects of a Lipid Depleted Food Source on Daphnia Magna Life Cycles
2:00 PM	37	Borgheiinck, Carrie	An Analysis of St. Cloud, Minnesota's, 2007 Crime Locations and Zoning Classifications
2:00 PM	38	Deuermeyer, Hank; Bennett, Michael	Synthesis and Characterization of Perylenetetracarboxdiimides
2:00 PM	39	Buerkley, Megan	Larval and Embryonic Fathead Minnows Ammonia Exposure
2:00 PM	40	Beeler, Jonathan	Using Mass Spectrometry to Identify Bacteria and Bacterial Products
2:00 PM	41	Wienhold, Mark	A Novel Short Pathway for the Semi-Synthesis of a potential Bioactive Molecule Betulone and its Analogs
2:00 PM	42	Gacke, Jeramy	Histopathology Screening of Fish Populations
2:00 PM	44	Cagle, Eric	Should People Eat Cloned Beef
2:00 PM	45	Ruchko, Olena	Immigration Stress and Marital Satisfaction
2:00 PM	46	Niraula, Suresh; Bhattarai, Pallav	Water Quality Analysis of the Sauk River and Mississippi River Confluence
2:00 PM	47	Finley, Amanda	Teaching Group Work in Counselor Education Programs: The Importance of Screening
2:00 PM	48	Carroll, Regina	Detecting Changes in Simulated Events: Using Variations of Momentary Time-Sampling to Measure Changes in Duration Events
2:00 PM	49	Tchokouali, Christian; Poudel, Suraj; Meyer, Joseph	Multitouch screen and telepresence robot
2:00 PM	50	Wegwerth, Justin	An Investigation of the Microwave Extinction and Scattering Properties of Realistic Frozen Hydrometeors
2:00 PM	51	Muhich, Molly	The Value of the Golden Ratio
2:00 PM	52	McCarthy, Kathleen	The Changing Nature of the Field of Rehabilitation Counseling: Trends From the Past and Future Opportunities
2:00 PM	53	Traore, Mohamed	Total Synthesis and Characterisation of Two Pharmaceutically Promising, Antiviral Drug Precursors from Triterpenoid-based Natural Products

2:00 PM	54	Mendonsa, Riyan	Improving Magnetic Random Acess Memories Using Ar+ Ion Implantation
2:00 PM	55	Walters, Anna	Greenhouse Gases and their effect on Global Warming
2:00 PM	56	Teoh, Wei Loon	High-fructose Corn Syrup (HFCS) Derived Aldehydes, Glyoxal and Methylglyoxal, Modulate Human Liver Aldehyde Dehydrogenase Activity that may Lead to Non-alcoholic Steatohepatitis (NASH) and Diabetes

Session H-GN Student Survey **Glacier North**

Moderator Michelle Hammes, Associate Professor, Political Science

Time	Index	Presenter(s)	Project Title
3:30 PM	1	Vasil'Yeva, Maria; Karsten, Keith; Sissoko, Oumou	Effect of Question Order and Response Order in SCSU Spring 2008 Student Survey
4:00 PM	2	Haberman, Melissa	Mommy Wars: A Lose-Lose Situation for Mothers in Modern Society
4:20 PM	3	Hyndman, Katie	Reproductive Effects of Variable Estradiol Treatments on Male Fathead Minnows (Pimephales promelas)

Session H-GS Social Sciences-1 **Glacier South**

Moderator Jan Kircher, Assistant Professor, Social Work

Time	Index	Presenter(s)	Project Title
3:30 PM	1	Anastasi, Lisa	Challenging Structures of Power-Immigrant Solidarity
3:50 PM	2	Geyer, Courtney	Community Service Learning Project: Independence Center
4:10 PM	3	Scott, Lwando	The Disparities Between the Old and New Economy: Conversations with Senior Citizens
4:30 PM	4	Owen, Erin	US Patriot Act- Brain Draining the US Intellectual Capital

Session H-VN Behavioral Sciences & Engineering **Voyageurs North**

Moderator Yongli Zhao, Assistant Professor, Mechanical and Manufactuing Engineering

Time	Index	Presenter(s)	Project Title
3:30 PM	1	Olson, Angela	Black & White: Perceptions into the Effect of Race and Type of Aggression of Female Aggression
3:50 PM	2	Peterson, Yusan; Tan, Zheng Guan; VanKeulen, Christopher	Defective Shotshell Recycling System
4:10 PM	3	Zeleke, Hermon	South Africa & Laos: a Comparative Study of the Methods of Eradicating Poverty
4:30 PM	4	Guenther, Casandra; Carlson, Nicholas	Bicycle Rack Lifting Mechanism

STUDENT RESEARCH COLLOQUIUM PROGRAM

Session H-VS **Performance** **Voyageurs South**

Moderator Jennifer Quinlan, Assistant Professor, Reference & Instruction Librarian, LR&TS

Time	Index	Presenter(s)	Project Title
3:30 PM	1	Rooney, Anna; Schmoll, Casey	Matilda
3:50 PM	2	Soh, Steve; Almazan, Jose; Tulachan, Ashok	Hyper-stoichiometric
4:10 PM	3	VanderStoep, Jessica	Musical Experience and Language Learning

Session I-B **Poster Session III - All Disciplines** **Ballroom**

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

Time	Index	Presenter(s)	Project Title
4:00 PM	1	Janisch, Robert; Goyette, Thomas; Forsman, Jenifer; Rescigno, Emilio; Wilson, Jonathan; Heikkinen, Kyle; Shrestha, Guinness	Design and Construction of Electrical Vehicle
4:00 PM	2	Johnson, Ben; Voigt, Katie; Kreidermacher, Robert	The Current Economic Condition and Its Effect on SCSU
4:00 PM	3	Nelson, Bradley	Wind Energy
4:00 PM	4	Jentz, Karen	The Bilingual Dance: Factors that Contribute to the Language Choice of Bilingual Mothers
4:00 PM	5	Kowalski, Amanda; Faidley, Kristen	Humane Society Community Awareness
4:00 PM	6	Faidley, Kristen; Sanoski, Melissa; Thielen, Katherine; Wendland, Jessica	The Recruitment and Selection Process of a Director of Human Resources
4:00 PM	7	Lindstrom, Sheila	Grandma's Still Special
4:00 PM	8	Michel, Amber	Diversity in Health Care: How Prejudice Impacts Care
4:00 PM	9	Hammell, Tristan	Individual Differences in Internet Usage
4:00 PM	10	Langager, Matthew	Spatial Characteristics of Mortgage Foreclosures in Sherburne County Minnesota from 2006 to 2008
4:00 PM	11	Ayalew, Assefa	Role of Human Aldehyde Dehydrogenase7A1 in the Metabolism of Anticancer drug Cyclophosphamide and Environmental Contaminants
4:00 PM	12	Kloss, Melissa	Self-Handicapping as a Function of Implicit Theory and Achievement Goal Motivation in Females
4:00 PM	13	Lieser, Elizabeth Ann	Applied Structural Genomics
4:00 PM	14	Mohammed, Naseeruddin	High Speed Channel Modeling
4:00 PM	15	Weyer, Jayme; Johnson, Rebecca; Flynn, Erin; Morseth, Tracy	Mille Lacs County Sexual Education Curriculum
4:00 PM	16	Bagent, Chelsey	Phytolith Assemblages and Opal Concentrations from Modern Soils Differentiate Temperate Grassland Vegetation of Different Types in an Experimental Study at Cedar Creek, Minnesota

4:00 PM	17	Namai, Kazue	Effects of Window View at a Dormitory Setting
4:00 PM	18	Hilsgen, Heather	Assessment Practices of School-Based Speech-Language Pathologists in Minnesota
4:00 PM	19	Bjorke, Jacob; Deve, Kudakwashe; Nde Talla, Urbain Manfred	Emergency Rescue Response Locator System
4:00 PM	20	Steinhoff, Anna	Design and Synthesis of Novel, Acyclic Goniothalamin Analogues
4:00 PM	21	Uphoff, John	Sprawl Report: The Case of Big Lake, Minnesota
4:00 PM	22	Johnson, Tasha	The Effect of Self-Monitoring and Mimicry on Helping Behavior
4:00 PM	23	Kees, Ryan; Liang, Jing	High Speed Product Sweep
4:00 PM	24	Khan, Niveen; Holmseth, Joseph; Trandem, Matthew	Optimized Solar Power System
4:00 PM	25	Hawkins, Dawn; Ziegler, David	Sediment Pond Sedimentation Analysis
4:00 PM	26	Hayman, Michael; Gutknecht, Zachrie	Kinzer Creek Stream Quality Analysis
4:00 PM	27	Schreifels, Theresa	Parent Perception of Preschool Problem Behavior: The Role of Parent Knowledge of Child Development
4:00 PM	28	Beste, Brent	A Hydrologic Analysis of Watab and Rossier Lakes
4:00 PM	29	Alfano, Anthony	Characterizing the Regulation of PGC-1, A Protein Linked to Parkinson's Disease
4:00 PM	30	Hemann, Emily; Nomeland, Beth	Investigation of Gal1 and Gal10 Levels in Saccharomyces cerivisiae Using Quantitative Polymerase Chain Reaction (qPCR)
4:00 PM	31	Stahlback, Dustin; Liu, Liangnan	An Introduction to Orthogonal Frequency Division Multiplexing (OFDM)
4:00 PM	32	Reginek, Jamison	Biochemical Oxygen Demand Analysis of the Sauk and Mississippi Rivers
4:00 PM	33	Antunez, Giovanni	Human ALDH3A1 Genetic Polymorphism Analysis
4:00 PM	34	Roe, Stephanie	N-Heterocyclic Carbene-Supported Catalysts in the Polymerization of Cyclic Esters
4:00 PM	35	Engelking, Jarred	Enantioselective Synthesis of trans-2,5-disubstituted pyrrolidines
4:00 PM	36	Conroy, Kathryn	Systematics and Ecology of Thalassionema, an Important Oceanic Primary Producer and Ecological Indicator
4:00 PM	37	Barney, Michael	Role of Human ALDH6A1 in Resistance to Anticancer Drug Cyclophosphamide
4:00 PM	38	Kristine, Turner	Obesity In High School Kids

STUDENT RESEARCH COLLOQUIUM PROGRAM

Session J-GN **Economics-3** **Glacier North**

Moderator Philip Grossman, Professor, Economics

Time	Index	Presenter(s)	Project Title
5:00 PM	1	Cardinal, Boston	The Relationship Between the Health of the U.S. Economy and the Health of the Population
5:20 PM	2	Swartz, Brandon	What Determines DVD Sales in the Film Industry
5:40 PM	3	Barthelemy, Mitchell	What Are the Effects of the Financial Market on the Technology Sector
6:00 PM	4	McGlynn, Meagan	Foreclosures and Adjustable Rate Mortgages

Session J-GS **Business Computer Information Systems** **Glacier South**

Moderator Mark Schmidt, Associate Professor, BCIS

Time	Index	Presenter(s)	Project Title
5:00 PM	1	Dangol, Sabina; Khan, Aneeqa	Hard Drive Analysis
5:20 PM	2	Condon, Michael	Computer Forensics: Data Retrieval Methodologies
5:40 PM	3	Hou, Tian	Data Aquisition and Analysis in Computer Forensics: Acquiring an Image and Analyzing the Digital Information of a Hard Drive
6:00 PM	4	Guragain, Rekha	Live Forensics

Session J-VN **Social Sciences-2** **Voyageurs North**

Moderator Francis B. Harrold, Dean, College of Social Sciences

Time	Index	Presenter(s)	Project Title
5:00 PM	1	Fonken, Gael	Writing Somali in Osmanya: Language Policy, Literacy and Identity
5:20 PM	2	Birkman, Ryan	American Secessionism as Political Ideology

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

Moderator Leslie Valdes, Associate Professor, Psychology

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

STUDENT RESEARCH COLLOQUIUM PROGRAM

Session **L-R** **Beyond The Notes** **Ruth Gant Recital Hall Room 230, Performing Arts Center**

Moderator Terry Vermillion, Chair, Music Department

Time	Index	Presenter(s)	Project Title
8:00 PM	1	Hogan, Tyler; Eisenstadt, Alicia; Zhong, Lansun; McLeod, Eleanore	Looking Beyond the Notes: A Music Research and Performance Colloquium

FORMAL PAPER COMPETITION

Advertisement Behavior of Springtime-Breeding Frogs during Aberrantly Cold Spring
- Frank Ziegler

Anti-Discrimination at Work and the Tata Group of Companies- A Case Study
- Debjani Das

BCRL Global Authentication Using LDAP with Kerberos
- Corey Hemminger , Joseph T. Meunier, and Christopher Schroeder

Characterizing Toxoplasma Gondii Protein TgCYC2 80.m03971
- Rahul Kane

Escherichia coli (E. coli) Loading of Water and Sediments in the Sauk River, Minnesota
- Amit K. Pradhananga

From Synthesis to Chemoprevention: Application of Novel Goniothalamin Analogues on MCF-7 Cells for Assessment of Cytotoxicity
- Michael F. Maher

Get Connected. Mind Your Health: A Mental Health Awareness Campaign Targeting College Students by
- Alex Gruska and Meggan Johnson

Health and Economic Growth: Reforming Hungarian Health Care
- Jekatyerina Dunajeva

Janus Tyrosine Kinase 3 Inhibitor WHI-P131 Induces T-regulatory-type Immune Responses in NOD Mice
- Ketaki Ghate

Math Requirements and the Popularity of the Economics Major: A Cross-Sectional Study of the Midwestern United States
- Matthew W. Nicklay

Optimization of Production Input to Streamline Excess Component Inventory in an Assembly Line
- Abinash Khanal, J. Mike Philippe, and Biswaraj Phuyal

Sauk River Assessment
- Shu Hui Cheng

Sociosemantics and Lexical Dialectology
- Karla M. Krause

The Impact of Human Contaminants on Aquatic Environments: Adverse Effects on Fish
- Meghan R. McGee

The Making of a Self-Made Man: Rock, Hope and Bruce Springsteen
- Mike May

Understanding the Demographic and Psychographic Predictors of Online News Adoption: Exploring the Digital Divide in Minnesota
- Kristin Isaacson

Understanding the Experience of Parents Employed at Midwestern Postsecondary Institutions
- Marah Jacobson-Schulte

Using Virtual Hosts to Reduce Complexity and Foster "Green" Computing in an Instructional/Research Oriented Computer Domain
- Corey Hemminger, Joseph T. Meunier, and Christopher Schroeder

Working Place Problems of Working Women
- Eunice Adjei-Bosompem

POSTER PRESENTATION COMPETITION

A Cartogram and Choropleth Map Comparison of the 2008 Minnesota Senate Election
- Tedman Anderson

A Novel Short Pathway for the Semi-Synthesis of Betulone: A Naturally Occurring, Trace-Abundant, Biologically Active Triterpenoid having Potential Antiviral Activity
- Mark Wienhold

Acute Fasting-Induced Changes in Motilin, Luteinizing Hormone and Metabolites in Castrated Goats
- Susan Bialka

An Analysis of St. Cloud, Minnesota's 2007 Crime Locations and Zoning Classifications
- Carrie Borgheiinck

Analysis of Immune Cell Differentiation Due to JAK-3 Kinase Inhibition Using Flow Cytometry
- Michael F. Maher

Becoming Global: A Study in Intercultural Competence
- Margaret Patridge

Characterization of Class 3 Aldehyde Dehydrogenase with T1865 Point Mutation
- Sagar Chaulagain

Effects of a Lipid Depleted Food Source on Daphnia Magna
- Rebekah Criswell

Extroversion and Creativity across Real-World Situations
- Kati Wendlandt

Facilitating Social Skills using Voice Output Devices in a Child with ASD and Anxiety
- Katherine Lamb

Finite Element Simulation for Ultrasound Vibrometry and Wave Propagation in Anisotropic Biological Tissue
- Yu Liu

Flow Cytometric Analysis of Cell Death Induced by WHI-P131 and Rapamycin in Cultured T-cells of NOD Mice
- Marin Olson

Flow Cytometric Analysis of NOD/LtJ and C57BL/6 Mouse Splenocytes
- Kah-Yong Goh

Fraternal Organizations and Their Disability Related Programs
- Jennifer Edin

Hearing Loss in Musicians: The Need for a Hearing Health Program at St. Cloud State University Facilitating Social Skills Using Voice Output Devices in a Child with ASD and Anxiety
- Katherine Lamb

Histological Investigation of the Biological Effects of Endocrine Active Compounds in Minnesota Lakes
- Beth H. Poganski

Histopathology Screening of Fish Populations
- Jeramy Gacke

Immunophenotyping of Cultured NOD Mouse T-cells by Flow Cytometry
- Kathleen Ertelt

Impact of Electroporation on Fight against Cancer
- Chudy Nwachukwa

Improving Magnetic Random Acess Memories Using Ar+ Ion Implantation
- Riyan Alex Mendosa

POSTER PRESENTATION COMPETITION

Instrumentation and Calibration of Track and Field Starting Blocks for the Measurement of Kinetic Data
- Samuel Johnson

Integrating Prescribed Burn and Chemical Herbicide for the Control of Common Tansy Tanacetum Vulgare
- Joseph Carlyon

Larval and Embryonic Fathead Minnows Ammonia Exposure
- Megan Buerkley

Liquid Crystals Tell Temperatures- A Physics and Computer Science Project
- Zafrul H. Syed

Mechanism of Interaction of Alzheimer's Disease Drugs with Aggregates of xb (1-42)
- Rajan Thapa

Meteorological Autonomous Aircraft
- Jill Carlier, Matthew Hagel, and Desiree Lee

Production of Cellulosic Ethanol
- Sagar Chaulagain

Reverberation and Uncertainty of Vibro-Acoustography
- JiangLi Lin

Southside University Neighborhood Revitalization
- Patrick Brama, Erin Welle

T-cell Proliferation Conditions in Fathead Minnow
- Sumeet Poudel

Teaching Group Work in Counselor Education Programs: The Importance of Screening
- Amanda Finley

The Effect of Rapamycin on Generation of T-regulatory Cells in NOD/LtJ Mice
- Larita Nandlal

The Impact of Stoichiometry on Competitive Interactions in a Detritus-Based Stream Invertebrate Community
- Carrie Deans

The Influence of a Power/Balance Hologram on a Single Leg Standing Balance
- Ashlee Ford, April Kuschke, and Mary Udermann

The Role of Toxoplasma gondii Cell Cycle Proteins in the Perturbation of the Cell Cycle of Budding Yeast Saccharomyces Cerevisiae
- Jessica Wade-Ferrell

The St. Cloud Community's Inclination Towards Modal Switch
- Erin Welle

The Value of the Golden Ratio
- Molly R. Muhich

Travel Behavior of Elders and People with Disability
- Marion Gartei

Using Mass Spectrometry to Identify Bacterian and Bacterial Products
- Jonathan P. Beeler

Xenophobia and Capitalism in South Africa
- Lwando Scott

STUDENT PRESENTER INDEX

Student Presenter	Project Title	Sponsor(s)	Time	Room
Aasen, Bradley	Reflexes vs. Personal Wellbeing (Medical regression analysis)	Zhang, Shiju	9:00 AM	Voyageurs South
Ackley, David	MK57 Virtual Fit Check	Baliga, Ben	8:00 AM	Voyageurs South
Adjei-Bosompem, Eunice	The Working Place Problems of Working Women	Greider, Paul	9:50 AM	Voyageurs South
Adjei-Bosompem, Eunice	Sociology of Work	Greider, Paul	11:00 AM	Granite
Ahles, Amanda	Sociology of Eating Disorders	Scheel-Keita, Elizabeth	9:00 AM	Ballroom
Alfano, Anthony	Characterizing the Regulation of PGC-1, A Protein Linked to Parkinson's Disease	Olson, Brian	4:00 PM	Ballroom
Almazan, Jose	Hyper-stoichiometric	Bekkala, Andrew	3:50 PM	Voyageurs South
Anastasi, Lisa	Sociology of Work	Greider, Paul	11:00 AM	Granite
Anastasi, Lisa	Self and Society	Greider, Paul	2:00 PM	Mississippi
Anastasi, Lisa	Challenging Structures of Power-Immigrant Solidarity	Greider, Paul	3:30 PM	Glacier South
Anderson, Anne	Speech-Language Pathologists' Perceptions of Employer Emphasis on Health and Wellness	Whites, Margery	9:00 AM	Ballroom
Anderson, Tedman	A Cartogram and Choropleth Map Comparison of the 2008 Minnesota Senate Election	Wixon, Lewis	2:00 PM	Ballroom
Antunez, Giovanni	Human ALDH3A1 Genetic Polymorphism Analysis	Sreerama, Lakshmaiah	4:00 PM	Ballroom
Armstrong, Amanda	Wright County Fall Risk Assessment	Lenz, Brenda; Morrison-Sandberg, Leslie	2:00 PM	Ballroom
Ayalew, Assefa	Role of Human Aldehyde Dehydrogenase7A1 in the Metabolism of Anticancer drug Cyclophosphamide and Environmental Contaminants	Sreerama, Lakshmaiah	4:00 PM	Ballroom
Bagent, Chelsey	Phytolith Assemblages and Opal Concentrations from Modern Soils Differentiate Temperate Grassland Vegetation of Different Types in an Experimental Study at Cedar Creek, Minnesota	Blinnikov, Mikhail	4:00 PM	Ballroom
Balla, Yohanis	Travel Behaviors of Elders and People with Disability	Woldeamanuel, Mintesnot	2:00 PM	Ballroom
Balle, Elischeba	Liquid crystals tell temperatures - A physics and computer science project	Liu, Zengqiang	9:00 AM	Ballroom
Barney, Michael	Role of Human ALDH6A1 in Resistance to Anticancer Drug Cyclophosphamide	Sreerama, Lakshmaiah	4:00 PM	Ballroom
Barthel, Craig	SCSU Survey Feeling Thermometer	Frank, Stephen; Wagner, Steven; Hammes, Michelle; Robinson, David; Zerbib, Sandrine	9:00 AM	Ballroom

STUDENT PRESENTER INDEX

Student Presenter	Project Title	Sponsor(s)	Time	Room
Barthel, Craig	SCSU Survey	Frank, Stephen; Wagner, Steven; Hammes, Michelle; Robinson, David; Zerbib, Sandrine	2:00 PM	Granite
Barthelemy, Mitchell	What Are the Effects of the Financial Market on the Technology Sector	Grossman, Philip	5:40 PM	Glacier North
Bearson, Rachel	Wright County Fall Risk Assessment	Lenz, Brenda; Morrison-Sandberg, Leslie	2:00 PM	Ballroom
Beeler, Jonathan	Using Mass Spectrometry to Identify Bacteria and Bacterial Products	Schrank, Gordon	2:00 PM	Ballroom
Bennett, Michael	Synthesis and Characterization of Perylenetetracarboxdiimides	Lidberg, Russell; Neu, Donald	2:00 PM	Ballroom
Berg, Rachael	Social Norms: Reducing High-Risk Drinking Among On-Campus Students	Reff, Robert	9:00 AM	Ballroom
Bergstrom, Courtney	Global Warming	Pound, Katherine	2:00 PM	Ballroom
Best, Thomas	Lottery Ticket Consumption	Grossman, Philip	9:00 AM	Glacier North
Beste, Brent	A Hydrologic Analysis of Watab and Rossier Lakes	Fedele, Juan	4:00 PM	Ballroom
Bhattarai, Pallav	Water Quality Analysis of the Sauk River and Mississippi River Confluence	Bender, Michner	2:00 PM	Ballroom
Bialka, Susan	Acute Fasting-Induced Changes in Motilin, Luteinizing Hormone and Metabolites in Castrated Goats	Gazal, Oladele	9:00 AM	Ballroom
Birkman, Ryan	American Secessionism as Political Ideology	Lindsey, Jason	5:20 PM	Voyageurs North
Bjorke, Jacob	Emergency Rescue Response Locator System	Yao, Aiping	4:00 PM	Ballroom
Borgerding, Tara	Restoration of Battle Point Park on Lake Osakis	Bender, Michner	9:00 AM	Ballroom
Borgheiinck, Carrie	An Analysis of St. Cloud, Minnesota's, 2007 Crime Locations and Zoning Classifications	Wixon, Lewis	2:00 PM	Ballroom
Brama, Patrick	Mode Choice characteristics of University Students	Woldeamanuel, Mintesnot	2:00 PM	Ballroom
Brama, Patrick	Southside University Neighborhood Revitalization	Rigopoulou-Melcher, Aspasia	2:00 PM	Ballroom
Brandriet, Alexandra	A Comparison of Upper-Level Chemistry Majors' and Chemistry Experts' Knowledge of Physical Change and Environmental Topics	Krystyniak, Rebecca	11:00 AM	Glacier South
Brandt, Ross	Travel Behaviors of Elders and People with Disability	Woldeamanuel, Mintesnot	2:00 PM	Ballroom
Browne, Eric	Mode Choice characteristics of University Students	Woldeamanuel, Mintesnot	2:00 PM	Ballroom

STUDENT PRESENTER INDEX

Student Presenter	Project Title	Sponsor(s)	Time	Room
Buckner, John	Reading Graphic Novels: Effects of Media on Comprehension	Valdes, Leslie; Chisholm, Bradley	9:00 AM	Ballroom
Buerkley, Megan	Larval and Embryonic Fathead Minnows Ammonia Exposure	Schoenfuss, Heiko	2:00 PM	Ballroom
Buermann, Amy	Sociology of Work	Greider, Paul	11:00 AM	Granite
Buermann, Amy	Self and Society	Greider, Paul	2:00 PM	Mississippi
Cagle, Eric	Should People Eat Cloned Beef	Simpson, Patricia	2:00 PM	Ballroom
Cardinal, Boston	The Relationship Between the Health of the U.S. Economy and the Health of the Population	Grossman, Philip	5:00 PM	Glacier North
Carlier, Jill	Meteorological Autonomous Aircraft	Petzold, Mark	2:00 PM	Ballroom
Carlson, Nicholas	Bicycle Rack Lifting Mechanism	Covey, Steven	4:30 PM	Voyageurs North
Carlyon, Joseph	Integrating Prescribed Burn and Chemical Herbicide for the Control of Common Tansy Tanacetum vulgare	Arriagada, Jorge	9:00 AM	Ballroom
Carlyon, Joseph	Integrating Prescribed Burn and Chemical Herbicide for the Control of Common Tansy Tanacetum vulgare	Arriagada, Jorge	11:40 AM	Voyageurs North
Carroll, Regina	Detecting Changes in Simulated Events: Using Variations of Momentary Time-Sampling to Measure Changes in Duration Events	Rapp, John	2:00 PM	Ballroom
Cashman, Anna	An Assessment of Sexuality Education	Lenz, Brenda; Warner, Susan	9:00 AM	Ballroom
Castellano, Janna	Metabolic Demand of a Kettlebell Workout Routine	Bacharach, David	9:00 AM	Ballroom
Chalupsky, Curtis	Travel Behaviors of Elders and People with Disability	Woldeamanuel, Mintesnot	2:00 PM	Ballroom
Chaulagain, Sagar	Production of Cellulosic Ethanol	Sreerama, Lakshmaiah	2:00 PM	Ballroom
Chen, Feng	Electric Magnetic Simulation Tool	Zheng, Yi; Goergen, Joel	9:00 AM	Ballroom
Cheng, Shiang Kai	Development of gas chromatography mass spectrometry, liquid chromatography mass spectrometry and high performance liquid chromatography methods for the detection of ethylene glycol ethers	Sreerama, Lakshmaiah	9:00 AM	Ballroom
Cheng, Shu Hui	Sauk River Assessment	Kasi, Balasubramania n	11:40 AM	Glacier North
Chong, Pik Kuan	The Riveting Adventures of Peer Paired Tutorials in Outer Space	Mohrbacher, Carol	11:20 AM	Voyageurs South
Condon, Michael	Computer Forensics: Data Retrieval Methodologies	Schmidt, Mark	5:20 PM	Glacier South

STUDENT PRESENTER INDEX

Student Presenter	Project Title	Sponsor(s)	Time	Room
Conroy, Kathryn	Systematics and Ecology of Thalassionema, an Important Oceanic Primary Producer and Ecological Indicator	Julius, Matthew	4:00 PM	Ballroom
Coss, David	On a Proposed Solution to the Continuum Problem	Walk, Stephen	11:00 AM	Glacier North
Coyer, Sarah	Social Norms: Reducing High-Risk Drinking Among On-Campus Students	Reff, Robert	9:00 AM	Ballroom
Criswell, Rebekah	Effects of a Lipid Depleted Food Source on Daphnia Magna Life Cycles	Rose, Charles	2:00 PM	Ballroom
Crookston, Carina	Goniothalamin Analogues Incorporating Alpha-Methylene Lactones	Mechelke, Mark	9:00 AM	Ballroom
Dahl, Jason	The St. Cloud Community's Inclination Towards Modal Switch	Woldeamanuel, Mintesnot	2:00 PM	Ballroom
Dangol, Sabina	Hard Drive Analysis	Schmidt, Mark	5:00 PM	Glacier South
Das, Debjani	Anti-Discrimination at Work and the Tata Group of Companies: A Case Study	Schmidt, Mark	9:50 AM	Cascade
Das, Debjani	A Proposed Study and Analysis of User Perceptions of Biometric Acceptance	Schmidt, Mark	11:20 AM	Voyageurs North
Dauphin, Stephanie	Stearns County Fall Assessment	Lenz, Brenda; Zelenak, Mary	9:00 AM	Ballroom
Deans, Carrie	The Impact of Stoichiometry on Competitive Interactions in a Detritus-Based Stream Invertebrate Community	Voelz, Neal	9:00 AM	Ballroom
Degenhardt, Kristi	Speech-Language Pathologists' Perceptions of Employer Emphasis on Health and Wellness	Whites, Margery	9:00 AM	Ballroom
Deuermeyer, Hank	Synthesis and Characterization of Perylenetetracarboxdiimides	Lidberg, Russell; Neu, Donald	2:00 PM	Ballroom
Deve, Kudakwashe	Emergency Rescue Response Locator System	Yao, Aiping	4:00 PM	Ballroom
DeWald, Eric	Reading Graphic Novels: Effects of Media on Comprehension	Valdes, Leslie; Chisholm, Bradley	9:00 AM	Ballroom
Dwyer, Cory	Sociology of Work	Greider, Paul	11:00 AM	Granite
Eannelli, Michael	Rural Minnesota Pharmacy Viability	Grossman, Philip	3:00 PM	Glacier North
Edin, Jennifer	Fraternal Organizations and Their Disability Related Programs	Hotz, John	9:00 AM	Ballroom
Eisenschenk, Glen	Investigation of Nitration Reactions for Organic Chemistry 1 Laboratory	Leenay, Tamara	9:00 AM	Ballroom
Eisenstadt, Alicia	Looking Beyond the Notes: A Music Research and Performance Colloquium	Moore, Albert; Vermillion, Terry; Fuller, Stephen; Smale, Marcelyn; Wilhite, Carmen	8:00 PM	Ruth Gant Recital Hall Room 230, Performing Arts Center

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Student Presenter	Project Title	Sponsor(s)	Time	Room
Engelking, Jarred	Enantioselective Synthesis of trans-2,5-disubstituted pyrrolidines	Mechelke, Mark	4:00 PM	Ballroom
Enninga, Melissa	What Should be Done to Decrease Frog Deformation	Simpson, Patricia	2:00 PM	Ballroom
Ertelt, Katie	Janus Tyrosine Kinase 3 Inhibitor WHI-P131 Induces T-Regulatory-Type Immune Response in NOD Mice	Cetkovic-Cvrlje, Marina	9:30 AM	Cascade
Ertelt, Katie	Analysis of Immune Cell Differentiation Due To JAK-3 Kinase Inhibition Using Flow Cytometry	Cetkovic-Cvrlje, Marina	2:00 PM	Ballroom
Ertelt, Katie	Flow Cytometric Analysis of NOD/LtJ and C57BL/6 Mouse Splenocytes	Cetkovic-Cvrlje, Marina	2:00 PM	Ballroom
Ertelt, Katie	Immunophenotyping of Cultured NOD Mouse T-cells by Flow Cytometry	Cetkovic-Cvrlje, Marina	2:00 PM	Ballroom
Faidley, Kristen	Sociology of Work	Greider, Paul	11:00 AM	Granite
Faidley, Kristen	Humane Society Community Awareness	Havir, Linda	4:00 PM	Ballroom
Faidley, Kristen	The Recruitment and Selection Process of a Director of Human Resources	Davis, Elaine	4:00 PM	Ballroom
Fineday, Rebekah	Wright County Fall Risk Assessment	Lenz, Brenda; Morrison-Sandberg, Leslie	2:00 PM	Ballroom
Finley, Amanda	Teaching Group Work in Counselor Education Programs: The Importance of Screening	Livingston, Tina	2:00 PM	Ballroom
Flaherty, Brenna	Speech-Language Pathologists' Perceptions of Employer Emphasis on Health and Wellness	Whites, Margery	9:00 AM	Ballroom
Flores, Julia	Tendency to Pickup Money	Illies, Jody	9:00 AM	Ballroom
Flynn, Erin	Mille Lacs County Sexual Education Curriculum	Lenz, Brenda; Morrison-Sandberg, Leslie	4:00 PM	Ballroom
Fonken, Gael	Writing Somali in Osmanya: Language Policy, Literacy and Identity	Salk, Janet	5:00 PM	Voyageurs North
Ford, Ashlee	The Influence of a POWER /BALANCE Hologram on Single Leg Standing Balance	Bacharach, David	9:00 AM	Ballroom
Forsman, Jenifer	Design and Construction of Electrical Vehicle	Vogt, Timothy	4:00 PM	Ballroom
Forster, Michael	Resources for Young Families in Meeker County	Lenz, Brenda; DeBruycker, Jo	9:00 AM	Ballroom
Free, Kelly	Electronic Paintball Sentry	Vogt, Timothy	2:00 PM	Ballroom
Fuchs, Brody	Measuring small wavelength shifts with a Spatial Heterodyne Spectrometer	Harlander, John	2:00 PM	Ballroom
Gabbert, Kristina	Safety and Security Issues for Speech-Language Pathologists on the Job	Whites, Margery	9:00 AM	Ballroom
Gacke, Jeramy	Histopathology Screening of Fish Populations	Schoenfuss, Heiko	2:00 PM	Ballroom

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Student Presenter	Project Title	Sponsor(s)	Time	Room
Galoff, Megen	A Meteorological Performance Comparison of CSU-CHILL Radar New and Old Antennas	Kubesh, Rodney	9:00 AM	Ballroom
Ganser, Carolyn	Resources for Young Families in Meeker County	Lenz, Brenda; DeBruycker, Jo	9:00 AM	Ballroom
Gartei, Marion	Travel Behaviors of Elders and People with Disability	Woldeamanuel, Mintesnot	2:00 PM	Ballroom
Gazal, Akinfolarin	Liquid crystals tell temperatures - A physics and computer science project	Liu, Zengqiang	9:00 AM	Ballroom
George, Marisa	Stearns County German: Andreas Job's Life in Oak Township	Mueller, Isolde	9:10 AM	Glacier South
Gerads, Christopher	Mode Choice characteristics of University Students	Woldeamanuel, Mintesnot	2:00 PM	Ballroom
Geyer, Courtney	Sociology of Work	Greider, Paul	11:00 AM	Granite
Geyer, Courtney	Community Service Learning Project: Independence Center	Greider, Paul	3:50 PM	Glacier South
Ghate, Ketaki	Janus Tyrosine Kinase 3 Inhibitor WHI-P131 Induces T-Regulatory-Type Immune Response in NOD Mice	Cetkovic-Cvrlje, Marina	9:30 AM	Cascade
Ghate, Ketaki	Analysis of Immune Cell Differentiation Due To JAK-3 Kinase Inhibition Using Flow Cytometry	Cetkovic-Cvrlje, Marina	2:00 PM	Ballroom
Ghate, Ketaki	Flow Cytometric Analysis of NOD/LtJ and C57BL/6 Mouse Splenocytes	Cetkovic-Cvrlje, Marina	2:00 PM	Ballroom
Ghate, Ketaki	Immunophenotyping of Cultured NOD Mouse T-cells by Flow Cytometry	Cetkovic-Cvrlje, Marina	2:00 PM	Ballroom
Gill, Satinderpal	Peak-To-Average Power Reduction of OFDM Signals Using Adaptive Digital Filter	Yao, Aiping	2:00 PM	Ballroom
Godding, Benjamin	Electronic Paintball Sentry	Vogt, Timothy	2:00 PM	Ballroom
Goemer, Amy	Sociology of Work	Greider, Paul	11:00 AM	Granite
Goh, Kah Yong	Janus Tyrosine Kinase 3 Inhibitor WHI-P131 Induces T-Regulatory-Type Immune Response in NOD Mice	Cetkovic-Cvrlje, Marina	9:30 AM	Cascade
Goh, Kah Yong	Flow Cytometric Analysis of NOD/LtJ and C57BL/6 Mouse Splenocytes	Cetkovic-Cvrlje, Marina	2:00 PM	Ballroom
Goh, Kah Yong	Immunophenotyping of Cultured NOD Mouse T-cells by Flow Cytometry	Cetkovic-Cvrlje, Marina	2:00 PM	Ballroom
Goh, Kah Yong	T-Cell Proliferation Conditions in Fathead Minnow	Cetkovic-Cvrlje, Marina	2:00 PM	Ballroom
Gorder, Bradley	The Effect of Ego Depletion on Biome Preferences	Jazwinski, Christine	2:00 PM	Ballroom
Goyette, Thomas	Design and Construction of Electrical Vehicle	Vogt, Timothy	4:00 PM	Ballroom
Greene, Alexander	Factors Affecting Retention of SCSU Students	Robinson, David	8:20 AM	Voyageurs North

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Student Presenter	Project Title	Sponsor(s)	Time	Room
Grulke, Jerisa	An Assessment of Sexuality Education	Lenz, Brenda; Warner, Susan	9:00 AM	Ballroom
Guenther, Casandra	Bicycle Rack Lifting Mechanism	Covey, Steven	4:30 PM	Voyageurs North
Guragain, Rekha	Live Forensics	Schmidt, Mark	6:00 PM	Glacier South
Gurung, Kushal	Characterization of Algae Overgrowth Using Water Sampling and Geographic Information System	Rose, Charles	9:00 AM	Ballroom
Gutknecht, Zachrie	Kinzer Creek Stream Quality Analysis	Bender, Michner	4:00 PM	Ballroom
Gyawaly, Anu	Sociology of Work	Greider, Paul	11:00 AM	Granite
Haberman, Melissa	Mommy Wars: A Lose-Lose Situation for Mothers in Modern Society	Freilinger, Rebecca; Pickens, Alexandra	4:00 PM	Glacier North
Hagel, Matthew	Meteorological Autonomous Aircraft	Petzold, Mark	2:00 PM	Ballroom
Hagestuen, Christopher	MK57 Virtual Fit Check	Baliga, Ben	8:00 AM	Voyageurs South
Hammell, Tristan	Individual Differences in Internet Usage	Buswell, Brenda	4:00 PM	Ballroom
Hansen, Malinda	Video Field Selection Errors When Measuring Collegiate Volleyball Jump Heights	Bacharach, David	9:00 AM	Ballroom
Harter, Joseph	Liquid crystals tell temperatures - A physics and computer science project	Liu, Zengqiang	9:00 AM	Ballroom
Hawkins, Dawn	Sediment Pond Sedimentation Analysis	Bender, Michner	4:00 PM	Ballroom
Hayman, Michael	Kinzer Creek Stream Quality Analysis	Bender, Michner	4:00 PM	Ballroom
Heikkinen, Kyle	Design and Construction of Electrical Vehicle	Vogt, Timothy	4:00 PM	Ballroom
Heimermann, Mark	The Implied Author in Comics	Barton, Matthew	11:40 AM	Voyageurs South
Heintzeman, Colin	The St. Cloud Community's Inclination Towards Modal Switch	Woldeamanuel, Mintesnot	2:00 PM	Ballroom
Helm, Renee	SCSU Survey	Frank, Stephen; Wagner, Steven; Hammes, Michelle; Robinson, David; Zerbib, Sandrine	2:00 PM	Granite
Helmin, Derrek	SCSU Survey	Frank, Stephen; Wagner, Steven; Hammes, Michelle; Robinson, David; Zerbib, Sandrine	2:00 PM	Granite
Hemann, Emily	Investigation of Gal1 and Gal10 Levels in Saccharomyces cerivisiae Using Quantitative Polymerase Chain Reaction (qPCR)	Reagan, Michael	4:00 PM	Ballroom

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Student Presenter	Project Title	Sponsor(s)	Time	Room
Hemminger, Corey	BCRL Global Authentication	Guster, Dennis	8:00 AM	Cascade
Hemminger, Corey	Using Virtual Hosts	Guster, Dennis	9:00 AM	Cascade
Heydt, Rachael	Histological Assessment of Liver Samples Taken from Perfluooctane Sulfonate (PFOS) Exposed Bluegill Sunfish (Lepomis macrochirus)	Schoenfuss, Heiko	2:20 PM	Voyageurs South
Hillukka, Gary	Educational Experimentation System for Ultrasound Vibrometry and Vibro-Acoustography	Zheng, Yi	2:00 PM	Ballroom
Hilsgen, Heather	Assessment Practices of School-Based Speech-Language Pathologists in Minnesota	Devers, Monica	4:00 PM	Ballroom
Hoffer, Jeannette	Sim River	Julius, Matthew	2:00 PM	Ballroom
Hoffman, Katie	Fredric Jameson and Postmodernism	Dorn, Judith	9:30 AM	Glacier North
Hoffman, Rebecca	Peer Mediation as an Approach to Combat Adolescent Conflict in Schools	Mayhew, Michael	8:40 AM	Voyageurs South
Hogan, Tyler	Looking Beyond the Notes: A Music Research and Performance Colloquium	Moore, Albert; Vermillion, Terry; Fuller, Stephen; Smale, Marcelyn; Wilhite, Carmen	8:00 PM	Ruth Gant Recital Hall Room 230, Performing Arts Center
Holmseth, Joseph	Optimized Solar Power System	Hossain, Md	4:00 PM	Ballroom
Honcharoff, Amber	Speech-Language Pathologists' Participation In and Knowledge About Health/Wellness in the Workplace	Whites, Margery	9:00 AM	Ballroom
Horton, Alyssa	Sociology of Work	Greider, Paul	11:00 AM	Granite
Hou, Tian	Data Aquisition and Analysis in Computer Forensics: Acquiring an Image and Analyzing the Digital Information of a Hard Drive	Schmidt, Mark	5:40 PM	Glacier South
Hyndman, Katie	Reproductive Effects of Variable Estradiol Treatments on Male Fathead Minnows (Pimephales promelas)	Schoenfuss, Heiko	4:20 PM	Glacier North
Isaacson, Kristin	Understanding the Demographic & Psychographic Predictors of Online News Adoption: Exploring the Digital Divide in Minnesota	Ahmed, Niaz	10:30 AM	Cascade
Jacobson-Schulte, Marah	Understanding the Experience of Parents Employed at Midwestern Postsecondary Institutions	Imbra, Christine	10:30 AM	Voyageurs South
Jama, Naima	An Assessment of Sexuality Education	Lenz, Brenda; Warner, Susan	9:00 AM	Ballroom
Jangu, Neema	Understanding Third World Women: A Transnational Feminist Perspective	Mwangi, Mumbi	9:00 AM	Ballroom
Janisch, Robert	Design and Construction of Electrical Vehicle	Vogt, Timothy	4:00 PM	Ballroom
Jaspers, MaryEllen	Marked by Faith: the Rhetorical Power of Christian-based Charities	Miller, Shane	9:30 AM	Voyageurs South

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Student Presenter	Project Title	Sponsor(s)	Time	Room
Jenniges, Derrick	Determinants of Credit Supply: An Empirical Investigation	Grossman, Philip	8:40 AM	Glacier North
Jentz, Karen	The Bilingual Dance: Factors that Contribute to the Language Choice of Bilingual Mothers	Palm, Glen	4:00 PM	Ballroom
Jeppesen, Dane	Liquid crystals tell temperatures - A physics and computer science project	Liu, Zengqiang	9:00 AM	Ballroom
Jeyachandran, Rebecca	Sociology of Work	Greider, Paul	11:00 AM	Granite
Jeyachandran, Rebecca	Immigrant Workers	Greider, Paul	3:00 PM	Glacier South
John, Ashley	Resources for Young Families in Meeker County	Lenz, Brenda; DeBruycker, Jo	9:00 AM	Ballroom
Johnke, Andrea	Wright County Fall Risk Assessment	Lenz, Brenda; Morrison-Sandberg, Leslie	2:00 PM	Ballroom
Johnson, Ben	The Current Economic Condition and Its Effect on SCSU	Polacco, Alexander	4:00 PM	Ballroom
Johnson, Hannah	Resources for Young Families in Meeker County	Lenz, Brenda; DeBruycker, Jo	9:00 AM	Ballroom
Johnson, Nathan	Hydrogen/Gasoline Hybrid System	Zhao, Yongli; Miller, Kenneth	11:00 AM	Voyageurs North
Johnson, Rebecca	Mille Lacs County Sexual Education Curriculum	Lenz, Brenda; Morrison-Sandberg, Leslie	4:00 PM	Ballroom
Johnson, Samuel	Instrumentation and Calibration of Track and Field Starting Blocks for the Measurement of Kinetic Data	Bacharach, David; Street, Glenn	9:00 AM	Ballroom
Johnson, Tasha	The Effect of Self-Monitoring and Mimicry on Helping Behavior	Buswell, Brenda	4:00 PM	Ballroom
Johnstone, Lucas	Sythesis and Characterization of 5,6,11,12-tetrachlorotetracene	Lidberg, Russell; Neu, Donald	9:00 AM	Ballroom
Kampa, Kaelynn	SCSU Survey	Frank, Stephen; Wagner, Steven; Hammes, Michelle; Robinson, David; Zerbib, Sandrine	2:00 PM	Granite
Kane, Rahul	Characterizing Toxoplasma Gondii Protein TgCYC2 80.m03971	Kvaal, Christopher	2:40 PM	Glacier South
Karsten, Keith	SCSU Survey	Frank, Stephen; Wagner, Steven; Hammes, Michelle; Robinson, David; Zerbib, Sandrine	2:00 PM	Granite

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Student Presenter	Project Title	Sponsor(s)	Time	Room
Karsten, Keith	Effect of Question Order and Response Order in SCSU Spring 2008 Student Survey	Frank, Stephen; Wagner, Steven; Hammes, Michelle; Robinson, David; Zerbib, Sandrine	3:30 PM	Glacier North
Kees, Ryan	High Speed Product Sweep	Byun, Jeongmin	4:00 PM	Ballroom
Khan, Aneeqa	Hard Drive Analysis	Schmidt, Mark	5:00 PM	Glacier South
Khan, Niveen	Optimized Solar Power System	Hossain, Md	4:00 PM	Ballroom
Khanal, Abinash	Optimization of Production Input to Streamline Excess Component Inventory in an Assembly Line	Shah, Hiral	2:00 PM	Voyageurs South
Klepetar, Adam	Emotional Intelligence in Higher Education	Mills, Michael	10:10 AM	Voyageurs South
Klicker, Karin	Emily Dickinson: A Study in Psychology	Dorn, Judith	12:00 PM	Voyageurs South
Klint, Karl	To Tutor Before Teaching: Dispelling Myths Surrounding English Graduate Assistantships	Mohrbacher, Carol	9:50 AM	Glacier North
Kloss, Melissa	Self-Handicapping as a Function of Implicit Theory and Achievement Goal Motivation in Females	Buswell, Brenda	4:00 PM	Ballroom
Knutson, Lacy	Teaching Functional Communication to an Adult with Developmental Disabilities	Schulze, Kimberly	9:00 AM	Ballroom
Knutson, Lindsay	Safety and Security Issues for Speech-Language Pathologists on the Job	Whites, Margery	9:00 AM	Ballroom
Kohl, Heather	Stearns County Fall Assessment	Lenz, Brenda; Zelenak, Mary	9:00 AM	Ballroom
Kommer, Cathrine	An Assessment of Sexuality Education	Lenz, Brenda; Warner, Susan	9:00 AM	Ballroom
Konkel, Christopher	Reading Graphic Novels: Effects of Media on Comprehension	Valdes, Leslie; Chisholm, Bradley	9:00 AM	Ballroom
Koon, Dustin	Acoustic Analysis of Three NAE Vowels by Native Minnesotans	Koffi, Ettien	10:30 AM	Glacier North
Kordosky, Jordan	MVP Voting	Grossman, Philip	2:20 PM	Glacier North
Kowalski, Amanda	Sociology of Work	Greider, Paul	11:00 AM	Granite
Kowalski, Amanda	Humane Society Community Awareness	Havir, Linda	4:00 PM	Ballroom
Krause, Karla	Sociosemantics and Book Clubs	Koffi, Ettien	8:20 AM	Cascade
Kraushaar, Scott	Aspects of the Role of Winter Weather Pertaining to Vehicle Crashes in Saint Cloud, MN from 1998 to 2009	Wixon, Lewis	8:40 AM	Voyageurs North
Kreidermacher, Robert	The Current Economic Condition and Its Effect on SCSU	Polacco, Alexander	4:00 PM	Ballroom
Kristine, Turner	Obesity In High School Kids	Simpson, Patricia	4:00 PM	Ballroom

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Student Presenter	Project Title	Sponsor(s)	Time	Room
Kuschke, April	The Influence of a POWER /BALANCE Hologram on Single Leg Standing Balance	Bacharach, David	9:00 AM	Ballroom
Kuznia, Jodi	Emotional Intelligence in Higher Education	Mills, Michael	10:10 AM	Voyageurs South
Lallemont, Mark	Smart Vending Machine	Glazos, Michael	9:00 AM	Ballroom
Lamb, Katherine	Facilitating Social Skills using Voice Output Devices in a Child with ASD and Anxiety	Estrem, Theresa	2:00 PM	Ballroom
Lamb, Katherine	Hearing Loss in Musicians: The Need for a Hearing Health Program at St. Cloud State University	Nelson Crowell, Rebecca	2:00 PM	Ballroom
Langager, Matthew	Spatial Characteristics of Mortgage Foreclosures in Sherburne County Minnesota from 2006 to 2008	Wixon, Lewis	4:00 PM	Ballroom
Langner, Jennifer	Stearns County Fall Assessment	Lenz, Brenda; Zelenak, Mary	9:00 AM	Ballroom
Langworthy, Casey	An Assessment of Sexuality Education	Lenz, Brenda; Warner, Susan	9:00 AM	Ballroom
Larson, Benjamin	Sociology of Work	Greider, Paul	11:00 AM	Granite
Law, Chin Yew	Improve Production with Lean Six-Sigma	Baliga, Ben	8:00 AM	Voyageurs North
Law, Chin Yew	Optimizing Work in Process in the Stamping Area of an Assembly Plant	Shah, Hiral	9:00 AM	Voyageurs North
Le, Thu	The Relationship Between Technology Innovativeness and Consumers' Characteristics with Online Banking Adoption	Grossman, Philip	8:20 AM	Glacier North
Lee, Desiree	Meteorological Autonomous Aircraft	Petzold, Mark	2:00 PM	Ballroom
Leet, Jason	Fluorescence Life Time Study of Tetracene Single Crystal	Dvorak, Michael; Lidberg, Russell	9:30 AM	Voyageurs North
Leichtnam, Paige	The Influence of Grandparents on College Students	Devoe, Marlene	9:00 AM	Ballroom
Leichtnam, Paige	Self and Society	Greider, Paul	2:00 PM	Mississippi
Liang, Jing	High Speed Product Sweep	Byun, Jeongmin	4:00 PM	Ballroom
Lieser, Elizabeth Ann	Applied Structural Genomics	Jacobson, Bruce	4:00 PM	Ballroom
Lin, Jiangli	Reverberation and Uncertainty of Vibro-Acoustograhy	Zheng, Yi	9:00 AM	Ballroom
Lindfors, Jeanette	Investigation of Multiple Fingerprinting Methods to discriminate between Bacillus cereus group I bacteria	Gulrud, Kristin; Schrank, Gordon	9:00 AM	Ballroom
Lindstrom, Sheila	Grandma's Still Special	Havir, Linda	4:00 PM	Ballroom
Liu, Liangnan	An Introduction to Orthogonal Frequency Division Multiplexing (OFDM)	Yao, Aiping	4:00 PM	Ballroom
Liu, Yu	Finite Element Simulation for Ultrasound Vibrometry and Wave Propagation in Anisotropic Biological Tissue	Zheng, Yi	9:00 AM	Ballroom

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Student Presenter	Project Title	Sponsor(s)	Time	Room
Lohrman, Jessica	Sythesis and Characterization of 5,6,11,12-tetrachlorotetracene	Lidberg, Russell; Neu, Donald	9:00 AM	Ballroom
Lukkes, William	Atomic Force Microscope Imaging	Schrank, Gordon	9:00 AM	Ballroom
Lundgren, Naomi	Populist Politics in the St Cloud German Immigrant Communitiy, 1890's	Mueller, Isolde	9:30 AM	Glacier South
Lynch, Trevor	SCSU Survey Feeling Thermometer	Frank, Stephen; Wagner, Steven; Hammes, Michelle; Robinson, David; Zerbib, Sandrine	9:00 AM	Ballroom
Lynch, Trevor	SCSU Survey	Frank, Stephen; Wagner, Steven; Hammes, Michelle; Robinson, David; Zerbib, Sandrine	2:00 PM	Granite
Maher, Michael	Janus Tyrosine Kinase 3 Inhibitor WHI-P131 Induces T-Regulatory-Type Immune Response in NOD Mice	Cetkovic-Cvrlje, Marina	9:30 AM	Cascade
Maher, Michael	From Synthesis to Chemoprevention: Application of Novel Goniothalamin Analogues On MCF-7 Cells For Assessment of Cytotoxicity	Mechelke, Mark; Olson, Brian	11:00 AM	Cascade
Maher, Michael	Analysis of Immune Cell Differentiation Due To JAK-3 Kinase Inhibition Using Flow Cytometry	Cetkovic-Cvrlje, Marina	2:00 PM	Ballroom
Maher, Michael	Flow Cytometric Analysis of NOD/LtJ and C57BL/6 Mouse Splenocytes	Cetkovic-Cvrlje, Marina	2:00 PM	Ballroom
Maher, Michael	Immunophenotyping of Cultured NOD Mouse T-cells by Flow Cytometry	Cetkovic-Cvrlje, Marina	2:00 PM	Ballroom
Mahroof, Taqdees	Molecular-Basis for Anticancer Activity of Ruthenium-Benzimidazole Metal Complexes	Sreerama, Lakshmaiah	2:00 PM	Ballroom
Malla, Kailash	Finding Meaning: Graphic Novel Comprehension and Field Independence	Valdes, Leslie	9:00 AM	Ballroom
Malla, Kailash	Tendency to Pickup Money	Illies, Jody	9:00 AM	Ballroom
Mallikarjunappa, Lohit	Optimizing Work in Process in the Stamping Area of an Assembly Plant	Shah, Hiral	9:00 AM	Voyageurs North
Mandal, Ayush	Production of Cellulosic Ethanol	Sreerama, Lakshmaiah	2:00 PM	Ballroom
Mareini, Fatima	Vitamin A Deficiency: A Hidden Problem that can be Prevented by Simple Public Health Measures	Antunez, Hector	2:00 PM	Ballroom
Marripudi, Alekhya	Application of Ergonomics to Prevent Musculoskeletal Injuries at a Manufacturing Workstation	Shah, Hiral	2:40 PM	Voyageurs South

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Student Presenter	Project Title	Sponsor(s)	Time	Room
Martell, Patricia	Safety and Security Issues for Speech-Language Pathologists on the Job	Whites, Margery	9:00 AM	Ballroom
Martin, Cory	Sociology of Work	Greider, Paul	11:00 AM	Granite
Maskey, Manjit	Vanadium- Flavonoid Complexes as the Inhibitors of the Enzymes Involved in Glucose Metabolism	Sreerama, Lakshmaiah	9:00 AM	Ballroom
May, Mike	The Making of a Self-Made Man: Rock, Hope, and Bruce Springsteen	Mohrbacher, Carol	11:20 AM	Cascade
Mazour, Audra	How to Perform a Job Analysis of an Electrical Engineer	Illies, Jody	9:00 AM	Ballroom
Mboko, Wadzanai	Acute Fasting-Induced Changes in Motilin, Luteinizing Hormone and Metabolites in Castrated Goats	Gazal, Oladele	9:00 AM	Ballroom
McCarthy, Kathleen	The Changing Nature of the Field of Rehabilitation Counseling: Trends From the Past and Future Opportunities	Kuhlman, Bradley	2:00 PM	Ballroom
McDonald, James	Date of Implementation and Extent of GIS Capabilities of Minnesota Counties	Wall, David	2:00 PM	Ballroom
McGee, Meghan	The Impact of Human Contaminants on Aquatic Environments: Adverse Effects on Fish	Schoenfuss, Heiko	11:40 AM	Cascade
McGlynn, Meagan	Foreclosures and Adjustable Rate Mortgages	Grossman, Philip	6:00 PM	Glacier North
McLain, Kristin	Speech-Language Pathologists' Participation In and Knowledge About Health/Wellness in the Workplace	Whites, Margery	9:00 AM	Ballroom
McLeod, Eleanore	Looking Beyond the Notes: A Music Research and Performance Colloquium	Moore, Albert; Vermillion, Terry; Fuller, Stephen; Smale, Marcelyn; Wilhite, Carmen	8:00 PM	Ruth Gant Recital Hall Room 230, Performing Arts Center
Mendonsa, Riyan	Improving Magnetic Random Acess Memories Using Ar+ Ion Implantation	Vogt, Timothy	2:00 PM	Ballroom
Metz, Emily	Histological Assessment of Liver Samples Taken from Perfluooctane Sulfonate (PFOS) Exposed Bluegill Sunfish (Lepomis macrochirus)	Schoenfuss, Heiko	2:20 PM	Voyageurs South
Meunier, Joseph	BCRL Global Authentication	Guster, Dennis	8:00 AM	Cascade
Meunier, Joseph	Using Virtual Hosts	Guster, Dennis	9:00 AM	Cascade
Meyer, Greta	Speech-Language Pathologists' Perceptions of Employer Emphasis on Health and Wellness	Whites, Margery	9:00 AM	Ballroom
Miller, Tyler	Investigation of Multiple Fingerprinting Methods to discriminate between Bacillus cereus group I bacteria	Gulrud, Kristin; Schrank, Gordon	9:00 AM	Ballroom
Mitchell, Heather	Stearns County Fall Assessment	Lenz, Brenda; Zelenak, Mary	9:00 AM	Ballroom

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Student Presenter	Project Title	Sponsor(s)	Time	Room
Mizer, Holly	Interaction in Tax Policies Among States	Grossman, Philip	8:00 AM	Glacier North
Mohammed, Naseeruddin	High Speed Channel Modeling	Zheng, Yi; Goergen, Joel	4:00 PM	Ballroom
Morseth, Tracy	Mille Lacs County Sexual Education Curriculum	Lenz, Brenda; Morrison-Sandberg, Leslie	4:00 PM	Ballroom
Muhich, Molly	The Value of the Golden Ratio	Walk, Stephen	2:00 PM	Ballroom
Mukherjee, Debashree	Ground Bounce Analysis and Reduction	Zheng, Yi; Goergen, Joel; Tomaszewski, Peter	2:00 PM	Ballroom
Namai, Kazue	Effects of Window View at a Dormitory Setting	Jazwinski, Christine	4:00 PM	Ballroom
Nandlal, Larita	Janus Tyrosine Kinase 3 Inhibitor WHI-P131 Induces T-Regulatory-Type Immune Response in NOD Mice	Cetkovic-Cvrlje, Marina	9:30 AM	Cascade
Nandlal, Larita	Flow Cytometric Analysis of NOD/LtJ and C57BL/6 Mouse Splenocytes	Cetkovic-Cvrlje, Marina	2:00 PM	Ballroom
Nandlal, Larita	Immunophenotyping of Cultured NOD Mouse T-cells by Flow Cytometry	Cetkovic-Cvrlje, Marina	2:00 PM	Ballroom
Nandlal, Larita	The Effect of Rapamycin on Generation of the T-regulatory Cells in NOD/LtJ Mice	Cetkovic-Cvrlje, Marina	2:00 PM	Ballroom
Nde Talla, Urbain Manfred	Emergency Rescue Response Locator System	Yao, Aiping	4:00 PM	Ballroom
Nelson, Bradley	Wind Energy	Hoff, Jean	4:00 PM	Ballroom
Nelson, Cassandra	Tendency to Pickup Money	Illies, Jody	9:00 AM	Ballroom
Nelson, Heidi	SCSU Survey	Frank, Stephen; Wagner, Steven; Hammes, Michelle; Robinson, David; Zerbib, Sandrine	2:00 PM	Granite
Nelson, Hillary	An Assessment of Sexuality Education	Lenz, Brenda; Warner, Susan	9:00 AM	Ballroom
Neumann, Geraldine	Wright County Fall Risk Assessment	Lenz, Brenda; Morrison-Sandberg, Leslie	2:00 PM	Ballroom
Nicklay, Matthew	Math requirements and the popularity of the economics major: A cross-sectional study of the United States.	Rebeck, Kenneth	10:10 AM	Cascade
Niraula, Suresh	Water Quality Analysis of the Sauk River and Mississippi River Confluence	Bender, Michner	2:00 PM	Ballroom

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Student Presenter	Project Title	Sponsor(s)	Time	Room
Nomeland, Beth	Investigation of Gal1 and Gal10 Levels in Saccharomyces cerivisiae Using Quantitative Polymerase Chain Reaction (qPCR)	Reagan, Michael	4:00 PM	Ballroom
Nwachukwu, Chudy	Impact of Electroporation Technology on Fight Against Cancer	Zheng, Yi	9:00 AM	Ballroom
Ogle, Sharon	Wright County Fall Risk Assessment	Lenz, Brenda; Morrison-Sandberg, Leslie	2:00 PM	Ballroom
O'Hara, Kaye	Safety and Security Issues for Speech-Language Pathologists on the Job	Whites, Margery	9:00 AM	Ballroom
Oliech, Nephat	Resources for Young Families in Meeker County	Lenz, Brenda; DeBruycker, Jo	9:00 AM	Ballroom
Olson, Angela	Black & White: Perceptions into the Effect of Race and Type of Aggression of Female Aggression	Buswell, Brenda	3:30 PM	Voyageurs North
Olson, Brian	Sociology of Work	Greider, Paul	11:00 AM	Granite
Olson, Emily	A Distance-Cost Analysis of Hinterland Variation for Rainbow Kennels in Braham, MN, Between 1994 and 2008	Wixon, Lewis	9:00 AM	Ballroom
Olson, Marin	Janus Tyrosine Kinase 3 Inhibitor WHI-P131 Induces T-Regulatory-Type Immune Response in NOD Mice	Cetkovic-Cvrlje, Marina	9:30 AM	Cascade
Olson, Marin	Analysis of Immune Cell Differentiation Due To JAK-3 Kinase Inhibition Using Flow Cytometry	Cetkovic-Cvrlje, Marina	2:00 PM	Ballroom
Olson, Marin	Flow Cytometric Analysis of Cell Death Induced by WHI-P131 and Rapamycin in Cultured T-cells of NOD Mice	Cetkovic-Cvrlje, Marina	2:00 PM	Ballroom
Olson, Marin	Flow Cytometric Analysis of NOD/LtJ and C57BL/6 Mouse Splenocytes	Cetkovic-Cvrlje, Marina	2:00 PM	Ballroom
Olson, Marin	Immunophenotyping of Cultured NOD Mouse T-cells by Flow Cytometry	Cetkovic-Cvrlje, Marina	2:00 PM	Ballroom
Ong, Ta Ren	Modulation of human liver aldehyde dehydrogenase (ALDH3A1 and ALDH9A1) activity by glyoxal and methylglyoxal may lead to non-alcoholic steatohepatitis (NASH) and diabetes	Sreerama, Lakshmaiah	9:00 AM	Ballroom
Owen, Erin	US Patriot Act- Brain Draining the US Intellectual Capital	Hassan, Aref	4:30 PM	Glacier South
Paavola, Ryan	The St. Cloud Community's Inclination Towards Modal Switch	Woldeamanuel, Mintesnot	2:00 PM	Ballroom
Palokangas, Preston	Sociology of Work	Greider, Paul	11:00 AM	Granite
Palokangas, Preston	Self and Society	Greider, Paul	2:00 PM	Mississippi
Patridge, Margaret	Becoming Global: A Study In Intercultural Competence	Robinson, James	2:00 PM	Ballroom
Pechonick, Tami	Sociology of Work	Greider, Paul	11:00 AM	Granite

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Student Presenter	Project Title	Sponsor(s)	Time	Room
Pechonick, Tami	Self and Society	Greider, Paul	2:00 PM	Mississippi
Pederson, Nicholas	Hydrogen/Gasoline Hybrid System	Zhao, Yongli; Miller, Kenneth	11:00 AM	Voyageurs North
Perbix, Lisa	Language Acquisition at a St Cloud Chinese Immersion School	Koffi, Ettien	10:10 AM	Glacier North
Petersen, Lucas	The German Language in Central Minnesota	Mueller, Isolde	9:50 AM	Glacier South
Peterson, David	An Analysis of Terminated Propane Customers: A Case Study of Range Bottle Gas, Coleraine, MN, 2007-2009	Wixon, Lewis	2:00 PM	Ballroom
Peterson, Mandy	Travel Behaviors of Elders and People with Disability	Woldeamanuel, Mintesnot	2:00 PM	Ballroom
Peterson, Yusan	Defective Shotshell Recycling System	Bekkala, Andrew	3:50 PM	Voyageurs North
Phelps, Scott	Mode Choice characteristics of University Students	Woldeamanuel, Mintesnot	2:00 PM	Ballroom
Philippe, Jonathan	Optimization of Production Input to Streamline Excess Component Inventory in an Assembly Line	Shah, Hiral	2:00 PM	Voyageurs South
Phuyal, Biswaraj	Optimization of Production Input to Streamline Excess Component Inventory in an Assembly Line	Shah, Hiral	2:00 PM	Voyageurs South
Poganski, Beth	Histological Investigation of the Biological Effects of Endocrine Disrupting Pollution in Minnesota Lakes	Schoenfuss, Heiko	9:00 AM	Ballroom
Poudel, Sumeet	Flow Cytometric Analysis of NOD/LtJ and C57BL/6 Mouse Splenocytes	Cetkovic-Cvrlje, Marina	2:00 PM	Ballroom
Poudel, Sumeet	T-Cell Proliferation Conditions in Fathead Minnow	Cetkovic-Cvrlje, Marina	2:00 PM	Ballroom
Pradhananga, Amit	E. coli loading of water and sediment in the Sauk River, Minnesota	Bender, Michner	8:40 AM	Cascade
Quek, Yi Lin	Improve Production with Lean Six-Sigma	Baliga, Ben	8:00 AM	Voyageurs North
Quek, Yi Lin	Ergonomic Redesign and Evaluation of a Workstation to Reduce Worker Injuries	Shah, Hiral	10:10 AM	Voyageurs North
Ramdas, Goutham	Defense & Combat Systems-An Insight into 21st Century Warfare	Nicholson, James	11:00 AM	Little Theatre
Rassier, Shannon	Stearns County Fall Assessment	Lenz, Brenda; Zelenak, Mary	9:00 AM	Ballroom
Reginek, Jamison	Biochemical Oxygen Demand Analysis of the Sauk and Mississippi Rivers	Bender, Michner	4:00 PM	Ballroom
Reichl, Melissa	Southside University Neighborhood Revitalization	Rigopoulou-Melcher, Aspasia	2:00 PM	Ballroom
Reinhart, Jeffrey	Trends in Water Quality in Minnesota and Quetico Lakes	Rose, Charles	2:00 PM	Ballroom

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Student Presenter	Project Title	Sponsor(s)	Time	Room
Relph, Dana	Fluorescence Life Time Study of Tetracene Single Crystal	Dvorak, Michael; Lidberg, Russell	9:30 AM	Voyageurs North
Rescigno, Emilio	Design and Construction of Electrical Vehicle	Vogt, Timothy	4:00 PM	Ballroom
Ringler, Sarah	An Assessment of Sexuality Education	Lenz, Brenda; Warner, Susan	9:00 AM	Ballroom
Roberts, Nicole	Social Norms: Reducing High-Risk Drinking Among On-Campus Students	Reff, Robert	9:00 AM	Ballroom
Roe, Stephanie	N-Heterocyclic Carbene-Supported Catalysts in the Polymerization of Cyclic Esters	Schaller, Chris	4:00 PM	Ballroom
Rogers, Jacob	1096 Rhineland Persecutions: Inhumane Economics	Mueller, Isolde	10:30 AM	Glacier South
Rooney, Anna	The Necessity of Music Education	Verrilli, Catherine	8:20 AM	Voyageurs South
Ruchko, Olena	Immigration Stress and Marital Satisfaction	Connor, Jennifer	2:00 PM	Ballroom
Sacko, Fatimata	Liquid crystals tell temperatures - A physics and computer science project	Liu, Zengqiang	9:00 AM	Ballroom
Sanam, Sri Harsha	Ergonomic Redesign and Evaluation of a Workstation to Reduce Worker Injuries	Shah, Hiral	10:10 AM	Voyageurs North
Sanoski, Melissa	The Recruitment and Selection Process of a Director of Human Resources	Davis, Elaine	4:00 PM	Ballroom
Saucedo, Frederico	SCSU Survey	Frank, Stephen; Wagner, Steven; Hammes, Michelle; Robinson, David; Zerbib, Sandrine	2:00 PM	Granite
Scherek, Ashley	Sociology of Work	Greider, Paul	11:00 AM	Granite
Scherer, Jacob	Electronic Paintball Sentry	Vogt, Timothy	2:00 PM	Ballroom
Schmidt, Kimberly	Sociology of Work	Greider, Paul	11:00 AM	Granite
Schmit, Nicole	Sociology of Work	Greider, Paul	11:00 AM	Granite
Schmit, Nicole	Self and Society	Greider, Paul	2:00 PM	Mississippi
Schoenberg, Chris	SCSU Survey	Frank, Stephen; Wagner, Steven; Hammes, Michelle; Robinson, David; Zerbib, Sandrine	2:00 PM	Granite
Schreifels, Theresa	Parent Perception of Preschool Problem Behavior: The Role of Parent Knowledge of Child Development	Daneshpour, Manijeh	4:00 PM	Ballroom
Schroeder, Christopher	BCRL Global Authentication	Guster, Dennis	8:00 AM	Cascade

STUDENT PRESENTER INDEX

Student Presenter	Project Title	Sponsor(s)	Time	Room
Schroeder, Christopher	Using Virtual Hosts	Guster, Dennis	9:00 AM	Cascade
Schwartz, Juleena	Resources for Young Families in Meeker County	Lenz, Brenda; DeBruycker, Jo	9:00 AM	Ballroom
Scott, Lwando	Xenophobia and Capitalism in South Africa	Zuo, Jiping	9:00 AM	Ballroom
Scott, Lwando	Sociology of Work	Greider, Paul	11:00 AM	Granite
Scott, Lwando	The Disparities Between the Old and New Economy: Conversations with Senior Citizens	Greider, Paul	4:10 PM	Glacier South
Screeden, Julia	Speech-Language Pathologists' Participation In and Knowledge About Health/Wellness in the Workplace	Whites, Margery	9:00 AM	Ballroom
Seaton, Thomas	Utilization of the Miller Center: A Gender-Affordance Interaction	Jazwinski, Christine	9:00 AM	Ballroom
Seidel, Aaron	Stimulated Brillouin Scattering of Laguerre-Gaussian Beams	Bigelow, Matthew	9:00 AM	Ballroom
Seifert, Nicholas	The Riveting Adventures of Peer Paired Tutorials in Outer Space	Mohrbacher, Carol	11:20 AM	Voyageurs South
Shelton, Lisa	How to Perform a Job Analysis of an Electrical Engineer	Illies, Jody	9:00 AM	Ballroom
Sherpa, Mingmar	An Assessment of Sexuality Education	Lenz, Brenda; Warner, Susan	9:00 AM	Ballroom
Shoberg, Krista	Speech-Language Pathologists' Perceptions of Employer Emphasis on Health and Wellness	Whites, Margery	9:00 AM	Ballroom
Shrestha, Guinness	Design and Construction of Electrical Vehicle	Vogt, Timothy	4:00 PM	Ballroom
Shrestha, Ritu	An Investigation into the Scope and Prospect of Virtual Existence of Businesses in Second Life	Oyedele, Adesegun	11:20 AM	Glacier South
Shrestha, Shikha	Resources for Young Families in Meeker County	Lenz, Brenda; DeBruycker, Jo	9:00 AM	Ballroom
Simone, Jessica	Hydrogen/Gasoline Hybrid System	Zhao, Yongli; Miller, Kenneth	11:00 AM	Voyageurs North
Singh, Sophiya	Mode Choice characteristics of University Students	Woldeamanuel, Mintesnot	2:00 PM	Ballroom
Sinton, Kelly	Sociology of Work	Greider, Paul	11:00 AM	Granite
Sissoko, Oumou	Effect of Question Order and Response Order in SCSU Spring 2008 Student Survey	Frank, Stephen; Wagner, Steven; Hammes, Michelle; Robinson, David; Zerbib, Sandrine	3:30 PM	Glacier North
Soh, Steve	Hyper-stoichiometric	Bekkala, Andrew	3:50 PM	Voyageurs South
Sprengeler, Jennifer	Stearns County Fall Assessment	Lenz, Brenda; Zelenak, Mary	9:00 AM	Ballroom

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Student Presenter	Project Title	Sponsor(s)	Time	Room
Stafne, Joseph	Analysis of Nutrient Loading and Escherichia. Coli Contamination of Johnson Creek	Rose, Charles; Bender, Michner	2:00 PM	Ballroom
Stahlback, Dustin	An Introduction to Orthogonal Frequency Division Multiplexing (OFDM)	Yao, Aiping	4:00 PM	Ballroom
Stanga, Michael	Effects of Population Density and Storm Reports in Minnesota from 1985-2005	Wixon, Lewis	9:50 AM	Voyageurs North
Stein, Megan	Characteristics of People in Advertisement	Buswell, Brenda	2:00 PM	Ballroom
Steinhoff, Anna	Design and Synthesis of Novel, Acyclic Goniothalamin Analogues	Mechelke, Mark	4:00 PM	Ballroom
Stenske, Michelle	Increasing Sight-word Reading and Math Skills Using Response Repetition	Rapp, John	9:00 AM	Ballroom
Stepanek, Joshua	From micro to macro: Determining hydrodynamic properties of stalk forming pennate diatoms	Julius, Matthew	12:10 PM	Glacier South
Stillwell, Matthew	Life Stress and Task Performance	Jazwinski, Christine	9:00 AM	Ballroom
Stock, Garrett	Fouls in the National Basketball Association	Grossman, Philip	2:40 PM	Glacier North
Strand, Nathan	Patenting the Genome	Simpson, Patricia	2:00 PM	Ballroom
Swartz, Brandon	What Determines DVD Sales in the Film Industry	Grossman, Philip	5:20 PM	Glacier North
Syed, Zafrul	Liquid crystals tell temperatures - A physics and computer science project	Liu, Zengqiang	9:00 AM	Ballroom
Tamba, Massa	Sociology of Work	Greider, Paul	11:00 AM	Granite
Tan, Zheng Guan	Defective Shotshell Recycling System	Bekkala, Andrew	3:50 PM	Voyageurs North
Taraldsen, Matthew	Post Storm Survey	Hansen, Anthony; Stangl-Erkens, Suzanne	10:30 AM	Voyageurs North
Tatineni, Sushmita	Application of Ergonomics to Prevent Musculoskeletal Injuries at a Manufacturing Workstation	Shah, Hiral	2:40 PM	Voyageurs South
Tay, Yii Van	Modulation of human liver aldehyde dehydrogenase (ALDH3A1 and ALDH9A1) activity by glyoxal and methylglyoxal may lead to non-alcoholic steatohepatitis (NASH) and diabetes	Sreerama, Lakshmaiah	9:00 AM	Ballroom
Teoh, Wei Loon	High-fructose Corn Syrup (HFCS) Derived Aldehydes, Glyoxal and Methylglyoxal, Modulate Human Liver Aldehyde Dehydrogenase Activity that may Lead to Non-alcoholic Steatohepatitis (NASH) and Diabetes	Sreerama, Lakshmaiah	2:00 PM	Ballroom
Tey, Chih Hsiang	Modulation of human liver aldehyde dehydrogenase (ALDH3A1 and ALDH9A1) activity by glyoxal and methylglyoxal may lead to non-alcoholic steatohepatitis (NASH) and diabetes	Sreerama, Lakshmaiah	9:00 AM	Ballroom

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Student Presenter	Project Title	Sponsor(s)	Time	Room
Thapa, Birat	SCSU Survey	Frank, Stephen; Wagner, Steven; Hammes, Michelle; Robinson, David; Zerbib, Sandrine	2:00 PM	Granite
Thapa, Rajan	Mechanism of interaction of Alzheimer's disease drugs with aggregates of beta-amyloid peptide (AB 1-42)	Ramakrishnan, Latha	9:00 AM	Ballroom
Thielen, Katherine	The Recruitment and Selection Process of a Director of Human Resources	Davis, Elaine	4:00 PM	Ballroom
Trandem, Matthew	Optimized Solar Power System	Hossain, Md	4:00 PM	Ballroom
Traore, Mohamed	Total Synthesis and Characterisation of Two Pharmaceutically Promising, Antiviral Drug Precursors from Triterpenoid-based Natural Products	Munshi, Kalyan	2:00 PM	Ballroom
Treichel, Katherine	Safety and Security Issues for Speech-Language Pathologists on the Job	Whites, Margery	9:00 AM	Ballroom
Tulachan, Ashok	Hyper-stoichiometric	Bekkala, Andrew	3:50 PM	Voyageurs South
Tuladhar, Chungta	Stearns County Fall Assessment	Lenz, Brenda; Zelenak, Mary	9:00 AM	Ballroom
Tures, Mildred	Stearns County Fall Assessment	Lenz, Brenda; Zelenak, Mary	9:00 AM	Ballroom
Udermann, Mary	The Influence of a POWER /BALANCE Hologram on Single Leg Standing Balance	Bacharach, David	9:00 AM	Ballroom
Uphoff, John	Sprawl Report: The Case of Big Lake, Minnesota	Rigopoulou-Melcher, Aspasia	4:00 PM	Ballroom
Vanderbilt, Ann	Speech-Language Pathologists' Participation In and Knowledge About Health/Wellness in the Workplace	Whites, Margery	9:00 AM	Ballroom
VanderStoep, Jessica	Musical Experience and Language Learning	Kim, Choonkyong	4:10 PM	Voyageurs South
VanKeulen, Christopher	Defective Shotshell Recycling System	Bekkala, Andrew	3:50 PM	Voyageurs North
Varner, Kali	Wright County Fall Risk Assessment	Lenz, Brenda; Morrison-Sandberg, Leslie	2:00 PM	Ballroom
Vasil'Yeva, Maria	Effect of Question Order and Response Order in SCSU Spring 2008 Student Survey	Frank, Stephen; Wagner, Steven; Hammes, Michelle; Robinson, David; Zerbib, Sandrine	3:30 PM	Glacier North

STUDENT PRESENTER INDEX

Student Presenter	Project Title	Sponsor(s)	Time	Room
Victorson, Eric	Liquid crystals tell temperatures - A physics and computer science project	Liu, Zengqiang	9:00 AM	Ballroom
Voigt, Katie	The Current Economic Condition and Its Effect on SCSU	Polacco, Alexander	4:00 PM	Ballroom
Vouk, William	Liquid crystals tell temperatures - A physics and computer science project	Liu, Zengqiang	9:00 AM	Ballroom
Wachter, Brody	The St. Cloud Community's Inclination Towards Modal Switch	Woldeamanuel, Mintesnot	2:00 PM	Ballroom
Wachter, Toni	Speech-Language Pathologists' Participation In and Knowledge About Health/Wellness in the Workplace	Whites, Margery	9:00 AM	Ballroom
Wade-Ferrell, Jessica	The Role of Toxoplasma gondii Cell Cycle Proteins in the Perturbation of the Cell Cycle of Budding Yeast Saccharomyces Cerevisiae	Kvaal, Christopher	9:00 AM	Ballroom
Walters, Anna	Greenhouse Gases and their effect on Global Warming	Simpson, Patricia	2:00 PM	Ballroom
Wambua, Angela	Changing Christianity and the Acceptance of Relativism	Philion, Stephen	8:00 AM	Glacier South
Wambua, Angela	Self and Society	Greider, Paul	2:00 PM	Mississippi
Warner, Erik	Sociology of Work	Greider, Paul	11:00 AM	Granite
Wegwerth, Justin	An Investigation of the Microwave Extinction and Scattering Properties of Realistic Frozen Hydrometeors	Kubesh, Rodney	2:00 PM	Ballroom
Welle, Erin	Southside University Neighborhood Revitalization	Rigopoulou-Melcher, Aspasia	2:00 PM	Ballroom
Welle, Erin	The St. Cloud Community's Inclination Towards Modal Switch	Woldeamanuel, Mintesnot	2:00 PM	Ballroom
Wendland, Jessica	The Recruitment and Selection Process of a Director of Human Resources	Davis, Elaine	4:00 PM	Ballroom
Wendlandt, Kati	Extroversion and Creativity across Real-World Situations	Illies, Jody	9:00 AM	Ballroom
Wenger, Carol	Wright County Fall Risk Assessment	Lenz, Brenda; Morrison-Sandberg, Leslie	2:00 PM	Ballroom
Wenz, Donald	Synthesis, Characterization and DNA Interaction Studies of Metal Complexes Using Atomic Force Microscopy	Mahroof-Tahir, Mohammad	9:00 AM	Ballroom
Westerhoff, Susanne	Human Trafficking and the United Arab Emirates	Hassan, Aref	12:00 PM	Glacier North
Weyer, Jayme	Mille Lacs County Sexual Education Curriculum	Lenz, Brenda; Morrison-Sandberg, Leslie	4:00 PM	Ballroom
Wienhold, Mark	A Novel Short Pathway for the Semi-Synthesis of a potential Bioactive Molecule Betulone and its Analogs	Munshi, Kalyan	2:00 PM	Ballroom

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Student Presenter	Project Title	Sponsor(s)	Time	Room
Wilson, Jonathan	Design and Construction of Electrical Vehicle	Vogt, Timothy	4:00 PM	Ballroom
Woznica, Ewa	Factors Affecting Retention of SCSU Students	Robinson, David	8:20 AM	Voyageurs North
Younker, Kathleen	Heirs of Guilt: The Forgotten Victims of World War II	Mueller, Isolde	10:10 AM	Glacier South
Zeleke, Hermon	South Africa & Laos: a Comparative Study of the Methods of Eradicating Poverty	Johnson, Robert	4:10 PM	Voyageurs North
Zhong, Lansun	Looking Beyond the Notes: A Music Research and Performance Colloquium	Moore, Albert; Vermillion, Terry; Fuller, Stephen; Smale, Marcelyn; Wilhite, Carmen	8:00 PM	Ruth Gant Recital Hall Room 230, Performing Arts Center
Ziegler, David	Sediment Pond Sedimentation Analysis	Bender, Michner	4:00 PM	Ballroom
Ziegler, Frank	Advertisement Behavior of Springtime-Breeding Frogs During an Aberrantly Cold Spring	Cook, William	2:20 PM	Glacier South

Session A-C | **Paper Competition-1** | **Cascade**

BCRL Global Authentication

The advent of distributed processing and global information systems has driven the need for fast, efficient and secure global authentication systems. Typically distributed processing implies that any given application will require computing resources from multiple computing nodes, and hence for the sake of convenience will require single sign-on capability for the end-user. The user database to support this global authentication process, because it encompasses all hosts in a domain is a prime attack target and requires substantial resources if it is to be adequately protected. To illustrate these concepts a case study was used in which the characteristics of a computing domain were described in detail and the conversion process of this domain from a simple NIS global authentication system to an extremely robust LDAP/Kerberos system was discussed. It was determined that the added complexity and extra work required to implement the LDAP/Kerberos system was well worthwhile due to the vast increase in robustness and scalability observed. Further, this task was carried out at the same time the production hosts were converted from individual physical hosts to virtual machines to provide a "greener" computing environment. Even though this conversion added to the workload the fact that both process were both starting from scratch made it easy to coordinate the needed linkages between the two.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Schroeder, Christopher; Meunier, Joseph; Hemminger, Corey	Guster, Dennis	Business Computer Information Systems

Sociosemantics and Book Clubs

Several sociolinguists (Koffi, 2008; Anderson and Edison 2006; Wardough, 2006) have identified education, class, race, gender, age and vocation as contributing factors in lexical knowledge. Education, in particular, has had a significant effect on the vocabulary one possesses. It is typical to find that individuals who have attained higher levels of education contain comparatively larger lexicons than those with less education. However, the research does not provide for the effect of book club membership on vocabulary knowledge. While answering the questions this gap raises, I have made an argument that book club membership does indeed have a relationship with vocabulary. The support of the argument involves a close look at both education and book club membership. The combination of these two independent variables helps to prove that book club membership may be a more causative factor than education alone. In making a case for the value of book clubs in the ESL setting, I have established that plentiful amounts of reading together with discussion about that reading is the key to enhancing one's lexicon.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Krause, Karla	Koffi, Ettien	English

E. coli loading of water and sediment in the Sauk River, Minnesota

Escherichia coli (E. coli) is a member of the fecal coliform group of bacteria that inhabit the gastrointestinal tract of humans and other warm blooded animals and is associated with various diseases like meningitis, sepsis, and gastroenteritis. E. coli may be released to water bodies through leaking septic systems, feedlot runoff and manure application to fields. While much work has been done to study E. coli loading in water and the sources of E. coli found in water, the relationship between E. coli loading of water and sediment has not been studied extensively. The purpose of this study is to determine if there is a relationship between E. coli loading of water and sediment in the Sauk River in central Minnesota. Water samples were collected in triplicate from 17 different sites along the Sauk River once a month from April to September 2008, while sediment samples were collected in triplicate from three sites once a month from April to September 2008. Water samples were analyzed for E. coli using EPA approved membrane filtration technique. Sediment samples were analyzed for E. coli using multiple tube fermentation technique and enumerated using most probable number (MPN) method. In addition to bacterial analysis, the samples were also analyzed for nutrients (nitrate, phosphorus, and ammonia), pH, conductivity, and suspended and total solids. E.coli data will be statistically analyzed to determine the relationship between E. coli loading in water and sediment in the Sauk River.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Pradhananga, Amit	Bender, Michner	Environmental and Technological Studies

Using Virtual Hosts

The advent of distributed processing has drastically increased the number of hosts required to support an enterprise level computing domain. Often, each application such as accounting, DNS or WWW service is allocated its own dedicated host for performance and security reasons. While this scenario is effective from an enterprise computing perspective, it poses several disadvantages. These disadvantages include: high hardware cost, significant 110 volt power consumption, significant cooling costs and a complex computing environment to manage. To combat these disadvantages the concept of virtual hosts has been suggested. This paper explores, through a case study, how virtualization could be employed in a live computing domain to reduce the number of physical host by a factor of 9 while still maintaining adequate performance and security metrics.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Schroeder, Christopher; Meunier, Joseph; Hemminger, Corey	Guster, Dennis	Business Computer Information Systems

Session A-GN **Economics-1** **Glacier North**

Interaction in Tax Policies Among States

Using a spatial autoregressive parameter, this paper tests the reaction of a state tax rate when there are changes in tax rates among states geographically or economically similar (neighbors). I am going to use cross-sectional data from the 48 continental states and the District of Columbia to determine the impact in state policies. Using Ordinary Least Squares Regression, the spatial autoregressive parameter will be tested for a positive sign, indicating the states do have interaction. Weighted matrices will be used to account for states that are neighbors. Interaction in tax policies among states that are neighbors can result in inefficient quantities of goods provided by the government.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Mizer, Holly	Grossman, Philip	Economics

The Relationship Between Technology Innovativeness and Consumers' Characteristics with Online Banking Adoption

This research explores the relationships between consumers' personal characteristics, their efficiency and attitudes on using the internet and e-banking adoption. Based on a national survey of consumer choice conducted by Princeton Survey Research Associates International in 2007, the research quantifies the factors affecting the acceptance of e-banking by U.S. consumers. Respondents were surveyed about their efficiency level, intensity level and comfort level in processing information on the internet. They were also surveyed about how they use the internet. Consumers' adoption of e-banking is classified as: (1) "not using," (2) "use but not daily" and (3) "use daily." Result could be helpful in speeding the adoption of e-banking, resulting in a savings of operating cost for banks.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Le, Thu	Grossman, Philip	Economics

Determinants of Credit Supply: An Empirical Investigation

This paper investigates the factors affecting the change in domestic commercial and industrial loans extended by U.S. banks for the period 1988-2008. A model consisting of bank risk, the price level, international interest rates and the status and growth of the domestic economy is used to measure percent changes on the supply side of domestic bank credit. Bank risk should have an inverse relationship with bank credit while international interest rates, growth and the status of the economy should result in a positive relationship. Bank risk will be measured by the percent change in the banking system's net charge off to asset ratio; where net charge offs are defined as the loans charged off as losses minus any recoveries on loans previously charged off. The percent change in Gross Domestic Product will be the indicator for economic growth. International interest rates will be calculated as percent changes in the London Interbank Offered Rate, which is a strong indicator of the level of interest rates abroad. This measure will quantify the price of using foreign credit sources as a substitute to domestic credit. The domestic price level will quantify the cost of domestic credit and will be measured by percent changes in the Consumer Price Index. The status of the economy will be calculated by the percent change in the spread between 5-year Treasury Bonds and 6-month Treasury Bills. A tightening of commercial and industrial loans, indicated by a decrease in the ability of firms to obtain credit, has been shown to occur throughout recent recessionary periods. This paper seeks to identify the correlation between macroeconomic condition indicators and the supply of domestic commercial and industrial credit by the U.S. banking system.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Jenniges, Derrick	Grossman, Philip	Economics

Lottery Ticket Consumption

Results are presented that the bulk sale of lottery tickets is not dominated by citizens of the poverty level or lower and has little to do with income, education, or social status. Evidence will also be presented that higher state lottery revenues do not lead to higher crime rates. We will lastly look results for what states have the best and worst characteristics for achieving high state lottery revenues. These characteristics will consist of things like population density, age, sex, race, income, poverty level, etc. This will all be done through multiple regressions. The variables and data we will be using will be taken from the US Census Bureau's Statistical Abstract and from lottery strategies.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Best, Thomas	Grossman, Philip	Economics

Session A-GS **Contending Sociological Perspectives on Religion's Changing Significance** **Glacier South**

Changing Christianity and the Acceptance of Relativism

This paper analyzes how Capitalism has changed people's interpretation of God based beliefs with regard to what is acceptable, sacred or profane and how this has changed throughout history. This will require a review of biblical and American history; generally discussing how the transition to capitalism has shaped how Christianity has dealt with social change and how it has led up to current views of sacred and profane. I then drop down a level after my general analysis to how this topic reveals itself locally. I compare Christian churches in St Cloud to find out the differences between them on contentious social issues based upon questions that I will ask regarding the state of our society today.

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

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

Churches, Beliefs, Expansion: A Comparison of How the Spread of Capitalism Impacted Tribalistic Cultures in Europe and on Turtle Island

The main focus of my paper is the relationship between Catholics and the reformation and the effects of capitalism. Moreover, the paper considers how what had been preached changed to fit the times. How did this relationship start to manifest itself in the Americas as Europeans were heading across the ocean and across the continent forcing aboriginals westward? The focus will be on how the two changed to retain members and how they stayed the same as to not relinquish purity of the message of what was being transmitted. I will focus on how the Durkhemian social cohesion plays a valuable role for both. I will also consider Marx'scommodity fetishism and class consciousness, while applying conflict theory to the role of resources amongst tribes in Europe and on Turtle Island. How and why do the general distinctions not only include major similarities, but what differences exist in the perceptions of how we view where we fit into the scheme of things.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Vondal, Edward	Philion, Stephen	Sociology and Anthropology

Religion and Homosexuality: Urban and Suburban Churches' Position on LGBT Issues

This paper is on the subject of homosexuality and Christian churches. More specifically, how do different church locations shape how the issue of homosexuality is addressed by different congregations? This paper will analyze if, how and why church location has an impact on positions or stances on LGBT issues. Research for the paper will come from qualitative analysis I make at different churches and an in- depth review of literature already available on the subject.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Giller, Jeffery	Philion, Stephen	Sociology and Anthropology

Session A-VN | **Applied Sciences-1** | **Voyageurs North**

Improve Production with Lean Six-Sigma

Lean six-sigma methodology which consist of the combination of Lean manufacturing introduced by Toyota and Six Sigma methods by Motorola Corporation is widely used in the corporate world today to maximize the productivity and waste elimination. Currently there are fifty different supplies going to the common cut area in a medical device company to be process for manufacturing need it is the bottleneck for the facilities production flow. The objective of this project is to make improvement to the common cut room and optimizing the value stream flow for the common cut room. The output of this project will consist of kanban system setup, overall capacity management improvement, standards work instructions, organize part numbering system, new cell layout design for better material flows and handling, and value stream map. The basic concept to accomplish the project is to utilize lean manufacturing and six sigma methods to analyze and execute the problem occurs in common cut area which includes DMAIC, value stream mapping, capacity analysis, statistical process capability analysis, flows analysis, material replenishment planning, standardize work and part number organization.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Quek, Yi Lin; Law, Chin Yew	Baliga, Ben	Mechanical and Manufacturing Engineering

Factors Affecting Retention of SCSU Students

This presentation is on the retention rates of the SCSU incoming freshman class of 2007. We consider several different variables of information from each student, including ACT score, high school GPA, number of credits attempted and Fall GPA, among others. The goal is to find which variables are most strongly associated with the retention of students for one or more semesters. After finding the most significant variables related to retention, we use these variables to create a logistic regression model that can be used to predict the probability that a student would return to school after one, two and three semesters. This model may be important in predicting the retention rate of an incoming freshman class in future years. Using this model, the university may be able to plan for an estimated number of returning students, based on the demographic and academic information from the students.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Greene, Alexander; Woznica, Ewa	Robinson, David	Statistics

Aspects of the Role of Winter Weather Pertaining to Vehicle Crashes in Saint Cloud, MN from 1998 to 2009

Previous studies have found that weather conditions have significant effects on car crashes. This research investigates winter weather's impacts on car crashes within the city of Saint Cloud, MN to determine how well it conforms to previous research from the field. Using data from the city's Traffic Engineering Department to analyze accident types, combined with data from the Saint Cloud Police Department correlated to hourly weather observations, clear trends can be observed regarding the spatial, and categorical patterns of crashes within the city.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Kraushaar, Scott	Wixon, Lewis	Geography

Optimizing Work in Process in the Stamping Area of an Assembly Plant

Stamping is a manufacturing process by which sheets or strips of material are pinched using a machine press or stamping press to form the sheet. This could be a single state operation where every stroke of the press produces the desired form on the sheet metal part, or through a series of stages. This project was conducted in a refrigerator manufacturing company's stamping department. The inventory levels for productions were unknown and the work in process had created a bottleneck and boundary to the downstream operations. The objective of this project was to determine the bottlenecks in the stamping department and to find the optimum levels needed for the production on the machines. Overall setup time and change overtime for each part produced from the bottleneck machine were noted and analyzed. The flow of materials before and after the bottleneck machine was determined. Our presentation will describe the results of the study and recommend the inventory levels needed before production which in turn can reduce the impact of the bottleneck machine or possibly eliminate the bottleneck machine.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Law, Chin Yew; Mallikarjunappa, Lohit	Shah, Hiral	Mechanical and Manufacturing Engineering

Session A-VS **Behavioral Sciences-1** **Voyageurs South**

MK57 Virtual Fit Check

The current method that used to check whether or not a canister will fit into its launcher is to use a physical worst case scenario "go-no go" gage. With this method, no inspection data can be collected, many people are required and because the inspection is taking place during final installation, by the time an issue is discovered, there could be more units produced with the same issue before the manufacturing facility has a chance to investigate the causes. For this study, the non-contact inspection technologies of laser scanners, laser trackers, white-light imaging and laser radar were researched and/or tested to determine the capabilities of each. From the study, three of the technologies emerged, all showing that they were capable of collecting data in an accurately, quickly, and in a cost-effective way. Those three technologies were then narrowed down to one final decision using a weighted decision matrix with twelve criteria. From the decision matrix, the laser scanner emerged as our suggested method of data collection.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Hagestuen, Christopher; Ackley, David	Baliga, Ben	Mechanical and Manufacturing Engineering

The Necessity of Music Education

No education is complete without training in the musical arts. Ancient philosophers believed music was a necessary subject for all students to study. Music was the meeting of art and science, a combination of beauty and math. Along with the development of the physical body, development of the mind through music was necessary for the growth of the whole person. Today, many recent studies and research have found that student musicians are smarter and more successful than students who do not study music. In contradiction to these beliefs and findings, many modern education programs do not include music as an integral component of their curriculum. Throughout the United States, arts programs are being cut. Without an education in music, modern students will not have a fully developed and well rounded education.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Rooney, Anna	Verrilli, Catherine	Music

Peer Mediation as an Approach to Combat Adolescent Conflict in Schools

With the increase in violence and negative behaviors in high schools, peer mediation programs have been identified as an approach to combat the rising problem. The purpose of this study is to examine whether conflict resolution training with a diversity component in tandem with mediation training affects violence in 2 Midwestern high schools and the attitudes about conflict for students. This study will implement a peer mediation and conflict resolution training for two area high schools. It is hypothesized that following the training the number of violent incidents will decrease and attitudes about conflict will be positively impacted. Thirty participants were selected by teachers and administration in 2 local high schools. The participants completed peer mediation training and were given a pre/post test called the Organizational Communication Conflict Instrument to determine if their attitudes about conflict would change after training.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Hoffman, Rebecca	Mayhew, Michael	Educational Leadership and Community Psychology

Reflexes vs. Personal Wellbeing (Medical regression analysis)

Lumbar spinal surgery is a procedure that removes bone and tissue around the spinal cord to relieve pressure on the nerves. The surgery is meant to eliminate or reduce pain and weakness in the lower back and legs that can interfere with everyday activities. Forty-seven patients who had undergone the surgery were given a questionnaire and a physician evaluation on a number of occasions after surgery. The questionnaire asked patients to mark their level of pain during various daily activities. The questionnaire also asks for each patient's maximum level of pain over the past week, given by a visual analog scale. The physician evaluation tested the reflexes, sensitivity and motor scores for multiple parts of the leg, including hips, knees and ankles. The purpose of this study is to predict a given patients level of disability after surgery.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Aasen, Bradley	Zhang, Shiju	Statistics

Session B-B **Poster Session I - All Disciplines** **Ballroom**

SCSU Survey Feeling Thermometer

Our poster will present the "feeling thermometer" results from the fall 2008 Statewide Survey conducted by the St. Cloud State University Survey. The poster will include the results from the 2008 "feeling thermometer", as well as longitudinal data collected on cretin political leaders. Information regarding the methodology of the survey and the utility of the "feeling thermometer" will also be explored.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Lynch, Trevor; Barthel, Craig	Frank, Stephen; Wagner, Steven; Hammes, Michelle; Robinson, David; Zerbib, Sandrine	Political Science, Sociology and Anthropology, Statistics

Integrating Prescribed Burn and Chemical Herbicide for the Control of Common Tansy Tanacetum vulgare

The continued collaboration between St. Cloud State University and the Department of Defense has already produced beneficial results for all parties involved. An agreement was signed in 2003 that allowed Researches from SCSU to access Minnesota's two military training sites with the intention of giving advice and management recommendations on how to handle the invasive plant species problem on these training sites. This collaboration has facilitated: two master thesis's, complete mapping of the invasive plants at the two military training sites, predictive modeling on where the invasive plants may be spreading, the release of thousands of biological control agents, five years of chemical control on seven different problem plant species, the testing of various different integrated control types and the creation of a website to share the knowledge gained thus far. The current SCSU researcher at these military sites has focused in on common tansy (Tanacetum vulgare). Common tansy is one of the most problematic species at the largest of the two military training installations, Camp Ripley. Common tansy has the most acreage of all the invasive plant species at Camp Ripley and is increasing rapidly. The experiment proposed and started will test if integrating prescribed burning and chemical herbicide treatment has a greater affect in reducing common tansy than un-integrated treatments of prescribed burning or chemical herbicides alone. The scope of this presentation will cover a brief introduction to common tansy and the study area, the experimental proposal and execution and finish with results and conclusions from the common tansy experiment.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Carlyon, Joseph	Arriagada, Jorge	Biological Sciences

Tendency to Pickup Money

Money influences people and people do behave differently when it comes to money. The present study tests whether the amount of money and location had any effect on whether the individuals picked up the money or not. Two different amounts of money were placed in three different locations. The present study tests the hypotheses that the tendency to pick up money would increase if the value increased and that when placed in a busy area, people will be less likely to pick up the money. The results of 231 participants showed no significant effects of value of money or location on willingness to pick up money.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Malla, Kailash; Flores, Julia; Nelson, Cassandra	Illies, Jody	Psychology

Finding Meaning: Graphic Novel Comprehension and Field Independence

Finding hidden figures in a larger picture can be very easy for some people while challenging for others. This is known as field independence or dependence. Individuals who have field independence can quickly find embedded figures by ignoring overall context. People also differ in their comprehension ability. Good comprehenders tend to quickly select the context appropriate meaning (e.g., Gernsbacher & Faust, 1991). The purpose of this study was to investigate whether selection of meaning is related to selection of visual information. In this study participants read stories that either had pictures and text or only one format (pictures or text) and answers questions about the story. Participants did the group embedded figure test, GEFT. They viewed a complex figure and indicated whether a smaller picture was part of the larger one. It is predicted that comprehension scores will be related to performance on GEFT. Implications for multi-media story design are discussed.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Malla, Kailash	Valdes, Leslie	Psychology

The Influence of Grandparents on College Students

Our research aims to understand the relationship between college students' and a grandparent based upon the students' self and emotional development. Students choose one grandparent to whom they feel relatively close to and answer an anonymous online survey which will measure 200 undergraduate students' demographics, relationship quality with the grandparent, intergenerational transmission of values and the students' self and emotional development. Relationship quality refers to the degree or state of which you are emotionally and/or physically connected to another person. Intergenerational transmission of values refers to the values and traits passed down to the grandchild through the life experiences of the grandparent. Self and emotional development describes the process or state of growth and changes throughout one's life. We hypothesize that students' self and emotional development will be predicted in part by their relationship quality with their grandparent and the intergenerational transmission of values. Using multiple regression analyses the relationship of college students and their grandparent will be analyzed according to relationship quality, intergenerational transmission of values and the students' self and emotional development.

Presentation Index: B-B 5 **Present Time:** 9:00 AM

Student Presenter(s):	Sponsor(s):	Department(s)
Leichtnam, Paige	Devoe, Marlene	Psychology

Extroversion and Creativity across Real-World Situations

It's not uncommon for people to be asked to think critically about various problems that affect their daily lives. Although the majority of people are capable of creating solutions, not everyone generates innovative solutions. Personality is one factor that may influence how well people are able to solve problems (Kelly, 2006). This study explores the notion that the personality factor of extroversion influences how creatively people solve real-world problems differing in content. Although studies of personality are progressing, it's still unclear how personality affects creative problem solving. Several authors have found that extroversion has predictive properties for problem-solving abilities. However, the exact effect is not well understood. This may occur because the effect of extraversion depends on the content of the problem. This study explored the relationship between extroversion and creativity across three different problems using archival data from two studies. Participants in each study assumed the role of the main actor in each problem. In one study, participants assumed the role of a college student council president and solved two problems (a) regarding campus parking issues and (b) dealing with a council member who engaged in inappropriate behavior. In the other study, participants assumed the role of a small business owner and solved a problem concerning staying in business despite tough competition. Two judges then independently rated the creativity of the problem solutions. Analyses show that correlations between extraversion and solution creativity changed depending on the problem ($r = 0.25$ business problem, $r = 0.21$ parking problem, and $r = 0.15$ council member problem, $p < 0.05$ for all). This study provides a better understanding of how extraversion contributes to creative problem solving.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Wendlandt, Kati	Illies, Jody	Psychology

Histological Investigation of the Biological Effects of Endocrine Disrupting Pollution in Minnesota Lakes

This study investigated the occurrence of endocrine disrupting compounds in diverse aquatic ecosystems in Minnesota. We assessed the biological consequences of exposure to endocrine disrupting compounds through histological analysis of fish tissues collected from a statewide study of 17 aquatic environments, including lakes and streams. The sites were selected to project an accurate sample of Minnesota's aquatic ecosystems ranging from nutrient rich (eutrophic) lakes to nutrient poor (oligotrophic) lakes and including river systems downstream of point-sources such as wastewater treatment plant effluents and agricultural point-sources. Histological and histopathological analysis focused on organs that, in past studies, were found to be vulnerable to the effects of endocrine disrupting compounds in aquatic environments. The livers and gonads of all specimens collected were analyzed based on a grading scale that was designed by the Environmental Protection Agency, which we then modified. The liver was assessed for the percentage of adipose cells present in the histological sample. Ovaries were analyzed on a five point scaled measuring the maturity of the oocytes, while testis were analyzed based on the relative abundance of spermatozoa (mature sperm) and spermatogonia (immature sperm). Our data showed a significant occurrence of intersex characteristics (gonadal composition including concurrent oocytes and testicular tissues), incidence of testicular feminization, interstitial hyperplasia and altered abundance of spermatogonia and spermatozoa. The analysis of liver samples showed a higher than normal presence of adipocytes, a biological indicator of increased pollutant stress.

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

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

Speech-Language Pathologists' Participation In and Knowledge About Health/Wellness in the Workplace

Health and wellness are of vital concern for all workers, including speech-language pathologist (SLPs). Healthcare costs in the United States are exceedingly expensive so it is imperative that workers maintain their health. This is particularly challenging for SLPs who work in a demanding profession with health impaired clientele. Thus, it is very important that SLPs have knowledge about health and wellness issues. The term health is defined as the general state of physical, mental and emotional well-being. Unfortunately, little research has been done that explores these issues in speech-language pathology. The purpose of the current study was to obtain information about SLPs' involvement in and knowledge of health and wellness in the workplace. This study involved thirty randomly-selected SLPs working primarily in the Midwest; 20 worked in education and 10 worked in medical/other settings. Both interviews and surveys were used to collect data. When asked to define health and wellness, nearly all said physical health and disease prevention. Three-fourths of the SLPs indicated that their greatest concern about health is catching diseases/illnesses. Other results suggest that SLPs have sufficient knowledge of health and wellness protocols but may be inconsistent in following them. Lastly, results showed only some SLPs are taking extra precautions to safeguard their own health as well as participating in workplace wellness programs. It can be concluded that SLPs have concerns regarding their health and wellness and are knowledgeable about workplace protocols but only some are taking extra precautions in safeguarding their own health and participation in wellness programs. This is concerning due to ever-increasing health care costs and increasing severity of client illnesses. Thus, SLPs may need to be more proactive in following workplace wellness procedures and increasing their own health precautions.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Honcharoff, Amber; Vanderbilt, Ann; Wachter, Toni; McLain, Kristin; Screeden, Julia	Whites, Margery	Communication Sciences and Disorders

Mechanism of interaction of Alzheimer's disease drugs with aggregates of beta-amyloid peptide (AB 1-42)

Alzheimer's disease (AD) is characterized by the deposition of amyloid beta peptide (ABeta) plaques in the brain. ABeta is formed by enzymatic cleavage of larger precursor, amyloid precursor protein (APP). Patient suffering from AD has severe loss of cholinergic neurons synthesizing the neurotransmitter acetylcholine. Hence, efforts have been made to increase the levels of acetylcholine in the brain. Galantamine, a drug used in this experiment, is a cholinesterase inhibitor which increases the levels of acetylcholine at the synapse of cholinergic neuron. It is hypothesized that ABeta aggregation is via hydrophobic interactions. Hence, hydrophobic drug like galantamine would inhibit the formation of amyloid beta (1-42) plaque. In this research project, Thioflavin T (ThT), is used as a dye which binds rapidly to amyloid fibrils accompanied by dramatic increase of fluorescence at around 485 nm, when exited at 435 nm. The interaction between ABeta (1-42) peptide aggregates and this drug molecules is be studied by analyzing the emission spectra obtained from florescence spectrophotometer.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Thapa, Rajan	Ramakrishnan, Latha	Chemistry

Teaching Functional Communication to an Adult with Developmental Disabilities

Autism significantly impairs areas of social interaction and communication. These individuals tend to have difficulty in typical everyday interactions. Communicating wants and needs to others can be very difficult. For those individuals who do not acquire verbal communication it is therefore, necessary to teach functional means of communication. With today's advances in technology, non-verbal individuals can communicate to others through the use of Voice Output Communication Aids (VOCA). This program was developed to teach functional communication training to a non-verbal adult female diagnosed with autism. Acquisition phases to teach the participant to appropriately activate the device to make requests are being conducted. Future phases are discussed.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Knutson, Lacy	Schulze, Kimberly	Educational Leadership and Community Psychology

Life Stress and Task Performance

Environmental psychologists have found that humans prefer natural settings to settings devoid of nature. Attention Restoration Theory (ART) suggests that exposure to nature can contribute to stress restoration. The present study included a comparison of the effects of viewing scenes of natural vs. urban environments in participants who differ in their stress level. Participants completed Cohen's Perceived Stress Scale and were randomly assigned to nature or urban conditions. Cognitive performance was assessed using a simple task and hard task with two rules and was measured by the number correct responses as related to incorrect responses and omissions. Effects related to stress were insignificant, however, previous research was supported with a significant effect which determined improved performance in the nature condition.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Stillwell, Matthew	Jazwinski, Christine	Psychology

Electric Magnetic Simulation Tool

Simulations of electromagnetic wave propagates in high speed circuits are important to achieve optimal performance circuits and reduce development cost. The assessments of the scattering parameters and impedance are important for high speed printed circuit board (PCB) design. Finite Difference - Time Domain (FDTD) is a direct numerical solution for Maxwell's time dependent curl equations. We have developed a CAD tool for 3D dynamic EM solver for high speed circuit design. FDTD is adopted in our tool to calculate the EM wave propagation in circuits. Other key parts of our CAD tool include: port setup, source creation, boundary conditions, S-parameter calculation, time domain reflect meter (TDR) and adaptive mesh modeling. Finally, a user friendly Graphical User Interface (GUI) is developed for design engineers.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Chen, Feng	Zheng, Yi; Goergen, Joel	Electrical and Computer Engineering

Xenophobia and Capitalism in South Africa

My research project examines the problem of xenophobia in South Africa in relation to the attacks on foreigners that took place in May 2008. The violent attacks on foreigners in South Africa by a South African mob have been described as the worst in recent South African history. The attacks were specifically aimed at foreigners of African descent who were living in South Africa's townships where most of black South Africans live. Since South Africa's first democratic elections in 1994, many Africans from neighboring African countries have migrated to South Africa. The main attraction to South Africa has been work and safety issue. This project examines what was the cause of the attacks. Why is there such a robust xenophobic culture in South Africa? My research project conceptualizes the South African attacks on foreigners by focusing on the social context in which the xenophobic attacks are taking place. The international movement of capital around the world has generated different results for different societies. It has generated hatred amongst people in different nations. The xenophobia in South Africa can also be seen as resistance because indigenous South Africans feel marginalized.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Scott, Lwando	Zuo, Jiping	Sociology and Anthropology

An Assessment of Sexuality Education

The objective of this research project was to assess the college age community about their experience with previous sexuality education. We wanted to obtain a reflective perspective about what worked for them and what should be done differently. In collaboration with CHAS (Coalition for Healthy Adolescent Sexuality), a survey of Ridgewater college students in Willmar, MN was completed. Significant findings were that college students wanted to obtain information from their parents, but only a small amount felt comfortable talking to their parents about sexuality, and many students wished they would have received more information about birth control and condoms. Implications of our findings are that parents need to become more proactive and learn effective ways to educate their children on healthy sexuality, and policies need to be developed regarding types and timing of sexual education implemented in schools.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Grulke, Jerisa; Nelson, Hillary; Jama, Naima; Sherpa, Mingmar; Kommer, Cathrine; Cashman, Anna; Langworthy, Casey; Ringler, Sarah	Lenz, Brenda; Warner, Susan	Nursing Science

Vanadium- Flavonoid Complexes as the Inhibitors of the Enzymes Involved in Glucose Metabolism

Diabetes, and its associated health complications, is one of the most prevalent causes of death. Vanadium salts and its complexes exhibit promising antidiabetic properties. This has accelerated extensive research on the development of vanadium-based antidiabetic drugs. We have developed two vanadium compounds namely vanadyl-3-hydroxyflavone and vanadyl-5-hydroxyflavone. One of the mechanism by which vanadium compounds exert their antidiabetic properties is via inhibition of glucose metabolizing enzymes such as b- glucosidase and phosphodiesterase. Glucosidase is one of many enzymes responsible for the generation of glucose from various carbohydrate sources. In this study we have attempted to determine if the vanadium complexes inhibit the activity of glucosidase. This was achieved by performing spectrophotometric enzyme assays for glucosidase in the presence of vanadium complexes. Results obtained suggest that that vanadyl-3-hydroxyflavone and vanadyl-5-hydroxyflavone inhibit glucosidase. It is expected the results from this work will contribute to a better understanding of the fundamental properties of vanadium-flavonoid complexes and a clearer picture of their mode of action in the treatment of diabetes.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Maskey, Manjit	Sreerama, Lakshmaiah	Chemistry

Reverberation and Uncertainty of Vibro-Acoustograhy

As a new elasticity image technique developed by Mayo Clinic, Vibro-acoustography (VA) induces low frequency acoustic radiation force in a tissue region and images the acoustic response of the tissue to reveal tissue elasticity that may be related to tissue pathology statues. The ultrasound radiation force is introduced by co-focal beams and the tissue response is detected by a hydrophone. VA has remarkable image resolution in the sub millimeter range and is useful to detect calcifications in human tissues, such as calcifications in human arteries, breast micro calcification and cancerous liver tissue and calcium deposits on heart valve leaflets. However, the clinic applications of VA are limited by its reverberation problem, which causes uncertainties of a VA image. In this work, the cause of the reverberation is investigated. We found that the acoustic waves induced by ultrasonic radiation force are reflected multiple times from the complex boundaries in a tissue region. This multipath re-enforces or cancels the acoustic wave at the receiver. We also found that complex tissue structures attenuate the propagation of ultrasound wave in a random fashion so that the radiation force is not uniform at the focal plane. Our findings are confirmed by studying the acoustic wave propagation in a urethane breast phantom. The simulation results are compared with the experiment measurements. Our findings help the development of methods to reduce the reverberation. This work is partially supported by a joint NIH grant between Mayo Clinic, Connell University and St. Cloud State University.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Lin, Jiangli	Zheng, Yi	Electrical and Computer Engineering

Goniothalamin Analogues Incorporating Alpha-Methylene Lactones

In the United States alone, over 550,000 people are projected to die from cancer this year. Due to the increase in cancer diagnoses, deaths, and the ever increasing costs of health care, the development of new drugs to fight cancer has taken on an increased sense of urgency. In this effort, organizations like the National Institute of Health (NIH) have initiated mass screenings of natural products against cancer cell lines to determine their cytotoxicity. The focus of this research is on Goniothalamin, a natural product discovered by the NIH. Goniothalamin was one of many styryl lactones isolated from the dried stem bark of the Malaysian plant, Goniothalamusandersonii. Many of these secondary metabolites were found to induce cellular apoptosis against a variety of different cancer cell lines. Preliminary testing has shown that goniothalamin's cytotoxicity is cell specific; it exhibits no significant cytotoxic effects on healthy cells surrounding the cancer during treatment. This research project describes the synthesis of a novel Goniothalamin analogue. While the natural product features an internal alpha, beta-unsaturated lactone, this new compound will incorporate an external alpha-methylene functional group. Literature precedence provides support that this structural modification may increase the natural product's cytotoxicity against cancer cell lines. If this hypothesis holds true, the prepared analogue could provide valuable insight into the development of new chemotherapeutic agents.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Crookston, Carina	Mechelke, Mark	Chemistry

Acute Fasting-Induced Changes in Motilin, Luteinizing Hormone and Metabolites in Castrated Goats

In monogastrics the secretion of motilin, a peptide hormone produced by cells in the gastrointestinal tract of many mammals, increases during fasting. Similarly, the secretion of luteinizing hormone (LH) is suppressed by fasting in monogastrics and other animals. Although different mechanisms of undernutrition-induced suppression of gonadotropin secretion have been proposed, the possible role of motilin in this process remains unclear. In this study, we tested the hypothesis that acute fasting induced changes in plasma motilin secretion in wethers and that changes in plasma motilin and LH secretion are correlated. Six wethers in high body conditions were fed ad-libitum and then fasted for 48 hours. Blood samples were obtained from an indwelling catheter for 4 hours at 10 minute intervals during each feeding regimen. Results indicate that motilin is secreted in a pulsatile manner and that fasting tended to increase plasma motilin secretion (P=.06). Acute fasting induced a paradoxical increase in plasma LH (P<.001). Fasting caused a significant decrease in plasma glucose (P<.02) but increased plasma urea nitrogen (P<.0001) and beta-hydroxybutyrate (P<.001). However, there was no effect of acute fasting on plasma non-esterified fatty acids (P=0.8). Plasma motilin levels were negatively correlated with plasma LH in the fed state (P<.001) but this correlation was not significant in the fasted state. These results indicate that the suppressive effect of acute fasting on LH secretion in goats may be dependent upon testosterone and body condition. Furthermore, fasting for 48 hours may be insufficient to cause a significant increase in plasma motilin in ruminants.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Bialka, Susan; Mboko, Wadzanai	Gazal, Oladele	Biological Sciences

Increasing Sight-word Reading and Math Skills Using Response Repetition

Response repetition (RR) is a consequent intervention wherein an individual is required to engage in one or more repetitions of a specified operant after erring on a problem. In Experiment 1, the effects of RR on sight-word reading by three participants were evaluated using a multiple baseline design and generalization was assessed by evaluating the participants' performance on (a) classroom reading assignments and (b) passages containing targeted and untargeted words. In Experiment 2, the effects of RR on math skills for two participants were also evaluated with a multiple baseline design. Results from Experiment 1 indicated that reading accuracy increased for all participants after RR was introduced and generalization of behavior change was noted for nearly every participant. The results of Experiment 2 indicated that accurate completion of math problems increased for one participant following the introduction of RR; however, additional contingencies were needed to increase correct responding for the other participant. Taken together, the results from these two studies suggest that procedures involving positive punishment may be useful tools in academic settings.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Stenske, Michelle	Rapp, John	Educational Leadership and Community Psychology

Fraternal Organizations and Their Disability Related Programs

This presentation is focused on identifying service clubs that have resources for individuals with disabilities via fraternal organizations (e.g. Lions, Rotary, VFW). Listed will be specific programs and services available. Presented will be the contact information for each service club by providing a directory of service organizations and programs.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Edin, Jennifer	Hotz, John	Counselor Education and Educational Psychology

A Distance-Cost Analysis of Hinterland Variation for Rainbow Kennels in Braham, MN, Between 1994 and 2008

Studies of hinterlands have shown there is variation in size as well as thresholds that limit the variation (see Nepal and Tapa, 2009). Distance travelled to purchase a good can be correlated with the purchase cost generating a threshold distance. This study focused on an AKC registered German Shorthair Pointer breeder located in Braham, MN. Litter records were obtained from Rainbow Kennels for the litters it helped between 1994 and 2008. It was hypothesized that the value of the bloodlines would influence the hinterland size and therefore the threshold distance from which a Rainbow Kennel's customer would travel to make a purchase. Cartographic portrayals and statistical analyses were conducted in order to assess the magnitude of the bloodlines influence on hinterland variation.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Olson, Emily	Wixon, Lewis	Geography

Instrumentation and Calibration of Track and Field Starting Blocks for the Measurement of Kinetic Data

Several studies have been performed to measure kinetic properties of the sprint start in track and field. Many of these studies were conducted in labs using starting blocks mounted over force platforms to measure kinetic variables. However, a lab without a force plate would need to spend over $20,000 to purchase and install such hardware and software. This solution leaves the sprinter limited to the confines of the lab, unless a track with mounts for a force plate is available. More recently, instrumented starting blocks have been developed but cost upwards of $20,000, and for many research labs the limited utility of a set of instrumented blocks doesn't justify the cost. To provide a cost-effective solution for collecting force data from a set of starting blocks while keeping the surrounding environment comparable to a competition setting. One side of a standard Olympic style track and field starting block was customized to measure RF. A plate was fabricated to sandwich four uniaxial load cells to the starting wedge. Uniaxial load cells were used to keep costs lower but have the limitation of only providing RF perpendicular to the surface of the wedge. The cost of hardware for this specific application was less than $3,200. The device was calibrated using a least squares technique. The calibration provided regression coefficients for the four load cells in the system. The block was then loaded with known weights in the range of 30 to 150lbs. The regression predicted known weights with approximately 1% error. A fully functional system of set of blocks (two wedges capable of measuring perpendicular and shear force under each foot) would be expected to cost about $6,000. It is possible to construct a cost-effective, functional set of instrumented starting blocks that accurately (~1% error) measures RF.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Johnson, Samuel	Bacharach, David; Street, Glenn	Health, Physical Education, Recreation and Sport Science

Sociology of Eating Disorders

The purpose of this study was to examine and review research on eating disorders using a sociological approach. The paper first does a review of the pertinent literature regarding eating disorders. After the literature review the main themes of the paper draw on relationships found between eating disorders and gender and the history of cultural norms for the body. It examines eating disorders from a cross cultural perspective and why cultures that have not adapted to westernized culture experience little to no cases of eating disorders. This paper also draws on how society defines beauty as a reflection of upper class standards as well as using the ideal body image as a way to continue oppressing women. This, then, leads to looking at eating disorders as a deviance issue as those who fail to meet the norms of society are rejected and given labels that mark them as different. Finally, the paper examines eating disorders as a social problem that suppresses those who don't conform to certain standards and norms.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Ahles, Amanda	Scheel-Keita, Elizabeth	Sociology and Anthropology

Atomic Force Microscope Imaging

Atomic force microscopy (AFM) can be used to image structural properties of microbes. The purpose of this research was to develop methods for viewing bacterial spores. Bacterial spores may have distinguishing surface characteristics which can assist with differentiation of organisms. Members of the genus Bacillus were used for this study. These included a variety of strains of B. cereus and B. thuringiensis. Spore production was enhanced by culturing bacteria on nutrient agar supplemented with calcium chloride and manganese sulfate. Cultures incubated seven days or longer yielded higher numbers of free spores. Washing spore preparations helped to remove cellular debris. However, filtration and differential centrifugation was required to provide optimal spore preparations for AFM examination.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Lukkes, William	Schrank, Gordon	Biological Sciences

Stearns County Fall Assessment

According to the Minnesota Department of Health, approximately 12% of the total population is age 65 and older. This population has an increased risk of injury related to falls. We strive to determine what common risk factors lead to this increased incidence of falls in the elderly. Each year, approximately 9,500 deaths in elder Americans are directly linked with falls. An elderly person who falls is ten times more likely to be hospitalized and eight times more likely to die as a consequence of the fall. Those who survive a fall experience significant morbidity, including declining function and poorer health. A convenient sample was used of 31 voluntary participants age 65 and older. Participants were residing in 2 assisted living facilities in Waite Park and St. Cloud. Additionally, <5 participants who resided independently in St. Cloud and Waite Park were included. Participants were interviewed in their homes using a 13-item survey. Statistical analysis was performed by researchers. Data was analyzed using Microsoft Excel. Graphs were developed to compare risks. Participants who have fallen > 3 times in the last year were more likely to be taking medications. Concern for falling was found to be greater in the elderly that have fallen at least once in the past year. Participants that fell visited the hospital more often than those who did not fall (47% compared to 6%). Identifying factors that correlate with an increase in falls will assist healthcare providers to decrease the incidence through prevention. Better understanding is needed in elderly community members at high risk for falling. Risk factors for falling were present in the subjects that have not fallen. Therefore, more research must be conducted in order to determine who is at high risk for falls.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Mitchell, Heather; Kohl, Heather; Sprengeler, Jennifer; Langner, Jennifer; Tures, Mildred; Tuladhar, Chungta; Rassier, Shannon; Dauphin, Stephanie	Lenz, Brenda; Zelenak, Mary	Nursing Science

Impact of Electroporation Technology on Fight Against Cancer

Electroporation has long been used experimentally to temporarily punch holes in cell membranes and ferry drugs or genes into them, and now may yield new benefits for cancer treatment. A medical-device firm AngioDynamics, has created an electroporation device that it claims can kill cancerous tumor cells with remarkable specificity while inflicting little or no damage on surrounding structures and causing no pain for the patient. The NanoKnife delivers quick bursts of energy through a set of electrodes inserted into and around the tumor. The pulses can last up to 100 microseconds and create an electrical field of up to 3000 volts per centimeter. A cell within range of the electric field will form pores in its fatty membrane, allowing ions to rush through. When electroporation is performed with a lower voltage than the NanoKnife delivers and with single pulses instead of a train of pulses, the pores will eventually close as the electric potential of the cell stabilizes. When exposed to higher voltages and longer pulse duration, however the pores in the cell membrane remain open and cause the cell to initiate a programmed suicide, known as apoptosis.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Nwachukwu, Chudy	Zheng, Yi	Electrical and Computer Engineering

Safety and Security Issues for Speech-Language Pathologists on the Job

Safety and security are global concerns for all workers, including speech-language pathologists (SLPs). Safety and security have become a mounting concern due to an increase in violence such as terrorism, school shootings, rape and client aggression. Safety deals with the protection of a person's physical well-being while security deals with the protection of facilities where people work. The purpose of this study was to determine the safety and security issues that concern SLPs in the workplace. Information was obtained through interviews and surveys of 30 clinical SLPs from various work settings with a range of work experience. Results revealed that SLPs working in both the educational and medical settings have concerns about safety and security within the workplace. A majority of SLPs are concerned with violence at work (21/30, 70%) while some are concerned with security of the building in which they work (8/30, 27%) and patient safety/confidentiality (4/30, 13%). SLPs believe that their employers take safety and security issues very seriously with nearly three-fourths (22/30, 73%) of SLPs indicating a high level of employer support. SLPs (17/30 or 57%) are also taking their own measures to ensure safety and security, such as awareness of surroundings, locking their offices, carrying a cell phone, not keeping valuables in office, carrying winter safety kits, monitoring client safety and behavior and checking in at a particular time.

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

Student Presenter(s):	Sponsor(s):	Department(s)
O'Hara, Kaye; Knutson, Lindsay; Gabbert, Kristina; Martell, Patricia; Treichel, Katherine	Whites, Margery	Communication Sciences and Disorders

Reading Graphic Novels: Effects of Media on Comprehension

Graphic novels have been increasing in popularity. Several novels have been translated into film. It is not clear if the comprehension process for graphic novels is the same for other kinds of stories. Research has found that comprehension is often enhanced by multimedia presentations or graphics (Adaval, Isbell, & Wyer, 2007; Huk & Steinke, 2007; Kools, Wiel, Ruiter, & Kok, 2006). Informal observations of student comprehension of graphic novels suggest individual differences in comprehension. In this study participants read stories presented as either text only, graphic only, or graphics and text. Participants then answered questions about the stories and the multi-media comprehension battery (Gernsbacher & Varner, 1988). It is predicted that multi-media stories were understood better than single media. Implications for comprehension theory are discussed.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Konkel, Christopher; Buckner, John; DeWald, Eric	Valdes, Leslie; Chisholm, Bradley	Psychology, Theatre, Film Studies and Dance

Restoration of Battle Point Park on Lake Osakis

Lakeshore and riparian restoration focuses on restoring land bordering waterways in order to control the negative impacts of soil erosion and contribution of sediment to water bodies. Restoration of these areas contributes to increased water quality and also enhances wildlife habitat. Funding for these projects typically comes from federal, state and/or local agencies. With funding being a limited commodity, there is a need for research aimed at improving best management practices (BMPs) and creating protocols for how to apply BMPs efficiently in order increase the success rate of these valuable projects. The Battle Point Restoration Project is aimed at restoring 1,100 linear feet of shoreline on Lake Osakis, located in Todd and Douglas counties. Battle point has seen a dramatic decrease in square footage of shoreline area due to intense erosion. To control natural erosion and enhance the park for wildlife, seven BMPs will be installed and monitored. The project is broken up into 10 individual sites, each with different BMPs and on varying temporal scales. Erosion factors will be calculated to determine sediment loads from each site. Wave energy at each site will be recorded and BMP effectiveness at halting erosion will be compared. This project will be part of an ongoing research database which seeks to gather information from multiple statewide restorations and track their success over the long term.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Borgerding, Tara	Bender, Michner	Environmental and Technological Studies

Liquid crystals tell temperatures - A physics and computer science project

There are times when we need to tell the temperature of an object which we don't have direct contact with. Examples are telling the temperature of a faraway star or melting metal. We use light spectra observed by us from these objects and compare with a black-body radiation spectrum to tell their temperatures. A similar idea can be applied to room-temperature objects with temperature ranging from say 15 degrees celsius to 35 degrees celsius. Examples including, determining temperatures of 100 food containers remotely within seconds, in which case traditional contact-based measurements lack efficiency as well as simultaneity. Another example is the determination of temperatures of some moving parts on an assembly line or belt which we would otherwise have difficulty attaching a physical connection for conventional temperature measurements. If room-temperature objects somehow radiate different colors at different temperatures, we would be able to use their respective spectra for measurement of their temperatures. Room-temperature objects do radiate inferred radiations indicating their temperatures. On the other hand, measuring inferred radiation can be difficult if one is limited to everyday equipments and a tight budget. We propose a low-cost automated high-speed non-contact thermometer system using inexpensive commodity thermo chromic liquid crystal (TCLC) sheets, a simple digital camera and a computer. Special TCLC sheets reflect different colors at different temperatures. A digital camera with a fast shutter captures images of such sheets, and then the computer calculates temperatures for each TCLC sheet attached to objects at a high speed.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Vouk, William; Balle, Elischeba; Syed, Zafrul; Jeppesen, Dane; Sacko, Fatimata; Gazal, Akinfolarin; Victorson, Eric; Harter, Joseph	Liu, Zengqiang	Physics, Astronomy and Engineering Science

Resources for Young Families in Meeker County

Resources available to qualifying families are not as accessible as they need to be. Therefore we developed a study to research the gaps in access to community resources for young families, with their oldest child being under 10 years living in Meeker County. Identification of access to community resources is necessary in order to address needs and provide optimal care for young families. A 15-item survey was sent to Early Childhood and Family Education, Head Start, Litchfield Public Library, daycare centers and public health clients in Meeker County. Ninety two residents participated, with participation implying consent. Collected data was analyzed by St. Cloud State University student nurses. Libraries turned out to be the most accessed resource. On the other hand, Head Start is the least accessed resource. The most common barrier to access of resources was financial problems. Financial Assistance should be focused on by nurses when assisting young families with community resources. The hours of resource facilities should also be looked at in regards to being available for families. Social marketing, particularly in the Public Libraries, is needed to inform families about available community resources. Also, outreach by nurses is needed to help people apply for financial assistance. Further research should also be done to determine the types of financial barriers that families are facing.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Johnson, Hannah; Schwartz, Juleena; John, Ashley; Ganser, Carolyn; Forster, Michael; Shrestha, Shikha; Oliech, Nephat	Lenz, Brenda; DeBruycker, Jo	Nursing Science

Characterization of Algae Overgrowth Using Water Sampling and Geographic Information System

Algae overgrowth has been a nuisance and a problem especially in the lake systems. Though algae bloom can occur naturally, human activities are primarily responsible. Phosphorus and nitrogen pollution from agricultural fields, animal feedlots, lawns, industrial emissions, etc., led to excess algae growth in our water systems. Other variables such as the depth, flow strength, and temperature also influence the resistance or susceptibility of a water system to algae overgrowth. Two water bodies (Uhlenkolts and Vails Lakes) which have been known to be severely affected by algae bloom were selected for detailed investigation. A three dimensional image of the two lakes was used to study the bathymetry (underwater topography or shape) of the water bodies as well as the elevations of the surrounding areas. Grab samples were taken from all the major inlets and areas of varying depths and varying levels of algae concentration (visible) for phosphorus, nitrogen and chlorophyll-a concentration testing. While phosphorus and nitrogen are the primary causes of algae overgrowth, chlorophyll-a (a photosynthetic pigment in algae) is used to determine algal concentration. The temperature of the water was also recorded during the sampling. The watershed of the two lakes was investigated carefully for potential sources of nutrient pollution. All the information gathered through sampling, testing, and investigating was incorporated in a map using geographic information system software for analysis. The research is a step towards the restoration and remediation of the water systems affected by algae overgrowth, and possible abatement of algae infestation of other pristine water systems. The research also demonstrates the advantage and efficiency of using GIS software in-sync with the field data.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Gurung, Kushal	Rose, Charles	Environmental and Technological Studies

Understanding Third World Women: A Transnational Feminist Perspective

The term Third World Women refers to women from the so called developing countries such as Africa, Asia, and Latin America. The literature on third world women portrays them as oppressed, uneducated, dependant and poor with high birth rates. Although this portrayal may be the case for most of the third world women, it is only partial. Inexplicably absent in the literature is the account of how third world women make meaning of their lives based on their own experiences and using their own languages. Because much of the writing on third world women is done by researchers from the West, it fails to offer a valid framework within which to understand third world women based on their reality of their everyday experiences. A major flaw of the Western perspective assume a universal applicability of concepts such as culture, historical context, language, religion and everyday life experiences which create a monolithic image of the category "third world women" and ignore the differences that make the various groups of women unique. I argue that, any framework that does not take into account the differences and specificity of third world women's experiences at the intersection of culture, geographical location, historical context (to include the legacy of colonialism, imperialism and globalization) ignores or gives a distorted reality of ways in which women's lives impact and are also impacted by such complex intersections. Towards this end, I suggest a transnational perspective that engenders a conceptual framework that shows the complexity of third world women lives and experiences. It is also important to show the intersectionality of multiple forms of experiences and find analytical tools necessary for analyzing the multiplicity of lives of third world women in order to magnify their dynamism.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Jangu, Neema	Mwangi, Mumbi	Women's Studies

Synthesis, Characterization and DNA Interaction Studies of Metal Complexes Using Atomic Force Microscopy

The objective of this research is to observe by atomic force microscopy (AFM), DNA interactions of various metal complexes to investigate any potential anti-cancer properties they may possess. There are many types of cancers, each affecting parts of the body differently, but all types are characterized by uncontrolled cell growth that occurs when the DNA in a cell is damaged and the normal mechanism for repairing DNA fails. Metal based drugs such as cisplatin are effective cancer treatments that have been studied thoroughly by AFM. AFM allows for imaging samples as small as 2nm and is currently the best way to study DNA-Drug interactions directly. Cisplatin works by binding to DNA, causing conformational changes. This prevents the DNA from replicating, causing cell death. Vanadium and Titanium complexes have been shown to possess anti-cancer properties as well. Several vanadium and titanium-flavonoid complexes have been synthesized at SCSU in Dr. Mahroof-Tahir's lab including a vanadium-flavonoid complex that I have synthesized using the flavonoid chrysin. These metal-flavonoid compounds and control compounds cisplatin and ethidium bromide will be incubated with DNA 453 base pairs long and imaged using AFM. Changes in DNA length will be measured for all complexes and compared with measured lengths of control complexes. The results obtained will give insight into any anti-cancer properties these compounds may exhibit through DNA interactions. This could lead to further investigation of these compounds other similar vanadium or titanium compounds as anti-cancer drugs.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Wenz, Donald	Mahroof-Tahir, Mohammad	Chemistry

Metabolic Demand of a Kettlebell Workout Routine

Kettlebell routines work to train the body as a whole by improving function, stabilizing joints, and rehabbing athletes after injury. However, the metabolic demand of a single kettlebell routine as it compares to other modes of exercise has not been determined. The purpose of this study was to measure oxygen consumption while completing a kettlebell routine in an effort to accurately determine oxygen consumption and thereby caloric expenditure during the routine. Ten subjects (5 male, 5 female) completed multiple cycles of nine different kettlebell exercises in succession, with each cycle lasting approximately 5-7 minutes. Subjects went about the routine at a self selected pace using earthier a 10 lb kettlebell (females) or a 20 lb kettlebell (males). Throughout the routine, oxygen consumption (VO2) and heart rate (HR) were measured continuously (Oxycon Mobile, Cardinal Health, Inc.). Total test time ranged from 14-22 minutes. Mean values were determined for HR and VO2 for each exercise, as well as for the entire routine. An overall average for HR and VO2 was calculated for males and females. The Weir equation was used to calculate per minute caloric expenditure for each subject and to generate a mean caloric requirement for the kettlebell exercises and overall routine (See Fig. 1). Results indicate this kettlebell routine provided a metabolic demand equal to that of typical exercises such as treadmill walking on an incline, stationary cycling, elliptical exercise, Stairmaster or running. These data demonstrate kettlebell activity could be used as a viable form of cross training to maintain health and improve overall fitness.

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

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

Smart Vending Machine

The Smart Vending Machine is run on the same principles as the Power Co.'s Meter Readers being able to see how much energy you have used without actually walking up to meter to read it. The Smart Vending Machine incorporates a microcontroller to do all its duties and communicated wirelessly with a hand held unit which allows the machines tenant the ability to see how much pop/candy the users are buying without having to walk up to the vending machine. With the vending machines microcontroller using smart cards for payment and a keypad for pin access and the Hand Held uses a LCD Touch screen to provide a simple user interface.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Lallemont, Mark	Glazos, Michael	Electrical and Computer Engineering

A Meteorological Performance Comparison of CSU-CHILL Radar New and Old Antennas

Recently, Colorado State University purchased a new, state-of-the-art dual offset feed design antenna for the CSU-CHILL radar replacing a center fed antenna. This new antenna is expected to have less sidelobes and to significantly reduce ground clutter. The meteorological performance of the new antenna was analyzed for ground clutter, gust fronts, and severe thunderstorms. The hypothesis is that the new antenna will perform better than the old antenna in the areas of ground clutter, gust fronts, and sidelobes. Ground clutter scans conducted with both the new and old antenna provided data to analyze ground clutter over the Rocky Mountains and in two kilometer range rings around the radar. Observations of gust fronts were used to analyze the meteorological performance of the new antenna in a low-reflectivity meteorological event. A gust front case from 2007 was compared to a gust front from 2008. Severe storm RHI scans were analyzed for sidelobes and antenna artifacts above the tops of high reflectivity gradient thunderstorms. Many visual comparisons of radar images were also completed along with numerical analysis to show the meteorological performance of the new antenna on the CSU-CHILL radar. After these analyses, it has been concluded that the new antenna reduces ground clutter in gust fronts and has significantly weaker sidelobes above the tops of thunderstorms.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Galoff, Megen	Kubesh, Rodney	Earth and Atmospheric Sciences

Social Norms: Reducing High-Risk Drinking Among On-Campus Students

A social norms marketing campaign and programming efforts were implemented in a residence hall on the SCSU campus for the 08-09 academic year. The project included an aggressive marketing campaign consisting of posters, fliers, t-shirts and other give-aways and intense programming within the hall. Baseline data was collected from a rigorous online survey that yielded a 91% response rate of over 500 residents. Information collected focused on: alcohol and drug use, consequences incurred due to use, pro-social behaviors (i.e. volunteering, studying, working, etc.), as well as perceptions of how often these behaviors occur within the hall and among other students in general. The marketing and programming focused on correcting misperceptions about behaviors and teaching basic alcohol information as well as moderation and abstinence skills. Follow-up data collected indicates any changes in drinking and pro-social behaviors. The results of the follow-up survey, drawbacks and implications for the campus community will be discussed.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Berg, Rachael; Coyer, Sarah; Roberts, Nicole	Reff, Robert	Counseling and Psychological Services

The Influence of a POWER /BALANCE Hologram on Single Leg Standing Balance

Good balance is an essential trait for everyone from athletes to senior citizens, and is often considered a necessary foundation upon which to improve flexibility and strength. "POWER/ BALANCE Performance Technology," has anecdotally reported that by placing their energy enhancing holograms somewhere on or near one's body, balancing abilities are enhanced. The difficulty with many common, "balance" tests is their ability to be biased thereby misrepresenting the results. To determine if a force platform could be used to measure the influence of an energized hologram on a single leg balance test. Data were collected on 60 subjects balancing on one foot with their eyes closed on an AMTI force plate. Once subjects appeared stable, horizontal force (Fy) was recorded for 10 seconds to represent body sway. A hologram or placebo card was interchangeably placed in random order inside a pouch worn on the subject's back so that they were unaware of the condition being tested. Less sway would reflect a more sensitive response to body balance. The mean standard deviation Fy for each subject during each condition was used to analyze the results. The average variability without the hologram was 10.20+6.77 N while the average variability with the hologram was 10.44+7.00 N. A paired t-test showed no difference between the two groups ($t=1.67$ $P>.37$) It appears that Fy from a force platform can be used to measure body sway to test the subtle influence of a hologram or something similar on body movements during a single leg balance test.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Kuschke, April; Ford, Ashlee; Udermann, Mary	Bacharach, David	Health, Physical Education, Recreation and Sport Science

Utilization of the Miller Center: A Gender-Affordance Interaction

Study areas are abundant on the St. Cloud State campus but as many students know not all of them are as useful as others. Research by Sommer suggests that every area, whether intended for studying or not, has certain characteristics that attract people to them i.e. furniture that can be rearranged, quiet surroundings, or comfort of the affordance itself. With this concept in mind, I set out in November of 2008 to find which floor of the Miller center library possess affordances that are suited to genders and whether they studied individually or in groups. My past findings revealed that females were twice as likely to study on the first floor where as males were twice as likely to study on the third floor. Also, groups tended to work more on the first and second floor and there were no groups over two that studied on the third floor. I am currently expanding upon this research through more data collection and more focus on the affordances themselves, such as whether they are socio-interactive or socio-fugal, in an attempt to find a more specific answer to why certain genders study in certain environments.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Seaton, Thomas	Jazwinski, Christine	Psychology

Investigation of Nitration Reactions for Organic Chemistry 1 Laboratory

Aromatic organic compounds were nitrated and the viability of the products was evaluated for use as one of the first experiments in CHEM 310 Organic Chemistry 1 laboratory. The product needed to fit the criteria of being a solid which could easily filter, recrystallized, produced in high yield and give a distinguishable IR spectrum. Also, the starting material and the product should be easily distinguished by thin layer chromatography (TLC). Different methods were used to nitrate the organic compounds such as sulfuric acid and nitric acids, phosphorus pentoxide and the use of microwave or ultrasonic radiation to facilitate the reaction. Green chemistry was a factor in method selection as well as reaction time and ease of product formation.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Eisenschenk, Glen	Leenay, Tamara	Chemistry

The Impact of Stoichiometry on Competitive Interactions in a Detritus-Based Stream Invertebrate Community

Ecological stoichiometry (ES) is a field of ecology that views interactions as complex chemical reactions. In these reactions, conservation of matter and energy, as well as mass balance considerations, allow scientists to understand important processes in a mechanistic way. ES has been particularly useful for understanding food-webs, nutrient cycling and consumer-resource interactions. Perhaps the greatest tool provided by ES is the ability to identify consumer needs and resource quality in the same units. ES describes resource quality using elemental nutrient ratios and resource needs using the elemental nutrient ratio of the consumer itself. This places both consumer and resource in the same terms, making comparisons easier, not only between resources and consumers, but also between different types of resources and consumers. Although ES has been successful in describing competitive interactions in autotrophic systems, particularly for phytoplankton communities, it has not been explored as extensively in others systems or for metazoans. The proposed project will examine the usefulness of using stoichiometry to understand competitive interactions within a detritus-based stream invertebrate community and will be one of the first studies to examine the stoichiometry of resource competition for metazoans.

Presentation Index: B-B 43 **Present Time:** 9:00 AM

Student Presenter(s):	Sponsor(s):	Department(s)
Deans, Carrie	Voelz, Neal	Biological Sciences

How to Perform a Job Analysis of an Electrical Engineer

A job analysis of an electrical engineering position was completed at a large, Midwest Power Company. The purpose of the job analysis was to determine the necessary knowledge, skills, and abilities needed to perform the task and job functions. A job description was the final product, which included information on job title, exemption status and position reporting to, department, creation date, update date, job summary, education, experience, knowledge, skills, abilities, physical effort, working conditions, supervision exercised, core responsibilities and essential functions. The focus of this presentation will be on the methodology used to perform the job analysis. A sample job description will be displayed as well as a step by step process of the job analysis performed. Different applications of this job analysis product will also be examined.

Presentation Index: B-B 44 **Present Time:** 9:00 AM

Student Presenter(s):	Sponsor(s):	Department(s)
Shelton, Lisa; Mazour, Audra	Illies, Jody	Psychology

Investigation of Multiple Fingerprinting Methods to discriminate between Bacillus cereus group I bacteria

Members of the Bacillus cereus subgroup 1 of bacteria are aerobic, gram-positive, spore-forming rods that are found in the soil. Because of their ubiquitous nature in the environment, and the ability to form spores which resist heat, dehydration, and chemical disinfection, they remain as contaminants in many foods, including rice, honey, dried soups, and spices. These strains of bacteria are known to produce toxins which can induce two types of food poisoning (severe vomiting or diarrhea) in humans. In addition, Bacillus cereus can cause more serious infections in individuals living with a compromised immune system, resulting in endocarditis, meningitis, and pneumonia, as well as severe eye infections. Recent technologies such as DNA fingerprinting have been utilized to track the source of food poisoning caused by organisms such as Salmonella, E. coli, and Listeria. The goal of this research was to test the effectiveness of two current DNA fingerprinting methods for the discrimination between Bacillus cereus strains isolated from various food items. Strains of Bacillus cereus previously isolated from several foods were fingerprinted by multiple methods. These methods were then evaluated for ease of use, cost and discriminating power in differentiating individual strains of B. cereus.

Presentation Index: B-B 45 **Present Time:** 9:00 AM

Student Presenter(s):	Sponsor(s):	Department(s)
Miller, Tyler; Lindfors, Jeanette	Gulrud, Kristin; Schrank, Gordon	Biological Sciences

Video Field Selection Errors When Measuring Collegiate Volleyball Jump Heights

Accurately determining vertical jump heights of outside hitters (OH) during competition limits the procedures one can use to either video or flight time (FT) methods. Since the video method would require a large calibration space and several cameras, the FT method was chosen and tested for its efficacy in this situation. The FT method has been shown to overestimate jump height 3% (McMillan) due to the nature of the knees and ankles being slightly flexed upon landing compared to full extension (dorsi-flexion) during takeoff. The purpose of this study was to determine the jump height error associated with the method of selecting the takeoff and landing video fields. Subjects included three D-II Collegiate OH. A video camera was placed at floor level to determine when a subject's feet would leave the floor at takeoff and when the feet first touched the ground upon landing. Multiple maximal jump height trials were obtained. Video clips were then captured using Dartfish. Possible sources of error using this method include over or underestimating flight time due to counting frames. To minimize error, the method used in determining the most accurate flight time was done by starting frames when the toe was still in contact with the ground on takeoff and stopping at the frame before the toes were in contact with the floor. This effectively eliminates the over and underestimation due to frame count. There is still an error due to body position at takeoff and landing. During a volleyball game, OH jump heights fluctuate between 43-48 cm. A 1.5 cm error is approximately 3%, which is well within an acceptable range of error that would allow video-taping to be used to determine jump height during competition.

Presentation Index: B-B 46 **Present Time:** 9:00 AM

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

The Role of Toxoplasma gondii Cell Cycle Proteins in the Perturbation of the Cell Cycle of Budding Yeast Saccharomyces Cerevisiae

The progression of the parasitic organism Toxoplasma gondii's cell cycle is regulated by a number of different genes. Previous experiments have shown that the orthologs of some of these genes can affect the growth of the model organism Saccharomyces cerevisiae. To test the effect of these genes on yeast growth, a Gal-1 promoter system was incorporated into the destination vector. The system allows the expression of a chosen gene to be turned on or off depending on the carbon source, in this case the growth media. When the gene was put into a plasmid and then into S. cerevisiae, the genetic switch allowed the gene of interest to be expressed in galactose media, but not in glucose. If the growth was seen to be different in the two medias, it would appear that the gene was somehow affecting the growth of yeast. A slight difference in the growth of yeast in glucose and galactose is expected to occur simply because the system involves an energetic difference. Glucose is the preferred carbon source and feeds into the glycolytic pathway. When galactose is present, it can be used as an energy source, but there is a slight delay due to the steps needed to convert galactose into glucose before it is able to be processed in the glycolytic pathway. Using yeast growth as an experimental system, we hypothesized that the gene of interest would have a significant effect on the growth of yeast in the galactose media. Investigation of the impact of these genes on yeast growth allows for a greater understanding of the link between the functional roles of these Toxoplasma genes and their effect on cell cycle.

Presentation Index: B-B 47 **Present Time:** 9:00 AM

Student Presenter(s):	Sponsor(s):	Department(s)
Wade-Ferrell, Jessica	Kvaal, Christopher	Biological Sciences

Speech-Language Pathologists' Perceptions of Employer Emphasis on Health and Wellness

This study sought to ascertain speech-language pathologists' (SLPs) thoughts on health and wellness in the workplace in order to answer three questions: 1) How well do employer policies support SLP health and wellness? 2) What training programs are in place to protect employee health? And 3) What wellness programs or services are offered by employers? Graduate student researchers developed a survey of 1-5 rating-type responses and an interview consisting of eight open-ended questions. Participants consisted of 30 randomly-selected SLPs primarily from the Midwest who worked in educational and medical settings. To enhance reliability, student researchers underwent two short training sessions for conducting the interviews using the Observation-Interview method. Student researchers conducted the interviews in person or over the phone. Participants completed the surveys then submitted them by mail. Results suggested that many SLPs have workplace policies that support employee health and wellness through such things as absenteeism procedures and guidelines, procedures for infection control and a variety of employee benefits. SLPs indicated that many employers offer training and continuing education in health protection, which is professionally relevant for dealing with the SLPs' clientele who typically have health impairments. According to SLPs' responses a variety of wellness programs and services are being offered to support employee health and wellness needs, even though some respondents indicated a desire for improvements. Overall, the majority of SLPs indicated adequate employer provisions for the maintenance of health and wellness.

Presentation Index: B-B 48 **Present Time:** 9:00 AM

Student Presenter(s):	Sponsor(s):	Department(s)
Meyer, Greta; Anderson, Anne; Degenhardt, Kristi; Shoberg, Krista; Flaherty, Brenna	Whites, Margery	Communication Sciences and Disorders

Sythesis and Characterization of 5,6,11,12-tetrachlorotetracene

The promise that organic semiconductors have shown for use in new and existing electro-optical devices, has spurred an interest in the solid state structure property relationship of these materials. The synthesis and characterization of 5,6,11,12-tetrachlorotetracene has been completed. Single crystals will be grown via physical vapor transport. Due to the charge distribution on the molecule, it has been shown that single crystals of this compound form a n-stacking arrangement, as compared to the herringbone arrangement of its parent compound, tetracene. Charge-carrier mobility is an important property of these materials for their applications in these devices. The n-stacking arrangement is expected to show enhanced electronic coupling resulting in increased charge-carrier mobility.

Presentation Index: B-B 50 **Present Time:** 9:00 AM

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

Finite Element Simulation for Ultrasound Vibrometry and Wave Propagation in Anisotropic Biological Tissue

Shearwave Dispersion Ultrasound Vibrometry (SDUV) has been developed to provide quantitative measurements of tissue elasticity and viscosity, which are related to tissue pathology status. The current SDUV is based on a solution of wave propagation in isotropic tissue. However, most human tissues are anisotropic such as blood vessel, muscle and myocardium. In this work, Finite Element Method (FEM) is applied to investigate the relationship between tissue property and sound wave propagation in anisotropic tissue. This work is partially supported by a joint NIH grant between Mayo Clinic, Connell University, and St. Cloud State University.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Liu, Yu	Zheng, Yi	Electrical and Computer Engineering

Development of gas chromatography mass spectrometry, liquid chromatography mass spectrometry and high performance liquid chromatography methods for the detection of ethylene glycol ethers

Ethylene glycol ethers (EGEs), e.g., 2-butoxyethanol (BE), are excellent solvents. For this reason they are used in many industrial and commercial products. Upon human use these solvents are discharged into waterways. Accordingly, both humans as well as aquatic animals are exposed to EGEs. Exposure to EGEs results in various toxicities including encephalopathy, hemolysis, metabolic acidosis, carcinogenesis and mutagenesis. The actual concentrations of EGEs in waste water discharges are not clearly established accordingly, the objectives of this research project is to develop methods to determine the presence of butoxyethanol (BE), one of the most common EGEs used, and its possible metabolites butoxyacetaldehyde (BAL), and butoxyacetic acid (BAA) in waste water sample. In this regard we have already established that the gas chromatography mass spectrometry technique is a poor method for their quantification. We are currently in the process of developing liquid chromatography mass spectrometry method for this purpose.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Cheng, Shiang Kai	Sreerama, Lakshmaiah	Chemistry

Modulation of human liver aldehyde dehydrogenase (ALDH3A1 and ALDH9A1) activity by glyoxal and methylglyoxal may lead to non-alcoholic steatohepatitis (NASH) and diabetes

The progression of hepatic steatosis to non-alcoholic steatohepatitis (NASH), a form of liver disease, is due to the consumption of high fructose corn syrup (HFCS) which causes oxidative stress and leads to the formation of reactive oxygen species (ROS). This further result in the generation of reactive aldehydes such as glyoxal and methylglyoxal. Presently, it is unknown whether the human aldehyde dehydrogenases (ALDHs), a group of enzymes that catalyze the oxidation of glyoxal and methylglyoxal, and if the acid products are toxic. Moreover, there a possibility that these two substances are capable of inhibiting the human liver aldehyde dehydrogenases. Therefore, this research intends to determine whether glyoxal and methylglyoxal are substrate/inhibition of human ALDHs. In this regard, we have isolated and purified the isoforms of human ALDHs, ALDH3A1 and ALDH9A1 and tested whether glyoxal and methylglyoxal are oxidized by these enzymes. Methylglyoxal appears to be a substrate for these enzymes; however glyoxal appears to be a weak substrate. We are currently in the process of determining whether glyoxal and methylglyoxal inhibit ALDH3A1 and ALDH9A1 using their natural and/or surrogate substrates. The outcomes of this research are expected to have an impact on NASH patients that may lack the production of ALDH in the liver due to the interference of methylglyoxal and glyoxal. In addition, this research increases the understanding of the reaction between ALDH with methylglyoxal and glyoxal, respectively.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Tey, Chih Hsiang; Tay, Yii Van; Ong, Ta Ren	Sreerama, Lakshmaiah	Chemistry

Stimulated Brillouin Scattering of Laguerre-Gaussian Beams

Methods of inexpensively and efficiently converting a Gaussian beam into a Laguerre-Gaussian (LG) beam are explored in an effort to observe the phase conjugation of a LG beam by stimulated Brillouin scattering. Stimulated Brillouin scattering is a non-linear process that occurs when an intense electric field, in the form of a laser, passes through a susceptible medium resulting in over 90% of the incident beam being back scattered or reflected. LG beams have a vortex or doughnut shape with the photons carrying integer values of orbital angular momentum. In this work different bleaching solutions are applied to film containing images of computer-generated holograms to optimize the transformation of a Gaussian into an LG beam. After observing stimulated Brillouin scattering with the LG beam, the backscattered beam will be analyzed to detect if orbital angular momentum of the backscattered beam is reversed.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Seidel, Aaron	Bigelow, Matthew	Physics, Astronomy and Engineering Science

Scientific Glass Blowing and Its Applications

Scientific glassware is a necessary part of any chemistry lab. Most of the glassware used on an everyday basis must be hand blown by a person and the knowledge I will provide will give most viewers a newfound respect for the equipment they use. In this modern era of chemistry the art of scientific glass blowing has been lost to the majority of chemists. In this presentation I will attempt to rekindle an interest in this important trade. I will describe how having a basic knowledge of glass manipulation could save money in glassware repair and would give more flexibility with what kind of labware could be used for specialty applications. The viewer will be given a background knowledge of the equipment as well as the techniques of manipulating glass. A torch and some finished pieces of glassware will be shown to the viewer to explain how complex apparatus could be created.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Bordwell, Benjamin	Neu, Donald	Chemistry

Session C-C | **Paper Competition-2** | **Cascade**

Janus Tyrosine Kinase 3 Inhibitor WHI-P131 Induces T-Regulatory-Type Immune Response in NOD Mice

T-cells are the crucial players in autoaggresion against insulin-producing beta cells that results with a development of autoimmune type 1 diabetes (T1D). There are different subtypes of T-cells that exhibit protective and pathogenic roles in the beta cell destruction. They can be distinguished by their surface molecular markers as well as by the specific cytokine profiles. T-cells express cytoplasmic signal transduction molecule JAK3, which in vivo inhibition by a specific JAK3 inhibitor WHI-P131 was implied as protective in development of diabetes in a NOD mouse model of T1D. It was confirmed that WHI-P131 has direct effects on isolated CD4+T-cells in vitro .Therefore, the goal of this study is to determine whether WHI-P131 induces generation of Treg cells in vitro (in isolated CD4+ T-cells) and in vivo (post treatment of NOD mice by this experimental compound). The CD4+ T-cells were isolated from the spleens of 5-7-wk old NOD mice by positive magnetic separation. The cells were exposed to three different concentrations of WHI-P131 (6, 3, and 1.5 ug/ml) and rapamycin (1000, 100 and 10nM) and cultured for the three-week-culture period. The characterization of Treg cells was based on the cytokine profiles (IL-10, IL-4, IL-2, IFN-Y and TGF-B) obtained from in vitro and in vivo treated CD4+ T-cells of NOD mice. It is found that WHI-P131 induces generation of Treg cells in vitro as well as in vivo; clearly confirming that WHI-P131 exhibits protection by inducing Treg cells.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Goh, Kah Yong; Maher, Michael; Olson, Marin; Ertelt, Katie; Nandlal, Larita; Ghate, Ketaki	Cetkovic-Cvrlje, Marina	Biological Sciences

Anti-Discrimination at Work and the Tata Group of Companies: A Case Study

The India-based Tata Corporate is one of the world's largest private sector employers. With over 350,000 people worldwide (Tata Group of Companies, 2008), revenue of $62.5 billion (2007-2008), and an existence of over 140 years (Tata Group Profile, 2008), the Tata brand name has been respected worldwide for its adherence to strong values and business ethics. The purpose of the Tata Group is to improve the quality of life of the communities they serve. The group firmly believes that talented professionals are among its most vital resources (Tata Human Resources, 2008). And to nurture its extremely diverse and huge body of highly talented professionals, Tata makes every attempt to provide a healthy ambiance, a working environment conducive of bringing out the very best out of the employees. In this essay, we examine the employment policies and anti-discrimination laws laid by the Government of India, followed by an analysis of the socio-economic structure and practices prevailing in the country and an examination of the factors that make it difficult to actually implement the laws as intended. We then scrutinize how the Tata Group embraced the law, adapted to the socio-economic factor and formulated the company strategies to eradicate employment discrimination, prevent and correct unlawful prejudice within the Tata Family of Employees.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Das, Debjani	Schmidt, Mark	Business Computer Information Systems

Math requirements and the popularity of the economics major: A cross-sectional study of the United States.

Decisions regarding curriculum requirements have both intended purposes and sometimes unintended effects. One decision faced by economics departments is whether their undergraduate program should require calculus. The requirement may deter some students from choosing an economics majors, decreasing enrollments and perhaps reducing the size of the economics department. This paper uses an econometric model relating the percentage of a schoolâ€™s degrees that are awarded to economics majors to a series of independent variables, including the math requirements necessary to complete a degree in economics. Other variables included in the model consider the existence of a business degree, rankings of both departments of economics and liberal arts colleges, whether the school is public or private, and the size of undergraduate enrollment. The distribution of the SAT math scores of incoming students at the school is used as a proxy for the mathematical ability of the average student. Analysis is performed on a sample drawn from the National Center for Education Statistics (NCES) website of 671 U.S. colleges and universities that graduated at least one major in economics in the 2006-07 academic year. The model is then used to estimate the minimum predicted SAT Math score necessary for a school to expect to not see a depressing effect to enrollment in the economics major by requiring calculus.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Nicklay, Matthew	Rebeck, Kenneth	Economics

Understanding the Demographic & Psychographic Predictors of Online News Adoption: Exploring the Digital Divide in Minnesota

This paper examines the demographic and psychographic factors that influence the adoption of online news. It also investigates how this information correlates to the innovation diffusion theory of technology. Data for this study was collected using a questionnaire and distributed via a multi-stage stratified random sampling of 1,000 Minnesotans. Internet use, attitudes toward technology and basic demographics were among the variables evaluated. The findings indicate that affluent socio-economic factors and age are positive predictors of internet news adoption. Increased use of the internet, its services and the use of new technologies are also indicators of internet news adoption. Furthermore, the results of this study support the idea of a digital divide.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Isaacson, Kristin	Ahmed, Niaz	Mass Communications

Session C-GN **Language-1** **Glacier North**

Fredric Jameson and Postmodernism

Fredric Jameson connects postmodernism and consumer capitalism in the U.S. in his essay, "Postmodernism: The Cultural Logic of Late Capitalism." Through close reading, I analyze the ways in which his beliefs are linked to a desire to maintain history's high modernism that is no longer possible within our changing culture. He believes that the individual no longer exists, that postmodernist space is characterized by technological alienation and that we are now living in a present that is caught in the past. I will discuss Jameson's skepticism and concern for today's disorientation with reality and what questions this essay raises about our culture.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Hoffman, Katie	Dorn, Judith	English

To Tutor Before Teaching: Dispelling Myths Surrounding English Graduate Assistantships

Across the United States, graduates of English programs are finding increased opportunities for employment. This employment, located on University and High School campuses, is directly connected to an increase in the numbers of writing centers and writing labs. This expansion has also created new assistantship opportunities for graduate students. Where only a teaching assistantship may have been available, some graduate students are now offered the choice of a teaching assistantship or a tutoring assistantship. With this expansion of assistantships, new assumptions have arrived. One hypothesis states that graduate students should be required to work within writing labs before they are allowed to work as teaching assistants. An underlying assumption of this hypothesis states that the ability to carry out one-on-one tutoring sessions prepares a graduate student for various teaching duties. This hypothesis has not been challenged. The following paper reviews the results of a survey shaped around this assumption. Focusing on a limited number of Saint Cloud State English students, students who were first year teaching assistants, the concept of proving or disproving if a certain order be given to English graduate assistantships was attempted. The results do not offer a definitive solution to the question postured. This paper does, however, offer clarity on how further research could be approached to locate a definitive answer. Showing the results, limitations and insight found through the limited survey, this paper offers opportunity for more refined research into the affects of teaching on future tutoring skills and tutoring on future teaching skills.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Klint, Karl	Mohrbacher, Carol	English

Language Acquisition at a St Cloud Chinese Immersion School

The first part will define acquisition planning which includes definitions language planning (Corpus, Status and Acquisition planning). The paper goes into Language-In-Education Planning, which is part of acquisition planning. The second section focuses on Language Immersion Schools - where they started, and how it all started in St. Cloud with the Chinese and Spanish Immersion Schools. Some discussion to the following questions will be addressed. What was the motivation to begin the school? When did it begin? Who started it? Why did District 742 choose Chinese and Spanish? Who are the teachers and where did they come from? What is the qualification of these teachers? Was it hard to find qualified teachers? How and when do students learn academic English skills? Which subjects are taught in the L2 (second language) and which are taught in the L1 (first language) who are the students and what is their background? How the program was initially 'proposed' to the district? Is there a special 'budget' for this program? What are the overall goals of the program?

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

Student Presenter(s):	Sponsor(s):	Department(s)
Perbix, Lisa	Koffi, Ettien	English

Acoustic Analysis of Three NAE Vowels by Native Minnesotans

The purpose of this research was to acoustically analyze the production of three North American English vowels as produced by four native Minnesotans. The three vowels that were examined are the /ae/ in bag, the /o/ in toast, and the /e/ in aid. A computer was used to record each subject saying eight words. Two of the words contained /ae/, three of the words contained /o/, and the final three contained /e/. A computer program named Praat was then used to perform the acoustical analysis. Praat produced a spectrogram for each word that allowed for formant analysis, pitch analysis, and durational analysis to be performed. The results of the formant analysis showed that the males and females followed the same pattern of production when they were averaged into two groups separated by gender. In general, the female subjects produced vowels that were lower and more fronted than those produced by the males. The pitch analysis showed that the male subjects produced the vowels with a lower pitch than the females. The durational analysis showed that when the vowel was followed by a voiced consonant or when it was not followed by a consonant, vowel production was longer than when the vowel was followed by a voiceless consonant. These results follow the pattern seen in similar studies. This study is a precursor to further research that will be conducted at a later date. It must also be remembered that the results themselves are limited, due to the small size of the research group.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Koon, Dustin	Koffi, Ettien	English

Session C-GS | **German** | **Glacier South**

Stearns County German: Andreas Job's Life in Oak Township

Stearns County attracted many Germain speaking settlers from many different countries and states of the Prussian Empire. Settlers who came to the Sauk River Valley of Stearns County faced many challenges including: backbreaking labor, the challenge of turning woods and prairie into farmland with few tools, plagues of insects and diseases, death, hostility and attacks by Natives. This narrative is about the life of Andreas Job, an early settler to Oak Township, Stearns County.

Presentation Index: C-GS 1 **Present Time:** 9:10 AM

Student Presenter(s):	Sponsor(s):	Department(s)
George, Marisa	Mueller, Isolde	Foreign Languages and Literature

Populist Politics in the St Cloud German Immigrant Communitiy, 1890's

This paper will present research into the political leanings of the German-American community of the St Cloud area in the so called "Gilded Age" of the late 19th century. I will be using articles from the local German language newspaper "Der Nordstern" to assess the stance of the paper on issues related to the rise and fall of populism in this period. I will be looking primarily at the election years of 1892 and 1896 in an attempt to determine the extent to which the political opinions expressed by the paper fall into line with or differ from the platforms of the major parties, including the People's Party.

Presentation Index: C-GS 2 **Present Time:** 9:30 AM

Student Presenter(s):	Sponsor(s):	Department(s)
Lundgren, Naomi	Mueller, Isolde	Foreign Languages and Literature

The German Language in Central Minnesota

I have been doing research at the Stearns County History Museum for the last one and a half semesters. During that time, I have been reading the old German newspaper, The Nordstern, that circulated in central Minnesota. I found a few interesting articles on the application and usage of German in everyday life. I then decided to look further into this subject for a project for my German Major. For my presentation, I am going to discuss my findings and my interpretation of what I have read, including a brief history of the newspaper and the area, in terms of the German population. I will also be discussing the (lack of) need for the language and it's eventual phasing out of the language in central Minnesota, specifically the Stearns County area.

Presentation Index: C-GS 3 **Present Time:** 9:50 AM

Student Presenter(s):	Sponsor(s):	Department(s)
Petersen, Lucas	Mueller, Isolde	Foreign Languages and Literature

Heirs of Guilt: The Forgotten Victims of World War II

In the summer of 1946 my German grandparents sent a letter to my father in the USA, describing their horrific experiences during World War II. This was among the first letters from them since 1941, and in it they described their evacuation of their home in Breslau, Germany, on two hours' notice in the bitter cold of January 1945. This evacuation, often called the "Mothers' Death March," is the central theme of my project. I have been doing research to learn the background of this event, as well as to learn about the experiences of others who survived this evacuation. I plan to examine the conditions in Breslau before and during World War II: for example, what conditions led the citizens of Breslau to support Hitler? What happened after the First World War that put Breslau in a more precarious position than other German cities? I will pose the (perhaps unanswerable) question: when and why did my grandparents change their minds about Hitler? I will describe the situations of the other family members in Berlin and in the USA, and analyze how conditions in Germany affected them. I will also recount and discuss the lives of my grandparents as refugees in their own country.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Younker, Kathleen	Mueller, Isolde	Foreign Languages and Literature

1096 Rhineland Persecutions: Inhumane Economics

In 1096, masked by the dominant geopolitical and religious affair known as the First Crusade, and long before the armies of Christendom engaged their religious enemies of the Crescent, over three thousand Jews of Germany's Rhineland communities were persecuted by the passing crusaders and their Christian neighbors. Aside from the surprise of the massacres during times of peace in the Rhineland, it was the variety of the perpetrators ranging from crusaders to neighbors that makes this event so distinct. Through investigation, an attempt will be made to flush out what economic motives may have driven the event, or at least what motives economic influenced the participation of such differing perpetrating groups. Though previously investigated and now largely ignored, the suffering of the Rhenish Jews retains its importance as the root of medieval intolerance. Yet despite its importance, the events have been overlooked due to the banality of persecution in such "dark" times known as the Middle Ages. Therefore, much can still be learned about the event which took place, and subsequently addressing the motives that inspired the 1096 massacres will also shed light on the initial roots of motivation for persecution during the Middle Ages.

Presentation Index: C-GS 5 **Present Time:** 10:30 AM

Student Presenter(s):	Sponsor(s):	Department(s)
Rogers, Jacob	Mueller, Isolde	Foreign Languages and Literature

Session C-VN **Science & Engineering-1** **Voyageurs North**

Fluorescence Life Time Study of Tetracene Single Crystal

Fluorescence studies of tetracene using time resolved laser spectroscopy were conducted to ascertain the fluorescence lifetimes and emission spectra of tetracene. Single crystal (SC), dilute solution (DS) and concentrated solution (CS) of tetracene (2.0x10-6 M and 5.0x10-5 M in cyclohexane) were tested using Nd:YAG(532) in conjunction with a tunable dye laser module at 77K and 298K. Tetracene showed lifetime fluorescence temperature dependence yielding longer fluorescence lifetimes at 77K than 298K for all SC, DS and CS, as was expected. All tetracene spectra (SC, DS and CS) showed red shifting at 77K as compared to 298K.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Leet, Jason; Relph, Dana	Dvorak, Michael; Lidberg, Russell	Chemistry, Physics, Astronomy and Engineering Science

Effects of Population Density and Storm Reports in Minnesota from 1985-2005

The primary objective of this study was to determine whether population density has played a role in the severe weather reports in Minnesota from 1985-2005. A secondary objective of the study was to determine if the mean node of all reports on a yearly basis was near the mean node of the population density. The data for the time period was analyzed using geospatial, statistical and spatial analysis tools in ESRI ArcMap 9.3. Interpretations of the data suggest that population density is directly related to severe weather reports in the State of Minnesota during the study time period. Evidence also suggests that the mean node for all reports is close to the mean node of the populated places.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Stanga, Michael	Wixon, Lewis	Geography

Ergonomic Redesign and Evaluation of a Workstation to Reduce Worker Injuries

The goal of implementing an ergonomics approach in an industrial workstation is to achieve an appropriate balance between employees' capabilities and work requirements. The application of ergonomic principles helps to optimize production efficiency, safety and worker comfort. The purpose of this project was to investigate one of the production lines in a freezer manufacturing factory based on ergonomics. The operators on the specific line faced some shoulder pain which was caused by inappropriate repetitive movement. To analyze the scenario, the production line was broken down into specific tasks and each one was evaluated with the stress analysis evaluation form. This presentation will discuss the recommendations made to the company to solve the problem.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Quek, Yi Lin; Sanam, Sri Harsha	Shah, Hiral	Mechanical and Manufacturing Engineering

Post Storm Survey

St. Cloud State University, as well as several meteorologists from the National Weather Service office in Duluth, MN collaborated to develop a Post Storm Survey (PSS) to be available online following winter storms. The objective of the Post Storm Survey is to gain insight into decision-making related to hazardous winter weather. The PSS questions are aimed to gather local customer input and gauge how the public understands and reacts to weather forecasts. This information will be vital for the weather forecasting community in learning to better communicate the threat of hazardous weather. During the test season period of March through April 2008, there were three separate winter events that served as Post Storm Survey cases gathering over 500 survey respondents. These cases included a snowfall event, a mixed precipitation event as well as a major Blizzard. This presentation will discuss the development of the project, the test season results, where the Post Storm Survey project is headed in the future and how others can participate.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Taraldsen, Matthew	Hansen, Anthony; Stangl-Erkens, Suzanne	Communication Studies, Earth and Atmospheric Sciences

Session C-VS | **Behavioral Sciences-2** | **Voyageurs South**

Marked by Faith: the Rhetorical Power of Christian-based Charities

The United States claims to operate under the ideal of the "Separation of Church and State." Yet, faith-based charitable organizations such as the Salvation Army and Catholic Charities USA have tackled many issues that should be the government's duty. Examples of such issues include poverty, hunger, homelessness and care for soldiers. Through visual and spoken rhetorical strategies, these two charities have linked the supposedly separate religious and nationalistic domains, making the duty to nation an act of religious duty. Such acts have not gone unnoticed by the public or the government. In fact, the White House continues to play a financial role in supporting such organizations. Recent movements by the W. Bush administration have shown continued backing of these kinds of social programs. This presentation will explore the patriotic religiosity expressed in the rhetorical strategies of the Salvation Army and Catholic Charities USA. In addition, it will uncover the U.S. Government's place in supporting such inherently religious organizations, raising questions for further discussion and research on the ever-contested separation of church and state debate.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Jaspers, MaryEllen	Miller, Shane	Communication Studies

The Working Place Problems of Working Women

This paper aims to research how gender disparities shape women's experiences in the labor force. My analysis relies primarily on the research of sociologist. My goal is not to offer comprehensive histories of women work place problems, or to detail the experiences of all groups of women in the workforce, but to document the process that shape work opportunity and how opportunities have been divided among gender all over the world. To do this I looked at literature on women and work, I also explore the American workplace in the larger context of an integrated global economy. Women are burdened in their economic attitudes and activities by a whole baggage of discrimination in the workplace labor force. The main problems are discrimination against pregnant women, women with children and the potential of sexual harassment in workplace. I found out that the subordination of women that is part of the everyday workings of social institutions has far greater consequences for women as a group than do personal expressions of sexism. The unequal economic status of women not only results from the personal sexism of potential employers but is tied to larger economic structures and institutional forces.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Adjei-Bosompem, Eunice	Greider, Paul	Sociology and Anthropology

Emotional Intelligence in Higher Education

Many theories explore the evolution of "great" leadership and in today's society it is imperative to examine and compare the characteristics that may or may not be a determining factor to "great" leadership. This study assesses the correlation between leadership ability and effectiveness to emotional intelligence in practice. Emotional intelligence has become a very popular topic in psychology, management, and leadership since the book Emotional Intelligence by Daniel Goleman was published in 1995. Lastly, we'll investigate if the role of emotional intelligence appears differently within the realm of higher education as emotional intelligence is generally associated with industry leadership.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Klepetar, Adam; Kuznia, Jodi	Mills, Michael	Counselor Education and Educational Psychology

Understanding the Experience of Parents Employed at Midwestern Postsecondary Institutions

The demographics in higher education have changed considerably over the past few decades, with more women entering the ranks of the faculty and administration. As more women have entered the academy, and as more men have wanted to or been required to more actively participate in care giving roles, the issue of work/family balance has received increased attention. What has risen as a women's issue on campus, has been more recently noted as a family matter, affecting both mothers and fathers employed at higher education institutions. Conversations regarding work/family balance and the climate of the academy towards parents have surfaced. This mixed-methods study gives a voice to parents who are working at Midwestern postsecondary institutions and raising young children. Through questionnaires and interviews with four couples, the experience of these parents was explored. The main themes that appeared over and over again throughout the interviews included: an intense and heightened feeling of being rushed and stressed, the benefits of working in higher education while raising a family, how gender plays a role in work/family balance and the co working relationship. Parents identified several of the benefits associated with working in higher education, including flexibility and access to educational programming for the entire family. Parents have made numerous sacrifices in their personal and professional lives due to the pressures and stress that are related to the demands of a career in higher education and the demands of children. Further and ongoing research is necessary to define the specific needs and the prioritization of these needs on individual campuses. Training and education on gender differences and expectations have potential to influence the creation and implementation of future policies and a family-friendly atmosphere on college and university campuses.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Jacobson-Schulte, Marah	Imbra, Christine	Counselor Education and Educational Psychology

Session D-C **Paper Competition-3** **Cascade**

From Synthesis to Chemoprevention: Application of Novel Goniothalamin Analogues On MCF-7 Cells For Assessment of Cytotoxicity

Goniothalamin, a natural product from the plant species Goniothalamus, has shown significant anti-cancer activities in the literature alongside a variety of derivatives. Three Goniothalamin derivatives produced in the laboratory of Dr. Mark F. Mechelke have been created in which the lactone ring has been replaced with a lactam. This study analyzes the altered anti-cancer properties of these compounds as compared to Goniothalamin. Via cell culture techniques, bioassays have been performed to develop a larger picture relating the relevance of the lactam ring on goniothalamin's anti-cancer properties as a whole.

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

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

The Making of a Self-Made Man: Rock, Hope, and Bruce Springsteen

The rock star, along with other forms of celebrity, is often looked at as an icon, an idol, or even a role model. To look at Bruce Springsteen as a case study of this phenomenon is a way of analyzing the influence a rock star can have on their culture, or the influence the culture has on the rock star. In such a way, it can be seen what roles a rock star plays within their society, as well as what role various media play in that role. The idea of rock star as a public figure also necessitates the use of print media (magazines, newspapers), photography, websites and even symposiums. Thus, the works of Walter Benjamin and Marshall McLuhan and their studies of artistic reproduction and proliferation would be appropriate. I will also approach the question of the dissonance between artistic intent and public perception through cultural study approaches to media. I will also give analysis of specific aspects of Springsteen's career and art, such as his connection to his audience, his appearance on album covers, the musical and lyrical characteristics of his work and the way he is presented to us through magazines and other print media. Finally, what will be shown are ways in which popular culture alternately reflects and doesn't reflect the artistic intentions of the rock star.

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

Student Presenter(s):	Sponsor(s):	Department(s)
May, Mike	Mohrbacher, Carol	English

The Impact of Human Contaminants on Aquatic Environments: Adverse Effects on Fish

A wide variety of human contaminants are discharged into aquatic environments via treated wastewater effluent. In non-target aquatic life, modulation of hormone and neurotransmitter systems by exogenous contaminants may impair reproductive success via direct effects on reproductive anatomy and physiology, and via indirect effects on non-reproductive behavior. Such behaviors include an innate predator avoidance response. During a predator-prey confrontation, larval fish use an innate C-start escape behavior (regulated by an integrated sensory-motor axis) to rapidly move away from any threat stimulus. Nine separate experiments were designed which aimed to test the hypotheses that (I) adult fathead minnows exposed to human contaminants singularly and in mixture, will adversely affect the reproductive anatomy and physiology of male larval fathead minnows; and (II) larval fathead minnows exposed to human contaminants singularly and in mixture, will suffer a reduced ability to perform an innate C-start behavior when faced with a threat stimulus. Adult and larval fathead minnows were exposed to environmentally realistic (ng/L) concentrations of two classes of human contaminants [estrogens: estrone (E1), 17B-estradiol (E2), 17B-ethinylestradiol (EE2), estrogen mix (E-Mix); antidepressants: fluoxetine (FLX), sertraline (SER), venlafaxine (VEN), bupropion (BUP) and antidepressant mix (A-Mix)]. After adult male exposure (21 days), reproductive anatomy and physiology were analyzed using a vitellogenin (VTG) assay and histological techniques. After larval exposure (12 days), C-start escape performance was evaluated in response to a standardized threat stimulus. Adult exposure to E1, E2, E-Mix, FLX, and A-Mix caused significant production of VTG (protein needed for female fish production of egg yolk) in males and E-Mix exposure produced intersex in 50 % of exposed males. Larval exposure to E2, E-Mix, VEN, BUP and A-Mix adversely affected C-start performance compared to controls. This set of experiments newly demonstrates that reproductive success in freshwater fish is imperiled by their current environmental exposure to human contaminants.

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

Student Presenter(s):	Sponsor(s):	Department(s)
McGee, Meghan	Schoenfuss, Heiko	Biological Sciences

Session D-G | **Sociology-1** | **Granite**

Sociology of Work

The students in the Sociology of Work 455/555 course are presenting research papers are about work organizations, work experience and meaning of work. Their papers will reflect and apply the understanding of the sociology of work through classic and recent theories of work and its relationship between different occupational groups and their interactions in the workplace. Work is an institution and the sociology of work looks at the aspects relating to work in a sociology context. Thus, student papers explore the importance of monetary and non-monetary rewards for working. To do this, they have volunteered for various community organizations.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Dwyer, Cory; Scott, Lwando; Adjei-Bosompem, Eunice; Anastasi, Lisa; Geyer, Courtney; Jeyachandran, Rebecca; Kowalski, Amanda; Faidley, Kristen; Warner, Erik; Goemer, Amy; Pechonick, Tami; Buermann, Amy; Gyawaly, Anu; Horton, Alyssa; Larson, Benjamin; Martin, Cory; Olson, Brian; Palokangas, Preston; Scherek, Ashley; Schmidt, Kimberly; Schmit, Nicole; Sinton, Kelly; Tamba, Massa	Greider, Paul	Sociology and Anthropology

Session D-GN | **Applied Sciences-2** | **Glacier North**

On a Proposed Solution to the Continuum Problem

Set theory, considered to be part of the foundations of mathematics, is governed by axioms that are supposed to be self-evident or at least reasonably clear. The currently accepted axioms of set theory, known as the "ZFC" axioms, allow us to prove that there are different "levels" of infinity and that, for example, the infinity of points on the real number line is bigger than the infinity of the natural numbers (0, 1, 2, 3, . . .). These axioms do not, however, allow us to determine whether there is any set bigger than the set of natural numbers but smaller than the set of real numbers. The idea that there is no infinity strictly between these two infinities is known as the Continuum Hypothesis (CH). Kurt Godel showed that the CH could not be disproved from the axioms of ZFC, while Paul Cohen demonstrated that the CH also could not be proved from those axioms. Thus, the Continuum Hypothesis is independent of the axioms. Apparently, to settle the CH, set theorists would need to adopt additional axioms for set theory, but what new statements are strong enough to settle CH but still reasonable enough to be called axioms? One candidate is Projective Determinacy, which (informally) concerns strategies for "infinite games" that involve certain sets of points in space and their "shadows" on the real number line. We will consider some arguments for and against using Projective Determinacy as an axiom. You do not have to be an expert in set theory to understand this talk, but a basic understanding of sets and a curiosity about infinity is required and knowledge of symbolic logic is a plus.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Coss, David	Walk, Stephen	Mathematics

Sauk River Assessment

The Sauk River Watershed District (SRWD) is the district's primary provider of their expertise to protect and enhance the watershed's resources. Its secondary mission is to increase public's awareness of the environment and facilitate public's need to know the progress and efforts of SRWD to protect their environmental resources. This summary paper is written based on the expert knowledge learned from the SRWD and observations that are found while taking part in the field activities with the district's members. The observations include water-sampling process, water-flow measurement by using flow tracker, DO analysis by using DO meter, water level reading by using CR510 data logger, collecting number of eroded spots along Sauk River by GPS programmer and stream inspection at the Sauk Centre and Cold Springs. This paper describes the condition on the Sauk River watershed area such as the water quality of the watercourse and the impacts of land use pattern to the Sauk River system. Also, this paper will provide four major parameters: Fecal Coli form (FC), dissolve Oxygen (DO), total Phosphorus (TP) and total suspended solids (TSS), from the first, Sauk River-1 site (SR-1) located at the downstream of Sauk River. These parameters would be used to map the entire current water quality of Sauk River that flows into the Mississippi River.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Cheng, Shu Hui	Kasi, Balasubramanian	Environmental and Technological Studies

Human Trafficking and the United Arab Emirates

In this paper we intend to study human trafficking in the United Arab Emirates (UAE), specifically the trafficking of women for the sex industry. We want to know 'Is globalization forcing the UAE to change its policies concerning the sex industry?' The hypothesis in this study is that interaction with the world at large is making human rights issues prominent and that the (UAE) federation is starting to crack down on any violations that may endanger its reputation as a safe and suitable place to visit and conduct business. It is particularly important to study this phenomenon when we take into consideration that trafficking in human beings is now the third largest moneymaking venture in the world, after illegal weapons and drugs. For a place such as the UAE, which is trying to build its infrastructure around tourism and other non-oil sources of economic gain, it is important to study how the problem of human trafficking, particularly for the sex trade, is being handled.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Westerhoff, Susanne	Hassan, Aref	Political Science

Session D-GS **Innovation** **Glacier South**

A Comparison of Upper-Level Chemistry Majors' and Chemistry Experts' Knowledge of Physical Change and Environmental Topics

Reviewed literature has shown discrepancies in the existence of a correlation between students' abilities to reason and their knowledge of physical change in general chemistry courses. This study investigates subjects' abilities to provide scientific explanations about physical change and environmental topics. Subjects completed four instruments including a demographic survey, the classroom test of scientific reasoning, a physical changes concept test, and a questionnaire on environmental topics. A statistical analysis provided insight into the correlation among these instruments. Through these results, chemistry instructors may be more knowledgeable regarding the effects of students' reasoning versus their academic performance in the classroom. This information will show how important it is for educators to increase classroom activities to amplify students' ability to reason at a formal-operational level. Statistical data along with implications for teaching both reasoning and environmental topics will be presented.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Brandriet, Alexandra	Krystyniak, Rebecca	Chemistry

An Investigation into the Scope and Prospect of Virtual Existence of Businesses in Second Life

Virtual world can be regarded as an improvement over the two dimensional world wide web. It is a computer based stimulated environment where the users called as avatars interact, transact or socialize in the three dimensional graphical environment. Virtual worlds are not limited to just games but depending upon the needs it can be used as an interface for business, trainings, communication, and so forth. Second Life is one of such virtual worlds. Despite its popularity there is still a dilemma for those who want to use it for the real life purposes likewise to gather information, to promote products, to provide the information, to provide other services, etcetera. Hence, the paper gives an account on Second life. It gives general information on what the Second Life is and addresses the reasons for its popularity and scope. The basic questions it focuses on are: Can virtual world be a substitute for the web for the businesses and how reliable is second life information? Will the decisions taken on the basis of second life data and information and behavior study help those businesses? Since Second life has been in use for various uses like entertainment, business promotion and growth, aid to conduct government obligations, etcetera. Instead of covering all the areas the paper aims to describe how it has helped the business, and why it should be explored more in future.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Shrestha, Ritu	Oyedele, Adesegun	Marketing and Business Law

Minnesota Geographical Locations and Identity Assumptions

Photography has become the leading source of documenting our culture since the invention of documentary photography. Pioneers such a Diane Arbus and Garry Winogrand have created some of the most important depictions of American culture within the twentieth century. Exposing people for who they truly are and creating images worth more than what words can describe. My goal for this colloquium is to create a body of photographs that will depict and represent the daily lives of middle and lower class Minnesotans within the current recession. I believe that documenting small business owners, individuals at home and individuals in the public will create a visual novel. One that will become significant in connecting the dots of how during this time we all as community rely on each other for personal wellbeing. Images powerful enough that you are able to feel the need of a person begging for just a few more customers so that the mortgage can be paid for another month. Images that present the heroism to continue living a life and chasing a dream in the present day and age.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Smith, Mark	Sherarts, Theodore	Art

From micro to macro: Determining hydrodynamic properties of stalk forming pennate diatoms

Diatoms, an important component of the aquatic primary production community, are an ubiquitous single celled algae characterized by the presence of an often highly ornate silica cell wall, known as a frustule. In nature, diatoms display a vast array of frustule morphologies across their many genera and species. Several hypotheses have been suggested in an attempt to explain the evolutionary pressures driving the morphology of planktonic centric diatoms, including regulation of sinking rates, resistance to predation, and nutrient uptake. Pennate diatoms, distinguished by their elongate frustules, spend the majority of their life cycle out of the plankton, attached and growing on substrates such as rocks, macrophytes or other algae. These groups of diatoms have generally received much less attention and speculation on the development of their often intricate shapes. This study will be examining the selective pressures and advantages placed on several diatom morphologies in a moving water environment. Due to the diatoms microscopic size, hypotheses about hydrodynamic advantages have historically been difficult to test with any reliability. An atomic Force Microscope, a 3-D printer and a hydraulic flume will be utilized this to tackle this issue.

Presentation Index: D-GS 4 **Present Time:** 12:10 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Stepanek, Joshua	Julius, Matthew	Biological Sciences

Session D-LT | **Engineering** | **Little Theatre**

Defense & Combat Systems-An Insight into 21st Century Warfare

This paper aims to provide a deep insight into the significant changes that have been implemented in combat systems by the Armed Forces across the world between the eras of the early ages of mankind, the First and the Second World War even including the 21st Century. Using historical information and scientific ideas, viewers will be able to understand and comprehend the changes and developments that have come about in modern warfare. Topics will include/not limited to weapons and defense systems used by the United States Army, Air Force and Navy. Ranging from the Convair B-36 "Peacemaker" to the Lockheed Martin/Boeing F-22 Raptor, learn more about how weapons technology have modified today's warzones and changed the course of battlefield victories.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Ramdas, Goutham	Nicholson, James	Environmental and Technological Studies

FSAE Racecar

Formula SAE is an international student competition sanctioned by the Society of Automotive Engineers (SAE). Formula SAE is a competition for engineering students to conceive, design and fabricate a racecar for the purpose of competing against fellow undergraduate engineering students from other schools around the world. The fundamental concept behind the competition is that a manufacturing company has asked the team to build a prototype machine as a potential production item. The machine's target market is the weekend autocross racer. In order to be desired by their target market, the machine must meet specific criteria, including cost, size, performance and ease of manufacturability. This year's team is currently constructing SCSU's third entry into this competition.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Zollner, Justin; Nistler, Adrian; Kaiser, Timothy; Roggenkamp, Kyle; Klaehn, Isaac; Grow, Matthew	Miller, Kenneth	Mechanical and Manufacturing Engineering

Session D-VN | **Science & Engineering-2** | **Voyageurs North**

Hydrogen/Gasoline Hybrid System

The objective of this capstone project was to develop a hydrogen production process to increase the overall fuel efficiency in an automobile. This process of increasing fuel efficiency was done by using electrolysis to split water into its two elemental forms of oxygen and hydrogen gases. Once the water has been split into its elemental forms, it is then introduced into the combustion process. The goal of this project was to complete a hydrogen generator system and analyze the vehicles performance, fuel efficiency and emissions after implementation of the hydrogen system compared to before the implementation. From there it could be decided if it is economical, as well as environmentally friendly, to implement the generator in all the cars at the Minnesota Highway Safety and Research Center. If the project meets the deliverables of being more fuel efficient while giving greater performance as well as lowered levels of harmful emissions gases the project is considered a success.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Pederson, Nicholas; Johnson, Nathan; Simone, Jessica	Zhao, Yongli; Miller, Kenneth	Mechanical and Manufacturing Engineering

A Proposed Study and Analysis of User Perceptions of Biometric Acceptance

Biometrics offers much promise to maintain our identities without the inconvenience of carrying ID cards and/or memorizing passwords. Biometric based systems use physiological or behavioral characteristics that reliably distinguish one person from another. Thus, the identity is established on 'who' the user is rather than 'what' the user knows and remembers or possesses. Unfortunately, biometrics does not provide a failsafe authentication mechanism. In this paper we discuss about the basics of biometrics, various individual traits used by a biometric system to establish identifiers, and a comparative study of the advantages, disadvantages, and the perceived threat of using them. We discuss about user acceptance of biometrics by surveying the potential users. The results of our observation will be made available at the discussion.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Das, Debjani	Schmidt, Mark	Business Computer Information Systems

Integrating Prescribed Burn and Chemical Herbicide for the Control of Common Tansy Tanacetum vulgare

The continued collaboration between St. Cloud State University and the Department of Defense has already produced beneficial results for all parties involved. An agreement was signed in 2003 that allowed Researches from SCSU to access Minnesota's two military training sites with the intention of giving advice and management recommendations on how to handle the invasive plant species problem on these training sites. This collaboration has facilitated: two master thesis's, complete mapping of the invasive plants at the two military training sites, predictive modeling on where the invasive plants may be spreading, the release of thousands of biological control agents, five years of chemical control on seven different problem plant species, the testing of various different integrated control types and the creation of a website to share the knowledge gained thus far. The current SCSU researcher at these military sites has focused in on common tansy (Tanacetum vulgare). Common tansy is one of the most problematic species at the largest of the two military training installations, Camp Ripley. Common tansy has the most acreage of all the invasive plant species at Camp Ripley and is increasing rapidly. The experiment proposed and started will test if integrating prescribed burning and chemical herbicide treatment has a greater affect in reducing common tansy than un-integrated treatments of prescribed burning or chemical herbicides alone. The scope of this presentation will cover a brief introduction to common tansy and the study area, the experimental proposal and execution and finish with results and conclusions from the common tansy experiment.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Carlyon, Joseph	Arriagada, Jorge	Biological Sciences

Session D-VS **Language-2** **Voyageurs South**

A Program on the Slippery Slope of Slothful Syntax

In my presentation, I will explain the event "Program of Oral Interpretation". Program of Oral Interpretation is a competitive forensics (speech and debate) event. Forensics is an extra-curricular activity that allows our team to travel around the country competing in speaking competitions. In my particular piece I will address grammar and proper syntax and their disappearance from modern language. This piece is both informative and entertaining. After a brief description of the event, I will perform the piece (about 10 minutes) and upon conclusion, I would appreciate audience feedback.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Rooney, Anna	Janda, Denee; Wells, Scott	Communication Studies

The Riveting Adventures of Peer Paired Tutorials in Outer Space

Our history has proven time again that an idea that breaks away from conventional action can bring about a new standard. For example, Ernest Hemingway's stylistic voice was unlike writers of his time. While everyone else was writing elongated sentences, Hemingway condensed language and influenced generations of writers by eliminating unnecessary words. Today writing centers mirror American Literature before Hemingway because we are at a standstill with the way we tutor. There was a need for a paradigm shift in the standards of American fiction writing. This venture translates into other fields of academia as well. We tend to stick to conventional principles that have worked in the past. Our comfort limits experimentation. However, it is important to remember that instruction is never absolute and change births new standards. When examining writing center theories, a need arises to experiment with tutoring techniques. Like Hemmingway, in order to make waves in this relatively young field, new methodologies must be researched. This case study explores a new option for English Language Learners (ELL). A traditional writing center tutorial involves one writer and one tutor. This study examines the effects and implications of having two writers from the same class collaborating with one tutor. The session is defined as a Peer Pair Tutorial. These writers will work together on the same assignment during the tutorial. It researches the comfort level of ELL learners within the writing center as well as the effects of peer collaborative learning. The findings yield results worthy of discussion at this year's Student Research Colloquium because it introduces an improved collaborative aspect that will benefit the future of writing center academy.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Seifert, Nicholas; Chong, Pik Kuan	Mohrbacher, Carol	English

The Implied Author in Comics

In Story and Discourse: Narrative Structure in Fiction and Film and Coming to Terms: The Rhetoric of Narrative in Fiction and Film, Seymour Chatman discusses Wayne Booth's notion of the implied author: a constructed figure situated between the author and narrator.Â Chatman uses literature and film as examples in his discussion of the implied author.Â Although Chatman's narrative structure is meant to accommodate all types of narrative, his examples are almost exclusively taken from literature and film.Â I intend to expand Chatman's discussion into the realm of comics to find common ground and situations that occur in comics that are unique to the medium and deserve more consideration.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Heimermann, Mark	Barton, Matthew	English

Emily Dickinson: A Study in Psychology

Unique and prolific writers, such as Emily Dickinson, offer literary critics copious amounts of material to ponder. Dickinson is also popular with scholars dissecting literature to understand it; that has been the case since she was first published, posthumously, in 1890. Research shows an unexpected dynamic; the poetry and poet are static, but the methods of inquiry have taken a different direction. Critics writing in the first half of the 20th century offered spirited praise of Emily Dickinson's talent. In Richard Sewall's Emily Dickinson: A Collection of Critical Essays, Conrad Aiken asserts: "Her genius was, it remains to say, as erratic as it was brilliant". Twenty years later critics like Richard Chase, in his book Emily Dickinson, questions her reclusive behaviors and notes that it is the source of suspicion and fascination. This paper uncovers a telling paradox: Early critics evaluated Dickinson's poetry based on aesthetics; researchers later turned to psychology as a framework for study.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Klicker, Karin	Dorn, Judith	English

Session E-C **Sustainability - Keynote Speech Followed by Panel Discussion** **Cascade**

Keynote Speaker: Dr. Sean Garrick

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

Student Presenter(s): **Sponsor(s):** **Department(s)**

Panel Discussion

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

Student Presenter(s): **Sponsor(s):** **Department(s)**

Reception

Presentation Index: E-C 3 **Present Time:** 1:30 PM

Student Presenter(s): **Sponsor(s):** **Department(s)**

Session F-G **SCSU Survey** **Granite**

SCSU Survey

The Student Directors of the St. Cloud State University Survey will be presenting on the results of the "Spring 2008 SCSU Student Omnibus Survey." Using the computer assisted telephone interviewing, or CATI system, a scientific random sample of students were asked to answer a variety of questions. These questions ranged from general opinions of the University as well as topics including campus safety, hate crimes and smoking and alcohol usage.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Helm, Renee; Lynch, Trevor; Barthel, Craig; Helmin, Derrek; Saucedo, Frederico; Thapa, Birat; Kampa, Kaelynn; Schoenberg, Chris; Karsten, Keith; Nelson, Heidi	Frank, Stephen; Wagner, Steven; Hammes, Michelle; Robinson, David; Zerbib, Sandrine	Political Science, Sociology and Anthropology, Statistics

Session F-GN **Economics-2** **Glacier North**

Influence of Local Economy on Major League Baseball Attendance

When the economy is doing poorly, the sales of many goods and services are negatively affected. Is attending Major League Baseball another example of this? Some believe that people find comfort in going to sporting events, which would suggest that baseball is immune to recessions and could even benefit from them. I hypothesize that Major League Baseball's attendance and revenue is positively correlated with the state of the economy. Factors such as team performance, ticket prices and the presence of other teams in the area have been found to have a significant effect on attendance. Also, many fans choose to go to more baseball games when there is a new stadium built or a new team moves into town. After controlling for these factors, it is my hypothesis that the state of the local/regional economy is positively correlated with attendance. Using data from 1977 to 2006 on the 24 teams for which sufficient data are available, this paper considers the impact of local economic performance on team attendance.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Robish, Scott	Grossman, Philip	Economics

MVP Voting

This study attempts to determine what variables are used to determine the National Basketball Association (NBA) Most Value Player (MVP). The model developed will be using data from the NBA seasons 1996-97 through 2007-2008. Using the votes received as the dependent variable. Player and team performance variables and none performance variables are independent variables. Player and team performance variables include player and team statistics. None performance variables include race, years in the league, a previous winner, star quality and size of TV market player plays in. My hypothesis is that- Votes are received for the MVP that is based on reasons other than player or team performance.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Kordosky, Jordan	Grossman, Philip	Economics

Fouls in the National Basketball Association

This research analyses why some National Basketball Association players get more fouls than other players. The data is for games played in November of the 2007-2008 season. Data for just November games because, being early in the season, every team is still competitive and may have hopes of making the playoffs. The analysis considers a number of determining factors, including: years of experience in the league, rebounds per game, minutes played per game, race and nationality and star status. The research will conclude if the referees are more lenient on players of star status and if they discriminate against certain races.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Stock, Garrett	Grossman, Philip	Economics

Rural Minnesota Pharmacy Viability

To date there is no research pertaining to pharmacy survival based upon the surrounding business environment. With increasing pharmacy closures and nearly 70% of Minnesota having only one pharmacy within a 20 mile radius, probing the surrounding economic environments can show causality. Contrary to the pharmacy closure rate, prescription drug spending has outpaced general inflation year-to-year. Previous research has been conducted to quantify the economic impact that a pharmacy has on a community. Particular interest has been given to rural regions, of which 80% of Minnesota is comprised. Geographic studies relative to patient transportation to their nearest pharmacy has adequately depicted this trend using time-series analysis. The purpose of this paper is to delineate if pharmacy closure a ripple effect to surround micro-economies (city or township) or if the reverse is a more appropriate model. Pharmacy location data in five year increments will provide the dependent variable. The primary independent variables were obtained from county-level census data and include yearly change of business births and deaths in sectors that are associated with pharmacy. Other variables are population, age distribution (0-18 years and 55 and older), income distribution and health care expenditures. This thesis will provide a basal understand to the economic causality of pharmacy closure trends that may be further investigated on more micro-community levels in the future.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Eannelli, Michael	Grossman, Philip	Economics

Session F-GS | **Biological & Behavioral Sciences** | **Glacier South**

Advertisement Behavior of Springtime-Breeding Frogs During an Aberrantly Cold Spring

Stearns County encompasses the border of two major ecological zones. Thanks to the influence of the Mississippi River and glacial deposits, it also features a range of habitats including many wetlands. As a result, the borders of the ranges of several species of frogs also pass through the county as well. These frogs have all adapted to survive the harsh Minnesota winters, and have timed their breeding cycles to optimize reproductive success and limit interspecies competition. But this spring was even more unique because of the unusually cold weather. Winter weather returned even after a few species started calling. Such disturbances are felt much more acutely in amphibians. The purpose of project is to gauge how it has affected each species of frog and how they dealt with the unusually cold weather during the spring of 2008.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Ziegler, Frank	Cook, William	Biological Sciences

Characterizing Toxoplasma Gondii Protein TgCYC2 80.m03971

Toxoplasma gondii is an obligate intercellular protozoan parasite that causes a zoonotic and sometimes fatal disease called toxoplasmosis. Toxoplasma gondii has the ability to invade nearly any nucleated animal cell. Most damage to the host is caused by uncontrolled growth in biomass of the parasite and tissue inflammation and destruction caused as a result. The current therapeutic regimen combating Toxoplasmosis is the combination of pyrimethamine with sulfadiazine and folinic acid. This treatment although is able to cure the tachyzoite stage, it is ineffective against the chronic bradyzoite stage. The unusual life cycle of Toxoplasma gondii suggested an unusual cell cycle. Investigations into the cell cycle control mechanism of Toxoplasma gondii have revealed unusual cell division patterns. With the increasing resistance of Toxoplasma gondii to the extant treatments as well as the lack of treatment available for tissue cysts to prevent relapse of infection, there is a need for novel drug targets. Better understanding of Toxoplasma gondii cell cycle proteins can lead to a better understanding of controlling its cell cycle. We target TgCYC2 80.m03971 a putative cell cycle protein of Toxoplasma gondii in a series of experiments in order to characterize the protein. The effect of TgCYC2 80.m03971 on cell growth was investigated by transforming yeast cells Saccharomyces cerevisiae strain INVSc1 using a galactose based inducible vector pYES-Dest52. The yeast two-hybrid screening with TgCYC2 80.m03971 as bait against Toxoplasma gondii cDNA library revealed interactions with membrane skeletal protein TgIMC1 (44.m00004), a putative zinc finger (C3HC4 RING finger) putative protein (540.m00334), a nucleoporin FG-repeat containing protein (583.m09196), a putative ribosomal protein S10 (64.m00338), and a hypothetical protein .TgCYC2 (80.m03971) significantly slowed the growth of Saccharomyces cerevisiae strain INVSC1 when expressed under an inducible vector.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Kane, Rahul	Kvaal, Christopher	Biological Sciences

Immigrant Workers

The purpose of my research project is to explore the lives of immigrant women workers in St. Cloud, Minnesota. I want to find out about the challenges they face once they start working, how do they balance their family life and their work life, what attitudes they have towards work, why they choose to work at the places they work? Are they aware of the benefits available to them in their work environment? I will use the different theories from different books to explain my understanding of the lives of these women. To find this information out I will also be volunteering at La Cruz community center in St. Cloud, MN.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Jeyachandran, Rebecca	Greider, Paul	Sociology and Anthropology

Session F-M | **Sociology-2** | **Mississippi**

Self and Society

The students in the Self & Society soc 412 course are presenting research papers are about the practice of the individualities among different groups of people, whether it be race, ethnicity, age, etc. They are an intriguing examination of the self and society. People develop concepts of themselves and their cultures through reflexive social interaction with others. So individuals learn their interests, ideologies, preferences, attitudes and develop social patterns based on these which become their cultures. To explore these differences students performed volunteer work with various groups including the mentally challenged, seniors and immigrants to name a few. The end result is that different people do different things. That is, they are reflexive to their environments.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Leichtnam, Paige; Anastasi, Lisa; Wambua, Angela; Pechonick, Tami; Buermann, Amy; Palokangas, Preston; Schmit, Nicole	Greider, Paul	Sociology and Anthropology

Session F-O | **The Links Between Religion Social Context** | **Oak**

The Influence of Christianity on Indigenous South Africans

Can one be a Christian and still hold on to their traditional beliefs? Even if those "traditional" beliefs are contradictory to Christian values? This paper focuses on how indigenous South Africans negotiate their "cultural" beliefs with Western Christianity. South Africans pride themselves in being African and pride themselves even more for being in a particular "tribe" like Xhosa, Zulu or Pedi and approach Western philosophies with suspicion. There are times when indigenous Africans reject westernization claiming that they are proud of who they are and do not need to be poisoned by westerners. However, when it comes to Christianity there seems to be an absence of this suspicion or distrust. Christianity is not questioned, although it is a western religion-- at least that is how it arrived in Southern Africa. This paper explores how indigenous South Africans are converted into Christians. Christianity is the biggest religion in South Africa and people often practice both their indigenous traditions and believe in ancestors but still claim to be Christians. Why do they let themselves be converted and how do they negotiate their traditional ways with Christianity. In what ways does the process of transformation begin? What happens and was there resistance? Sociologically, how do we explain where and why or why not so?

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

Student Presenter(s):	Sponsor(s):	Department(s)
Scott, Lwando	Philion, Stephen	Sociology and Anthropology

Where is God Now: A Sociological Look at Impending Death and the Role of Religion

There is an ongoing debate whether the knowledge of one's impending death causes someone to become more or less religious. I hope to find out, through a review of relevant sociology of religion based literature and interviews at local church and elderly care based institutions, if one really does become more religious before they move on from the earth or if only people who are religious before hand experience this step religious activity prior to death. I hope to uncover sociologically what it may be about one's impending death that would make one look at their life and turn towards or away from religion based upon their proximity to death.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Pechonick, Tami	Philion, Stephen	Sociology and Anthropology

The Catholic Church and Somali Immigrants in Central Minnesota: A Comparative Study of Faith-Based Social Justice Engagement

The Catholic Church has historically been involved in social justice work for immigrants. Whether it is sanctuary movements in the 1980s for Central American refugees fleeing volatile political climates in their home nations, or the more recent economic-based influx of Latin Americans, religious organizations and churches have mobilized to provide assistance and lobby for immigrant rights. In the last few decades, Central Minnesota has witnessed an economic and political-based influx of Somali immigrants. Today, the Somali community forms a significant portion of the immigrant population in Central Minnesota. Arriving primarily as refugees, these immigrants often turn to local faith-based charities for assistance. The Catholic charity organizations of Minnesota step in to assist with everything from housing, to legal guidance and representation, to English language classes and job placement. This paper attempts to understand the basics of faith-based social justice engagement. Focusing on Catholicism, it questions the motivations for social justice action by the church as an institution operating in a capitalist society. By studying the work of three locally based Catholic organizations, it also attempts to understand the various dimensions of exchanges between the Somali immigrants and the faith-based charity groups. Exploring the communication and reconciliation of religious differences between the two groups, it attempts to understand the religious identity negotiation of the new immigrants as a result of their interaction with the Catholic charity organizations.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Panchmatia, Neil	Philion, Stephen	Sociology and Anthropology

Religious Economics: Interaction Between the Community and Local Christian Religious Institutions

This paper is an analysis of the local Christian religious institutions and their interaction within the community in regard to the state of the local economy. Through observation and interviews within the institutions, data will be obtained which will either support or deny the claim that churches in the local area modify their message in relation to the markets surrounding them. In the case of churches surrounding campus, their messages should suit a younger and more privileged audience. While further from campus, these churches are expected to deliver a more traditional or conservative message. These cases apply to the consumer markets in which each church finds itself. Furthermore, all of the churches are prey to the widespread economic downturn and as such should change their messages to help maintain both their audiences and their offerings.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Dwyer, Cory	Philion, Stephen	Sociology and Anthropology

Session F-VN **Discussion with Dr. Sean Garrick** **Voyageurs North**

Discussion with Keynote Speaker Dr. Sean Garrick

Professor Sean Garrick will share his research work in the areas related to energy, environment and engineering. His current area of focus is energy production (both fossil-fuel based and renewable). His research also includes nanoparticles, computational fluid dynamics and technological solutions for environmental problems. He is very excited to chat with students and faculty at SCSU.

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

Student Presenter(s):	Sponsor(s):	Department(s)

Session F-VS | **Science & Engineering-3** | **Voyageurs South**

Optimization of Production Input to Streamline Excess Component Inventory in an Assembly Line

This project was conducted at a manufacturing company in which there were excessive materials in the working area that occupied valuable space, created unnecessary safety hazards and otherwise hindered performance of the assembly line. There was a need for a system where assembly workers have a constant stream of inventories limited to a one to four hour supply. The purpose of the project was to optimize the production input in order to streamline excess component inventory used in an assembly line, so that the amount of inventory required on the production floor at any one time can be minimized to the lowest level possible without holding back the performance of the plant. To accomplish this, a kanban system was established and data was collected on every material input to the assembly line in order to determine the quantity that is delivered per delivery unit and the rate at which that unit is consumed. The project will describe the material handling solution to this problem and the results will be discussed during the presentation.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Phuyal, Biswaraj; Philippe, Jonathan; Khanal, Abinash	Shah, Hiral	Mechanical and Manufacturing Engineering

Histological Assessment of Liver Samples Taken from Perfluooctane Sulfonate (PFOS) Exposed Bluegill Sunfish (Lepomis macrochirus)

Perfluooctane Sulfonate (PFOS) have been measured in aquatic environments in North America. These compounds have found use in many commercial products including paints, water repellants and fire-fighting foams. Once introduced into the aquatic environment they are persistent, bioaccumulative and toxic for exposed organisms. The objective of this study was to determine whether a realistic exposure of bluegill sunfish to PFOS in the laboratory would result in pathological changes to the liver. Groups of 14 fish were acclimating in 80L aquaria for 5 days prior to exposure. Three aquaria were exposed to a nominal concentration of 50 ng PFOS/L well water for 20 days followed by a 20 day recovery period in well water. Three control aquaria received only well water. On days 0, 1, 2, 4, 7, 11, 15, 19 during the exposure and days 25, 30, 35, 39 after the exposure, one fish from each aquarium was sacrificed. Fish length, weight and liver weight were assessed and the liver was processed for histological examination. Analysis of water samples indicated an average PFOS exposure concentration of 37.6+3.3 ng PFOS/L well water (Mean+SE). There was no mortality during the experiment and the relative size of the liver (hepatosomatic index) did not vary between treatments.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Metz, Emily; Heydt, Rachael	Schoenfuss, Heiko	Biological Sciences

Application of Ergonomics to Prevent Musculoskeletal Injuries at a Manufacturing Workstation

Ergonomics is an interdisciplinary science that aims at eliminating poor designs from work places which lead to drop in production efficiency. Musculoskeletal injuries at manufacturing workstations are at high rate due to the tedious work involvement. In this project, a manufacturing workstation that involved a process of fixing the compressor tube was studied at a freezer manufacturing company. The procedure of connecting tube while fixing the screws and turning the shell of the product on a continuous basis on the assembly line required a high pressure to be applied by the operator. Therefore, the goal of this project was to observe and find out instances of human machine interface which may result into significant ill effects and to find an appropriate alternative to reduce the operator's physical stress. The study involved observing the operator while working and conducting a time study. Few motion analyses were conducted to calculate individual element time. An evaluation was done to identify which specific tasks were ergonomically inefficient and alternative solutions to that problem were sought. This presentation will describe the recommendations made to the company based on the outcome of the study and provide directions for future research.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Tatineni, Sushmita; Marripudi, Alekhya	Shah, Hiral	Mechanical and Manufacturing Engineering

Session G-B | **Poster Session II - All Disciplines** | **Ballroom**

Wright County Fall Risk Assessment

The risk of falling in the older adult population of Wright County is described. Falling is defined as having any part of one's body other than the feet hit the ground. The population of older adults over 65 year of age is increasing in Wright County. The rate of death and injury resulting from falls is the highest for this age group. A survey was developed and conducted at four different senior living facilities throughout Wright County. A total of 33 surveys were obtained from the communities of Buffalo, Annandale, and Cokato. The survey was made up of fourteen questions that ranged from age to number of falls in the previous year and amount of daily medications. The survey was developed to analyze the various fall risks older adults face on a daily basis in their communities and at home. Of those surveyed 48.5 percent experienced at least one fall in the past year. When asked to rate their concern regarding falls, 73 percent, or 24 of the older adults rated their concern at three or higher. There was no significant relationship between the number of times the participants fell and how concerned they were about falling. Differences were noted in the participant's perceptions of the accessibility of the communities they lived in. Almost half of the older adults surveyed have fallen at least once in the last year. To address this issue, nurses should educate older adults on the risks for falling, focusing on modifiable factors that lead to falling. Older adults in this community need to have a better understanding of the complications that are associated with falls. The study found 48.5 percent of the participants surveyed in three communities experienced at least one fall in the past year; 12 percent (4/33) reported being very concerned about falling.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Wenger, Carol; Armstrong, Amanda; Bearson, Rachel; Johnke, Andrea; Neumann, Geraldine; Ogle, Sharon; Varner, Kali; Fineday, Rebekah	Lenz, Brenda; Morrison-Sandberg, Leslie	Nursing Science

Patenting the Genome

The purpose of this issue investigation was to determine students' knowledge and beliefs about gene patenting, as well as their experiences with genetic medicine. The population chosen was a St. Cloud State University Genetics 262 class. The students were given a short questionnaire with variables regarding their knowledge, beliefs and experiences with gene patenting and genetic medicine. The results showed that students could not be considered knowledgeable about genetic patenting, their beliefs were largely neutral and they had little experience with genetic medicine. A recommended action that could be taken would be to meet with local high school Science teachers to encourage them to teach a lesson on gene patenting. Another possible action would be writing elected officials about initiating legislation with stricter regulations on gene patenting.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Strand, Nathan	Simpson, Patricia	Biological Sciences

Characterization of Class 3 Aldehyde Dehydrogenase with T186S Point Mutation

Cyclophosphamide is a commonly used anticancer drug for the treatment for the breast cancer and cancers of the bone marrow cells. The key intermediate in the metabolism of cyclophosphamide is an aldehyde (aldophosphamide). Conversion of this aldehyde to acid by human aldehyde dehydrogenases (ALDHs) is a detoxification process and leads to cyclophosphamide resistance. Two known ALDHs important in this process are ALDH1A1 and ALDH3A1. During bone marrow transplantation (BMT), it is important to protect stem cells (critical normal cells). Cyclophosphamide is one of the drugs used in BMT. Efforts are being made by utilizing ALDHs to rescue critical normal cells during high dose chemotherapies for BMT. In this regard human ALDH3A1 has been subjected to site directed mutagenesis to generate a clone, T186S, which produces a mutant ALDH3A1 (T186S) that is capable of detoxifying cyclophosphamide much more efficiently than its counterpart. We have recently purified this enzyme to determine detailed physiochemical properties and compare them to the properties of normal enzyme. The later studies are currently underway and the results will be presented at the colloquium.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Modi, Rupesh; Mandal, Ayush; Chaulagain, Sagar	Sreerama, Lakshmaiah	Chemistry

Production of Cellulosic Ethanol

Development of biofuels from agricultural by products with no economic value currently is an attractive idea as it focuses in the utilization of by products as good sources of cellulose that can be ultimately fermented into ethanol and other by products. To achieve fermentation, we will use a thermo tolerant yeast strain (being developed in our laboratory), cellulase from commercial sources and cellulosic biomass from by products like corn stack, corn cobs, wood chips, switch grass, wheat straw etc. The process includes several steps out of which the first one is hydrothermolysis of cellulosic biomass at 200 degree C in presence of superheated steam. The hydrothermolysed biomass will be washed with deionized water which will remove soluble impurities. The cellulose enriched biomass thus obtained will then be subjected to simultaneous saccharification and fermentation in presence of the enzyme cellulase and the thermo tolerant yeast at 45 degree C and pH 5.5 to produce ethanol. The concentration of ethanol in fermented cultures will be determined by GC-MS technique. So far we have identified the sources of biomass and are in the process of fermenting cellulose.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Mandal, Ayush; Chaulagain, Sagar	Sreerama, Lakshmaiah	Chemistry

The Effect of Ego Depletion on Biome Preferences

In this experiment, the effect of ego depletion-a form of mental fatigue-as well as the relationship between scores on the Connectedness to Nature Scale (CNS) were examined. The CNS was administered to Psychology students (N = 29) at Saint Cloud State University who then performed an ego depletion task at a low, medium, or high level. Afterwards, the participants rated the savanna, forest, and desert biomes. The level of ego depletion was found not to have a significant effect on biome preferences. However, the participants' CNS scores were found to be a predictor of preference for only the savanna biome. This finding regarding the CNS may lead to future studies on the predicting ability of that scale.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Gorder, Bradley	Jazwinski, Christine	Psychology

Electronic Paintball Sentry

This project's goal is to make a paintball marker autonomously aim and fire upon movement on a properly regulated paintball field. Current options that the industry offers are priced outside of most paintball player's budgets and often offer poor performance and customization options. The computer and webcam capture images and identify movement. If the area of movement is big enough, like a person walking through the field of view, the computer will feed the location of this movement to a microcontroller. The microcontroller then will interpret these coordinates and instructs the servos to move so that the paintball marker is pointed at this movement. The microcontroller also has configuration and other tools built in. While this is happening a purpose built hopper is supplying the marker with a fast stream of paintballs to ensure the fun doesn't end.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Scherer, Jacob; Free, Kelly; Godding, Benjamin	Vogt, Timothy	Electrical and Computer Engineering

Becoming Global: A Study In Intercultural Competence

Students in St. Cloud State University's Teaching English as a Second Language (TESL) program ostensibly require more developed levels of intercultural competence in order to achieve success in their field. The TESL program itself emphasizes the role of culture in language acquisition and offers courses on culture in the classroom. This research is at its essence an assessment of the TESL program's achievement of intercultural competence training and is part of an ongoing self-assessment of the TESL program. Using the Intercultural Development Inventory (IDI), an empirical measurement based on Milton Bennett's Developmental Model of Intercultural Sensitivity, this research answers the question: Do student's in St. Cloud State University's TESL program develop intercultural competence? The study completes Pearson correlations with the Intercultural Development Inventory (IDI) as the independent variable and the Minnesota teacher examination licensure test score (specifically the Praxis II: English to Speakers of Other Languages score) and the subscore for culture as the dependent variables. It is assumed that the course outcomes for the TESL program's culture based courses (ED 457/557, English 463/563, or 673) are measurable by the IDI. The Pearson correlation would then tell us if these courses have a significant relationship with the Praxis II: ESOL test and specifically with the culture subscore. Additionally, T-tests are conducted of two groups: 1) students who have completed one of two culture based courses: ED 457/557, English 463/563, or 673) and 2) students who have not. If there is a significant difference between these two groups, then we will be able to determine that our culture based courses are contributing to the improved intercultural communicative competence of the students.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Patridge, Margaret	Robinson, James	English

Global Warming

Currently, there has been a lot of political debate about whether or not global warming is happening; so I wanted to research the facts myself rather than listen to non-scientists or politicians discuss the matter. There are two main beliefs behind the causes of global warming. One, that the current global increase in temperatures is due to the latest shift in cyclical patterns in our planet's life; and two, that human activities are responsible for global warming and climate change. After researching both aspects of the global warming debate, I wanted to perform my own research and answer the question, "Should the government enforce carbon dioxide limits for U.S. power plants in effort to reduce the effects of global warming?" The objective of this research was to discover what St. Cloud State students from the Earth and Atmospheric Science 109 course views are on the current global warming debate. I wanted to examine different variables on the topic; including what St. Cloud State students know about global warming, believe are its causes and what behaviors they are willing to change in order to reduce the effects of global warming.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Bergstrom, Courtney	Pound, Katherine	Earth and Atmospheric Sciences

Molecular-Basis for Anticancer Activity of Ruthenium-Benzimidazole Metal Complexes

In the United States, breast cancer is second leading cause of death. Different treatments are available for breast cancer which includes mastectomy, radiation therapy, hormonal therapy and chemotherapy. In Chemotherapy, anticancer drugs are used to destroy cells of cancers. Several metal complexes of platinum are used for the treatment of cancer including breast cancer. The purpose of this project is to study the effects of ruthenium-benzimidazole complexes and their corresponding ligands with breast cancer cell lines. Three benzimidazole ligands, 2-phenylbenzimidazole [ligand 3], 1-m-hydroxbenzyl-2-m-hydroxy phenyl benzimidazole [ligand 6], (1-p-hydroxybenzyl-2-p-hydroxyphenyl benzimidazole [ligand 7] and their corresponding complex, (RuCl3(PhBzIH)3 [Ru3], RuCl3(m-HPhBBzI)2[Ru9] and RuCl3,(CO)2(p-HphBBzI)2 [Ru8] exhibit anticancer activity towards breast cancer cell lines MCF-7/0 and MCF-7/Otta; LC50 values ranging from 50-150 uM. Suggesting that the anticancer activities are due to their interactions with DNA. UV-Vis spectrophotometry studies indicate interaction of these complexes with DNA. Further studies leading clearer understanding of the mechanism of action of Ru-complexes is being explored.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Mahroof, Taqdees	Sreerama, Lakshmaiah	Chemistry

Vitamin A Deficiency: A Hidden Problem that can be Prevented by Simple Public Health Measures

Vitamin A, a fat-soluble vitamin required by the body in small amount is one of the major causes of serious public health problems especially in developing countries in which every year, vitamin A deficiency is the main cause of approximately half a million of cases of blindness among malnourished children. To develop awareness about the public health problems caused by Vitamin A deficiency in developing countries. A literature review was conducted in order to prepare this report. Vitamin A deficiency is caused by the fact that like any other forms of vitamins, the body cannot synthesize it; therefore it must be obtained from the diet. And, when the diet is extremely deficient in this vitamin, deficiency symptoms occur. These symptoms include: skin disorders, reduced ability to fight infections, stunted growth and in worst cases, blindness as a result of dryness of the cornea. If the problem progresses, the retina is damaged and as a consequence permanent blindness occurs. When serious deficiencies occur, supplementation of this vitamin is needed. However, the problems with vitamin A deficiency can be prevented promoting the ingestion in the diet of its precursors, which are mainly carotenoids that can be found in vegetables such as carrots, sweet potatoes, cooked spinach or bok choy and apricots. Also some animal products are also good sources of vitamin A. These products include milk and its derivatives and beef liver among others. Vitamin A deficiency is a public health problem that can be prevented by promoting dietary habits that are rich in vitamin A and also by developing awareness of the importance of this vitamin especially in the health of children of the developing world.

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

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

Flow Cytometric Analysis of Cell Death Induced by WHI-P131 and Rapamycin in Cultured T-cells of NOD Mice

Type 1 Diabetes (T1D) is an autoimmune disease characterized by the absence of insulin-producing beta cells in the pancreas due to T-cell-mediated attack. It has been shown that an experimental compound, an inhibitor of the Janus tyrosine kinase 3 - WHI-P131, can prevent development of autoimmune T1D in NOD mice. Our recent results suggest that an addition of WHI-P131 to long-term-cultured T-cells induces generation of a particular type of protective T-cells, TGFB-secreting regulatory T-cells (Tregs). It is described that Rapamycin, a conventional immunosuppressive drug, induces expansion of "natural"-type Tregs that exhibit protective effects against T1D development as well. The concentration of Rapamycin that induces generation of Tregs during long-term culturing of T-cells does not kill T-cells. We described previously that WHI-P131 induces apoptotic cell death, measured by ELISA, in short-term cultures of T-cells. Here we propose to study the effects of Rapamycin and WHI-P131 on apoptotic/necrotic T-cell death during different culturing conditions (short-term, 48 h vs. long-term, 3 weeks). We hypothesize that both Rapamycin and WHI-P131 will induce apoptotic cell death during short-term culturing of T-cells (that does not support propagation of Tregs), while exposure of T-cells to both drugs during long-term culturing (that promotes Treg expansion) will not affect T-cell survival. CD4+ T-cells will be isolated from the spleens of 4-6-wk-old NOD/LtJ females by magnetically-labeled beads (Myltenyi Biotec). They will be stimulated by specific antibodies (anti-CD3 plus anti-CD28, 10 ug/ml and 2 ug/ml, respectively) and cultured with addition of Rapamycin (10, 100 and 1000 nM) and WHI-P131 (1.5, 3, and 6 ug/ml) for the experimental period of 48h or three weeks. The cultured T-cells will be double-stained for flow cytometric analysis with Annexin-V-FITC and propidium iodide and analyzed by FACSCalibur (BD Biosciences).

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

Student Presenter(s):	Sponsor(s):	Department(s)
Olson, Marin	Cetkovic-Cvrlje, Marina	Biological Sciences

The Effect of Rapamycin on Generation of the T-regulatory Cells in NOD/LtJ Mice

Type 1 Diabetes (T1D) is an autoimmune disease that results from the destruction of insulin-producing cells, beta cells of the pancreas, by the own T-cells. A NOD mouse model represents the best experimental model for studying human T1D because these mice spontaneously develop autoimmune T-cell attack against pancreatic beta cells. There are three major types of T-cells that promote/suppress autoimmune attack: T-helper (protective), T-cytotoxic (diabetogenic) and T-regulatory (T-reg) cells (protective). They can be distinguished based on their cytokine secretion. Treg cells secrete increased levels of IL-10 and/or TGFb, while IL-2 and IL-4 levels are decreased. Rapamycin is an immunosuppressive drug that has been used to prevent the rejection of organ transplants, as well as to halt an autoimmune attack in experimental models of T1D. Moreover, rapamycin has been described to promote expansion of Tregs in long-term cultures of CD4+ T-cells. This study will investigate whether the treatment with Rapamycin of NOD mice in vivo will increase T-reg cell population. NOD/LtJ female mice (4-6-wk-old, n=6/group) will be treated intraperitoneally by rapamycin (1 mg/kg/day) or by vehicle-control (PBS). After the seven-day treatment, the mice will be sacrificed and CD4+ T-cells isolated by positive magnetic isolation. These cells will be stimulated by anti-CD3 and anti-CD28 antibodies, cultured in 96-well-plate for 48h and their cytokine profile (IL-2, IL-4, IFNg, IL-10 and TGFb) determined spectrophotometrically by ELISA. We hypothesize that rapamycin treatment would increase the amount of T-reg cells, therefore the cytokine levels of IL-10 and/or TGFb are expected to be significantly increased, while IL-2 and IL-4 levels decreased, compared to controls.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Nandlal, Larita	Cetkovic-Cvrlje, Marina	Biological Sciences

What Should be Done to Decrease Frog Deformation

A Science Technology and Social (STS) issue analysis concerning the deformation of frogs due to a cascading effect starting with the use of agricultural chemicals. The analysis was conducted by gathering the general knowledge, beliefs and experiences of Science 226 students at St. Cloud State University through a survey that tested what they generally knew about frogs, the experiences they had with deformed frogs and their beliefs concerning the use of agricultural chemicals. The analysis also extends on the issue by offering possible outcomes and suggestions to take to lessen frog deformation. The research was conducted during the fall 2008-2009 semester and compiled for Science 420.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Enninga, Melissa	Simpson, Patricia	Biological Sciences

Peak-To-Average Power Reduction of OFDM Signals Using Adaptive Digital Filter

The basic idea of the multicarrier (MC) modulation techniques is to divide the single high data rate stream into several low rate streams to overcome the effect of multipath fading channel. However, the conventional multi-carrier technique suffers from bandwidth inefficiency due to use of spacing between adjacent channels. The Orthogonal Frequency Division Multiplexing (OFDM) belongs to multicarrier modulation techniques. By using the concept of orthogonality of the sub-channels OFDM has been able to mitigate the detrimental effects of multipath fading as suffered by most of the techniques like FDM etc. The major drawback of OFDM is that it suffers from large envelop variations, which are often characterized by the Peak to Average Power Ratio (PAPR). The high PAPR signal requires a large linear dynamic range of the power amplifier at the transmitter end resulting in the poor power efficiency and increased complexity of the system. So to overcome this disadvantage of OFDM many PAPR reduction techniques have been proposed. In this presentation, we first give an introduction to OFDM and PAPR problems and then PAPR reduction method named "Peak-To-Average Power Reduction of OFDM Signals Using Adaptive Digital Filter" is introduced.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Gill, Satinderpal	Yao, Aiping	Electrical and Computer Engineering

Travel Behaviors of Elders and People with Disability

Older adults and handicaps are individuals with specific travel needs therefore; safe and practicable alternative transportation needs to be available. The objective of this study is to evaluate what transportation mode is available to elders and people with disability in St. Cloud area and what future modes of transportation will be needed to address the increasing elderly population. The methodology used is reviewing what is currently known about older driver's safety and mobility in literatures, and highlight important research needs in a number of key areas. Moreover, through the use of questionnaires and interviews, important areas for screening and assessment, characteristic of elder's mobility, travel destination, preference of transportation mode; accessibility and availabilities of transportation will be analyzed. At least 100 participants of age 65+ and about 7 to 8 city transportation managers and nursing homes administrators will be interviewed. This study will also take into account the city transportation comprehensive plan and demographic of people age 65 and over. The result will imply understanding of the current transportation modes for elders and disabled people and what are the changes that need to be made to meet the demand of all people within our community.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Gartei, Marion; Brandt, Ross; Balla, Yohanis; Peterson, Mandy; Chalupsky, Curtis	Woldeamanuel, Mintesnot	Community Studies

An Analysis of Terminated Propane Customers: A Case Study of Range Bottle Gas, Coleraine, MN, 2007-2009

Throughout Northern Minnesota, propane companies have been inundated with tank pick-ups and installations in response to the increased cost of propane over the past two years. Range Bottle Gas is a small propane company located in Coleraine, MN. It has been successful for three generations and continues to provide rural, Northern Minnesota residents the fuel to heat their homes. Over the past two years, however, the typically loyal customers have reacted to the increase in the cost of propane. This study investigated the reasons which motivated customers to disassociate with Range Bottle Gas by conducting a visual survey. A total of 115 terminated customers were located to determine their decision. These customers were categorized into three groups based on: 1) whether they switched their source of propane; 2) whether they switched to an alternative source of energy or; 3) whether they had relocated. Results showed that the majority of customers in the study group switched to a different source of propane. Many households were inconclusive, and many switched to an alternative source of energy, such as wood or natural gas. Only a handful of terminated customers relocated.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Peterson, David	Wixon, Lewis	Geography

The St. Cloud Community's Inclination Towards Modal Switch

The development of the St. Cloud metropolitan area has sprawled over much of central Minnesota. Most residents are required to travel substantial distances in order to reach desired destinations. Daily living activities like work, shopping, recreation or school are spread throughout the city. Driving is perceived as a necessary means to get from one point to another. The city of St. Cloud possesses a reputable bus system. However, most individuals and households remain dependent on automobile use even when unnecessary. If St. Cloud employed a more transit-oriented approach to development and transportation, would a positive response be elicited from residents? St. Cloud could employ numerous steps to become more transit-oriented. Increasing inconvenience and costs associated with parking throughout the city could potentially deter independent drivers. Increasing Metro Bus stops and the quality of the trip could expand the mode's efficiency and encourage ridership. Other urban areas have adopted Complete Street initiatives as an attempt to increase pedestrian and bicycle traffic. Encouraging compact land use patterns also decreases the need to drive. Methodology for the research includes surveys, literature reviews, observations and interviews as the primary tools used. It is anticipated that despite changes in St. Cloud transportation infrastructure, most residents would remain dependent on personal automobile use. It is perceived that the St. Cloud community's conservative inclination poses a problem in regards to modal switch. Residents enjoy the independence achieved in personal transportation. This ideology could constitute future repercussions for St. Cloud in terms of development and growth. Costs associated with increased transit efficiency appear too great when considering how many residents will respond. This decreases the likelihood of the city adopting such transit-oriented policies.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Welle, Erin; Dahl, Jason; Heintzeman, Colin; Paavola, Ryan; Wachter, Brody	Woldeamanuel, Mintesnot	Community Studies

Southside University Neighborhood Revitalization

Did you know that over 85% of the once owner occupied homes in the Southside University neighborhood have been converted to rental properties? This drastic change has lead to friction between the Southside University Neighborhood residents, property owners, Saint Cloud State University and the city of Saint Cloud. The purpose of this study is to discover solutions to stabilize the Southside University Neighborhood. Through the use of surveying, interviewing local residents, literature reviews and meeting with local government officials we intend to answer our research question. With financial incentives provided by the local government and support from the community we believe that it is possible to spark stabilization in the Southside University Neighborhood. We believe that our research can be used as a tool to educate and inform residents, property owners, renters and people in power.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Welle, Erin; Reichl, Melissa; Brama, Patrick	Rigopoulou-Melcher, Aspasia	Community Studies

Mode Choice characteristics of University Students

Growing student populations have resulted in an increased demand for automobile use on campus. It is believed that cultural tendencies are the root of traffic problems for universities, specifically, dependency on automobiles. Other reasons for mass car use of university students may include weather, distance, land use and income. Effects of this problem can be seen through the over extension of public safety services, inadequate parking, negative impact on surrounding neighborhoods and traffic congestion. Therefore, the objective of this research is to analyze the mode choice behavior of university students. The methodology used in this study is statistical analysis of surveys and interviews, focusing on Saint Cloud State University students. Implications of the results will be used to educate, inform and encourage students the benefits of alternative transportation modes.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Brama, Patrick; Singh, Sophiya; Browne, Eric; Gerads, Christopher; Phelps, Scott	Woldeamanuel, Mintesnot	Community Studies

Characteristics of People in Advertisement

Research on purchase intentions has shown that physically attractive people increase purchase intentions of participants (Bower & Landreth, 2001; Caballero, Lumpkin, & Madden, 1989). However, what effect would a more controllable aspect of impression formation like enthusiasm have on purchase intentions? Previous research on enthusiasm has shown that enthusiastic teachers increase intrinsic motivation of students and performance of students with learning disabilities (Brigham, Scruggs, & Mastropieri, 1992; Patrick, Hensley, & Kempner, 2000). However, there has been little research examining the effects of enthusiasm on purchase intentions. The purpose of the present study is to examine the effects that physical attractiveness and enthusiasm has on purchase intentions. This study was a 2 (Physical Attractiveness: Attractive or Average) X 2 (Enthusiasm: Enthusiastic or Reserved) between-subjects design. Participants were asked to view one of four short advertisements varying in physical attractiveness and enthusiasm. The advertisement consisted of a female model that appeared to be either attractive or average through the use of make-up and then presented the advertisement of a new shampoo product in either an enthusiastic or reserved manner. After viewing one of the advertisements, participants were then asked to fill out a short survey measuring purchase intentions, trustworthiness, and expertise. A significant interaction found that for the attractive model, enthusiasm had no effect on purchase intentions, but for the average model, participants had higher purchase intentions when the model was enthusiastic versus reserved. The results are discussed in terms of the controllability of these two factors on purchase intentions and what effect the type of product may have when combined with these two factors.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Stein, Megan	Buswell, Brenda	Psychology

Flow Cytometric Analysis of NOD/LtJ and C57BL/6 Mouse Splenocytes

NOD mice spontaneously develop autoimmune type 1 diabetes (T1D) between 12-24 weeks of age. Pancreatic beta cells of NOD mice are attacked and destroyed by autoaggresive T-cells that accumulate in pre-diabetic period (between 4-12 weeks of age) around the pancreatic islets of Langerhans. Therefore, T1D is considered to be a T-cell-mediated disease. T-cells can be divided into three major subpopulations [T-helpers (Th), T-cytotoxic (Tc) and T-regulatory (Treg)] that exhibit different roles in pathogenesis of T1D. Th and Treg cells are considered to be protective, while Tc cells have pathogenic role in development of T1D. These subpopulations of T-cells can be distinguished based on the expression of their specific surface markers. The entire population of T-cells express CD3 marker, while Th, Tc and Treg cells are characterized by CD4, CD8 and both CD4 plus CD25 markers expression, respectively. We hypothesize that NOD mice, as an autoimmune-prone strain of mice, contain increased percentages, as well as absolute cell numbers of T-cells compared to non-diabetic strain of mice. Therefore, the aim of this study is to investigate the percentages and absolute numbers of T-cell populations of NOD and control, C57BL/6 mice. Six NOD/LtJ females in pre-diabetic stage (4-8-wk-old) and six C57BL/6 females of the same age will be utilized for this study. Their spleens will be removed, single cell suspensions made and viability evaluated by Trypan blue. Cells will be adjusted to the concentration of 1x106/sample and immunophenotyped by single- and double-staining with monoclonal anti-mouse antibodies labeled with different fluorochromes (anti-CD3FITC, -CD4PercP, -CD8PE, and -CD4PercP/-CD25APC, BD Biosciences). Flow cytometric analysis will be performed by BD FACSCalibur 4 Color Basic flow cytometer using the standard Cell Quest software (BD Biosciences).

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

Student Presenter(s):	Sponsor(s):	Department(s)
Goh, Kah Yong; Maher, Michael; Olson, Marin; Ertelt, Katie; Nandlal, Larita; Ghate, Ketaki; Poudel, Sumeet	Cetkovic-Cvrlje, Marina	Biological Sciences

Immunophenotyping of Cultured NOD Mouse T-cells by Flow Cytometry

Type I diabetes (T1D) is a disease in which an individual's pancreatic beta cells are mistaken for foreign material and destroyed by the immune system. The loss of these cells has devastating effects on the body since the beta cells of the pancreatic islets are responsible for the production of insulin. The destruction of the beta cells in T1D is mediated by T-cells. There are three major types of T-cells: T-helper which possesses CD4 receptors, T-cytotoxic which has CD8 receptors, and T-regulatory cells which exhibit both CD4 and CD25 receptors on their surface. They have different functions in development of T1D; while T-helpers and Tregs are considered protective, T-cytotoxic cells are considered to be diabetogenic. Non-obese diabetic (NOD) mice are the premiere animal model for studying T1D due to their spontaneous development of the disease. We hypothesize that NOD mice, as a mouse strain that develops autoimmunity, will exhibit marked differences in the percentages of T-cell subtypes compared to a non-diabetic control strain of mice. Four-eight-wk-old NOD (n=6) and control female mice (C57BL/6, n=6) will be used in our study. A single cell suspension will be made from their spleens and cultured in a 24-well-plate over a period of two days in a concentration of 2 x 10^6 cells/ ml. Concanavalin A, an agent that promotes T-cell proliferation, will be added in a concentration of 3ug/ ml. After culturing, samples of the cells in a 1 x 10^6 concentration will be stained with BD Biosciences monoclonal fluorochrome-labeled antibodies specific for the mouse CD3 (CD3FITC), CD4 (CD4PerCP), CD8 (CD8PE), and CD25 (CD25APC) markers. The samples will be analyzed by flow cytometry (FACSCalibur, BD Biosciences) to determine the differences in the T-cell composition of NOD versus control mice, as well as differences in activation due to the presence of Concanavalin A.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Goh, Kah Yong; Maher, Michael; Olson, Marin; Ertelt, Katie; Nandlal, Larita; Ghate, Ketaki	Cetkovic-Cvrlje, Marina	Biological Sciences

T-Cell Proliferation Conditions in Fathead Minnow

A T-cell is a type of blood cell which carries out the cell-mediated immunity. T-cells belong to a group of white blood cells (WBCs) called lymphocytes. WBCs protect the body from infection. The main job of T-cells is to fight infection. There are a number of different types of T-cells that act in many ways to identify, directly attack and destroy infectious agents. Although there is a massive amount of information concerning T cells in mammals, a small number of data exists with regard to the presence of phylogenetically more primitive species of vertebrates like fish. It is well known that substances called mitogens [such as Concanavalin A (ConA)] can induce proliferative responses of murine and human T-cells. The culture conditions, including the medium, optimal dosage of ConA, as well as the incubation temperature, are well defined for culturing of the mouse and human T-cells. In contrast, the culture conditions for culturing fish splenocytes are not well defined. They vary from very small (3 ug/ml) to extremely high concentrations of ConA (100 ug/ml). Those conditions are described for a particular fish strain-rainbow trout. It is described as well that an exposure to aquatic pollutants results in some degree of suppression of the immune system of rainbow trout. Fat head minnow is a fish that represents an excellent experimental model for studying the effects of aquatic pollutants on the immune system in controlled experimental conditions in an aquarium. However, the culture conditions for culturing fat head minnow T cells are not known. Therefore, the goal of this study will be to establish and characterize the optimal conditions for culturing and proliferating fat head minnow T-cells.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Goh, Kah Yong; Poudel, Sumeet	Cetkovic-Cvrlje, Marina	Biological Sciences

Analysis of Immune Cell Differentiation Due To JAK-3 Kinase Inhibition Using Flow Cytometry

Type 1 diabetes (T1D) is an autoimmune disease that results in the destruction of insulin-producing cells of the pancreas. This destruction is a result of improper recognition by T-Cells, (the major cells involved in cell-mediated immunity), causing an attack by the body's own immune system. It has been shown that specific regulation of the ratios of t-cell types can alter the action of the body's immune response. Specifically, T-regulatory cells (T-reg) have been shown to suppress auto-reactive pathogenic T-cells. There are two major types of T-reg cells; natural and adaptive. Natural T-reg cells have been characterized by their expression of the surface markers CD4 and CD25 and intracellular expression of the Foxp3 marker. Adaptive T-regs have been characterized by the surface expression of CD4 marker, a lack of CD25 marker, and intracellular expression of IL-10 and/or TGF-B cytokines. The variable expression of these markers provides a unique characteristic by which these closely related T-cell types may be differentiated. It has been shown in previous studies that the selective inhibition of Janus Tyrosine Kinase 3 (JAK 3), an enzyme necessary for some forms of cellular signaling, is a potential method of selectively modulating pathogenic immune responses in a mouse model of T1D. Preliminary results obtained by Dr. Cetkovic-Cvrlje's research group at SCSU suggest that the JAK 3 inhibitor WHI-P131 targets T-cells and consequently inhibits the generation of diabetogenic T-cells while promoting the generation of protective T-reg cells. For this research it is hypothesized that exposure to WHI-P131 will stimulate T-cell differentiation toward the protective (anti-diabetogenic) T-reg phenotypes, and that these phenotype variations will be detectable via flow cytometric analysis using the cell markers mentioned above. Moreover, defining the mechanisms of WHI-P131 action allow for further characterization of the JAK 3 inhibitors which could have strong potential impacts on T1D research.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Maher, Michael; Olson, Marin; Ertelt, Katie; Ghate, Ketaki	Cetkovic-Cvrlje, Marina	Biological Sciences

Hearing Loss in Musicians: The Need for a Hearing Health Program at St. Cloud State University

With the rising prevalence of hearing loss among young adults, several colleges and universities around the United States have begun implementing hearing conservation programs for their musicians. In this study, 20 music students and faculty completed an interview, hearing test, hearing loss education and a pre- and post-education survey during a pilot program at SCSU in April 2008. The purpose of this study is to determine how SCSU musicians are being educated about noise-induced hearing loss prevention, what preventative actions they take and what strategies may best assist them in protecting their hearing. The findings suggest that more education and prevention measures may be needed to improve the hearing health of SCSU musicians.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Lamb, Katherine	Nelson Crowell, Rebecca	Communication Sciences and Disorders

Facilitating Social Skills using Voice Output Devices in a Child with ASD and Anxiety

The use of low- or high-tech augmentative and alternative communication (AAC) devices is common among children with autism spectrum disorder (ASD). AAC is any tool, strategy, or technology that enhances communication and self-regulation skills. This retrospective study provides preliminary evidence on the effectiveness of using voice output AAC devices to facilitate social skill development in a child with ASD and anxiety. Specific strategies for encouraging conversational initiation, responsiveness and turn-taking in a group setting are described. The results of this study provide rationale for using these techniques in other children with ASD, anxiety, and other social interaction challenges.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Lamb, Katherine	Estrem, Theresa	Communication Sciences and Disorders

Date of Implementation and Extent of GIS Capabilities of Minnesota Counties

Geographic Information Systems (GIS) have existed in Minnesota since the 1980s and have helped numerous county governments be more productive and efficient. While the benefits of GIS are clear, the cost can prevent some counties from ever experiencing them. This study analyzed the date and depth of Minnesota Counties GIS. The Counties of Minnesota were surveyed to determine the history and extent of their GIS program. It was determined that generally the larger the county population the earlier they were able to implement a GIS system, with the driving force behind implementing a program being emergency 911 addressing in the majority of counties.

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

Student Presenter(s):	Sponsor(s):	Department(s)
McDonald, James	Wall, David	Geography

Educational Experimentation System for Ultrasound Vibrometry and Vibro-Acoustography

Ultrasound Vibrometry and Vibro-Acoustography are two new non-invasive techniques to measure viscoelasticity of biological tissues. These techniques are instrumental in the detection of medical conditions. Both techniques use an ultrasonic transducer to produce focused ultrasound radiation force to vibrate tissue at lower frequencies which are about 10,000 times lower than the transducer frequency. Those low frequency vibrations are strongly correlated with tissue pathological status. Vibro-Acoustography is an imaging method implemented by listening to these lower frequency vibrations with a hydrophone. The intensity of the vibration represents the tissue viscoelasticity. Vibrometry uses an additional ultrasonic transducer to measure the speed of the induced shear wave propagation. With wave speeds and frequency data, quantitative viscosity and elasticity of the tissue can be solved. We are designing and developing an experimentation system for educational purpose. Based on a low budget, we are making our own ultrasound transducers, amplifiers, filters, water tanks, motion control system and control and data processing software.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Hillukka, Gary	Zheng, Yi	Electrical and Computer Engineering

Sim River

SimRiver is a simulation software package developed by Dr. Shigeki Mayama of Tokyo Gakugei University and his coworkers. Users can study and understand the relationship between human activity, river environments and diatoms easily.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Hoffer, Jeannette	Julius, Matthew	Biological Sciences

Analysis of Nutrient Loading and Escherichia. Coli Contamination of Johnson Creek

Land use often has a significant negative effect on water quality. Fertilizers over-applied on agricultural land and in residential areas run off into lakes, streams and wetlands. Furthermore, animal waste and septic systems that are not managed correctly become sources of bacteria (such as Escherichia coli) to waterways during rainfall. Johnson creek, a trout stream, starts in a wetland and flows to the Mississippi River near St. Augusta, MN (MPCA, 2006). From November 2007 through May 2009, a study was conducted on Johnson Creek to examine water quality indicators of the creek. The water was analyzed for pH, conductivity, phosphorus, nitrate, ammonium, total suspended solids, total solids, total coliform, and E. coli. Samples were taken once a week, as well as after significant rainfall events. The collected data indicates that the creek (and the Mississippi River it drains into) has impaired water quality due to the surrounding land use.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Stafne, Joseph	Rose, Charles; Bender, Michner	Environmental and Technological Studies

Ground Bounce Analysis and Reduction

Around the world engineers and manufacturers are trying to integrate as many circuits in a electronic chip or a device as possible for cost reduction and performance improvement. As complicity of devices increases, the noise limiting the performance also dramatically increased. Among all kinds of noise, noise on the power supply (or ground) is one of the worst. Ground bounce noise also known as Simultaneous Switching Noise (SSN) is becoming one of the major concerns for the high-speed digital computer systems with fast edge rates, high clock frequencies and low voltage levels. It causes significant signal integrity problems and electromagnetic interference for high speed circuits. Methods are devised to eliminate or to at least isolate the noise for Printed Circuit Boards (PCB). The methods include 1) building a moat around the noise source, 2) embedding high decoupling capacitance in the board, 3) fabricating high impedance surfaces between devices. Materials having high dielectric constant also reduce the problem but it increase crosstalk issues and board thickness. We are studying a new method called dielectric channel to reduce the problem.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Mukherjee, Debashree	Zheng, Yi; Goergen, Joel; Tomaszewski, Peter	Electrical and Computer Engineering

Meteorological Autonomous Aircraft

The Meteorological Autonomous Aircraft (MAA) will be designed as a mechanism that will take vertical measurements of temperature, barometric pressure, humidity and the horizontal wind vector to an altitude of at least 2 km. Upon retrieval the device will report measurements at an interval of 10-20 meters. Ideally the MAA will be a more reliable, functional, and cheaper replacement for a weather balloon. The MAA will be able to run any number of times within its battery life. Additionally, the quad copter will be equipped with a kill switch located on the ground beacon to provide remote power-down to satisfy FAA regulations.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Hagel, Matthew; Carlier, Jill; Lee, Desiree	Petzold, Mark	Electrical and Computer Engineering

Trends in Water Quality in Minnesota and Quetico Lakes

Several sources of water quality data exist on lakes located in the Boundary Waters Canoe Area Wilderness in Minnesota and the adjacent Quantico Provincial Park in Ontario, Canada that give insight into their geographic and ecological characteristics. The purpose of this research project is to organize data concerning geographic features and water quality measurements from these areas into a Geographic Information System, to analyze trends in water quality and to assist in creation and dissemination of the information to students and educators as well as the wilderness canoe paddlers that use those areas. The GIS displays and analyses will be used for classes and outreach and will be posted online for public access.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Reinhart, Jeffrey	Rose, Charles	Environmental and Technological Studies

A Cartogram and Choropleth Map Comparison of the 2008 Minnesota Senate Election

Thematic maps are created to show information about a specific theme such as population. Cartograms display the same attributes in terms of proportions that distort the map shapes. The choropleth maps on the other hand display the same data with a color variable. The purpose of this study was to demonstrate variation in perception between cartogram and choropleth maps. A number of maps were created to express the 2008 Minnesota Senate election results between Republican Senator Norm Coleman and the Democratic challenger Al Franken. The data used to generate the maps was downloaded from the Legislative Coordinating Commission-GIS website. Using ArcGIS 9.3, choropleth maps were created at the precinct and county level, and cartograms were created off these base maps using ArcGIS 9.2. It has become recognized that cartographic analysis and the presentation of different variables influences perception of the election results.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Anderson, Tedman	Wixon, Lewis	Geography

Measuring small wavelength shifts with a Spatial Heterodyne Spectrometer

In support of our NASA-sponsored project to develop an optical instrument capable of measuring upper atmospheric wind speeds from a satellite platform we have built and are testing a Spatial Heterodyne Spectrometer (SHS). SHS instruments show promise for space-based observations as they can be made much lighter than conventional instruments and are expected to have a longer orbital lifetime because they have no moving parts. The instrument is designed to measure the small wavelength shifts of -3 m/s (1 part in 10^8) introduced in atmospheric emission lines due to the atmospheric wind. To simulate this wavelength shift in the laboratory, we are modulating the frequency of a Helium-Neon laser with an acousto-optic modulator (AOM). Using the modulated source, SHS data has been obtained and we are currently developing data analysis tools to extract the small change in wavelength introduced by the AOM. Because of the accuracy needed, careful data interpretation and analysis is necessary.

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

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

Effects of a Lipid Depleted Food Source on Daphnia Magna Life Cycles

Cultures of the diatom Melosira varians Agardh were subjected to three different light/dark regimes. These day lengths provided growth conditions eliciting different stress responses in the algae. Stress in the diatom can be quantified via chlorophyll-a to lipid ratios. Variations in this ratio directly correspond to the "quality" of the diatom as a food source for aquatic grazers. Once chlorophyll-a to lipid ratios were documented, the diatoms were then fed to Daphnia magna for twenty days. The Daphnia magna were observed daily and the following metrics were scored: sex ratio, molting frequency, and growth and reproduction rates. Daphnia magna fed stressed (poor food quality) diatoms had significant differences from the control groups. These findings show that stress responses in diatoms may directly impact organisms at higher trophic levels.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Criswell, Rebekah	Rose, Charles	Environmental and Technological Studies

An Analysis of St. Cloud, Minnesota's, 2007 Crime Locations and Zoning Classifications

Municipalities have utilized zoning to develop and design their cities since the late 1920s. Urban planners and designers rely on crime mapping as a tool to map and detect patterns. This study compared zoning and crime mapping through spatial and mathematical analysis. The purpose of this study was to determine the relationship between the distributions of St. Cloud, Minnesota's, assaults and burglaries committed in 2007 in relation to the city's zoning map. It was hypothesized that zoning classification density correlates with crime frequency. The method of investigation consisted of cartographically portraying, in ArcGIS 9.3, the locations of assaults and burglaries in relation to the St. Cloud's zoning map. From the maps and data, the numbers of crimes per acre in each zoning classification were calculated. These numbers were then compared to the building or population density allowed by the zoning. From the data collection, mapping, and analysis, the hypothesis proved to be valid. Key words: Concentric Zone Theory, Social Disorganization Theory, environmental design/crime prevention, crime mapping, zoning.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Borgheiinck, Carrie	Wixon, Lewis	Geography

Synthesis and Characterization of Perylenetetracarboxdiimides

Derivatives of 3,4,9,10-perylene-tetracarboxylic-diimide's(PTCDI) were synthesized using 3,4,9,10-perylene-tetracarboxylic dianhydride (PTCDIA) and various amines. The products were purified by vacuum sublimation and characterized by UV-Vis, FTIR and NMR spectroscopy. The relationship between the optical and electronic properties and the solid state structure will be discussed.

Presentation Index: G-B 38 **Present Time:** 2:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Deuermeyer, Hank; Bennett, Michael	Lidberg, Russell; Neu, Donald	Chemistry, Physics, Astronomy and Engineering Science

Larval and Embryonic Fathead Minnows Ammonia Exposure

The action of ammonia was studied on larval and embryonic Pimephales promelas's predator avoidance behavior, the C-start. This study was done to investigate whether the EPA Water Quality Criteria guidelines for ammonia, an already known toxin to fish, are stringent enough by observing their effects on juvenile fish, as all previous studies utilized adult fish in setting the safe level guidelines of ammonia in the water. To the juvenile fathead minnow surviving to reproductive age is essential and a sufficient predator avoidance behavior is necessary, which may be effected through exposure to ammonia. By exposing juvenile fathead minnows to concentrations of ammonia below the safe guidelines, 200ppm/L, 400 ppm/L, and 800ppm/L this study investigated whether there may be a potential for a different level of vulnerability in juvenile fathead minnows by observing their highly sensitive C-start. During a predator-prey encounter, larval fish use an innate C-start escape pattern to move away from the threat. The larval fathead minnows were exposed for a period of twelve days and the embryos until hatched and allowed to grow for twelve days in well water. After the twelve day period the larval predator avoidance behavior was filmed on a high speed camera, 1000 frames/s. The filming has been completed and results will be presented at the colloquium.

Presentation Index: G-B 39 **Present Time:** 2:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Buerkley, Megan	Schoenfuss, Heiko	Biological Sciences

Using Mass Spectrometry to Identify Bacteria and Bacterial Products

Mass spectrometry was used for two purposes. First, efforts were directed at using bacterial extracts for speciation of organisms. Both environmental isolates and known strains of organisms were tested using crude extracts and partially purified materials. Preliminary findings indicate that peak patterns may be useful in classifying organisms into major groups. However, using expressed proteins was less useful in differentiating organisms. Second, a portion of a collection of Bacillus cereus isolates was tested for toxin expression. These organisms were originally isolated from honey, rice, peas, or spice packets. These samples were first tested using multiplex PCR to test for eight enterotoxin genes. These included hblC, hblD, hblA, nheA, nheB, nheC, cytk, and entFM. Culture supernatants were tested after 6, 18, 24, 48, or 168 hours to determine if toxin genes were being expressed and when toxin was first detectable using mass spectrometry. Mass spectrometry is very useful in determining gene expression and the time course for optimal toxin production.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Beeler, Jonathan	Schrank, Gordon	Biological Sciences

A Novel Short Pathway for the Semi-Synthesis of a potential Bioactive Molecule Betulone and its Analogs

Throughout the history of medical practices, numerous natural products and their extracts are widely used for curing/treating several human diseases. During the last two decades, research and development in triterpenoid-based natural products revealed remarkable biological activity of this particular class of plant metabolite. Recent studies on their biological and pharmaceutical properties identified them as a new class of non-toxic, antiviral and antibacterial agents with a novel mechanism of drug action. Ongoing pre-clinical and clinical tests of some novel triterpenoids e.g., Betulin, Betulinic Acid, Betulin 3-caffeate etc. have exhibited their strong anti-cancer and anti-HIV activity in vitro and in vivo. The prominent bioactivity of a naturally occurring, trace-abundant, triterpene molecule 'Betulone' has also indicated the bright perspective of its potential application in design and synthesis of triterpenoid-based antiviral chemotherapeutics, and created a solid platform for synthesizing Betulone and Betulone-based antiviral libraries. The ultimate goal of this research project is to develop a novel short pathway for the successful synthesis of Betulone and its derivatives. The logic of total synthesis vs. semi-synthesis with an emphasis on selective oxidation will be explained and evaluated. Application of modified Cannizzaro Reaction will be discussed in detail. The scale-up method developments and one-pot synthesis (simultaneous production) for another valuable antiviral drug precursor (Betulonic Acid) will also be described. Finally, the strategic design and designed synthesis for Betulone analogs as well as study on their structure-activity relationship will concisely be outlined.

Presentation Index: G-B 41 **Present Time:** 2:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Wienhold, Mark	Munshi, Kalyan	Chemistry

Histopathology Screening of Fish Populations

Treated wastewater effluents contain mixtures of pharmaceuticals in parts per trillion (ng/L) and parts per billion (ug/L) concentrations. Preliminary results indicate that tissue concentrations of these compounds in aquatic wildlife may differ from aquatic concentrations. In this study, we tested the hypothesis that exposure to these pharmaceutical compounds at aquatic concentrations will affect male fathead minnows and that the effects are cumulative because the internal uptake rates of the pharmaceuticals within the fish differ from tested aquatic concentrations. Fathead minnows were used for this study because the US Environmental Protection Agency has accepted fathead minnows as models for toxilogical studies. Mature male fathead minnows were exposed to twenty-one days of treatments of varying concentrations of the pharmaceutical compound or their mixture. Twenty fish were sacrificed before the exposure to establish a baseline of biological endpoints. After the exposure another twenty fish were sacrificed from each treatment and many biological markers were measured and compared to baseline results. The remaining minnows were introduced in pairs, one control and one exposed male, to a tank with a nesting site and a female. The males were monitored to evaluate their ability to compete for reproductive opportunities with the female. After this phase was completed all exposed twenty-five control males were sacrificed and analyzed for the same biological markers. Reproductive and hepatic organs were fixed in a 10% buffered formalin solution and prepared for histological analysis. The tissue samples were sectioned, stained and analyzed for specific markers within the tissue. The tissues were analyzed for the abundance of adipose tissues in the hepatic system and abundance of spermatozoa and spermatagonia in the reproductive system. The results are then analyzed using ANOVAs and other statistical methods.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Gacke, Jeramy	Schoenfuss, Heiko	Biological Sciences

Should People Eat Cloned Beef

Throughout the world beef is consumed in many different ways and forms, some countries even see the cow is a holy entity. So for many it is only natural to see the meat isles in grocery stores filled with beef products. But what if the meat you are consuming is not naturally made? What if you learned that some of the beef you may be consuming is actually cloned? Many issues arise with this topic but the issue that this paper covers is: Should people eat cloned beef products? The purpose of this investigation of SCSU spring semester 08 Biology 152 students was too see what they know about topics involved in the cloning of beef cattle. Specifically what they know about cloning, what they believe about cloned beef and what their behaviors are in accordance to cloned beef products.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Cagle, Eric	Simpson, Patricia	Biological Sciences

Immigration Stress and Marital Satisfaction

The goal of this research is to study the association between immigrant stress and levels of marital satisfaction, and to explore whether the association differs by the years lived in immigration, presence of children, or religious affiliation. The analysis will include 120 married individuals from the Former Soviet Union, 60 women and 60 men that immigrated to the United States within the last 15 years. My expectations are that the spouses who live in the US longer would report lower levels of stress and higher levels of marital satisfaction. The presence of children is a risk factor, and religious affiliation is a protective factor for spousal adjustment. The participants will complete demographic questionnaire, Dyadic Adjustment Scale (DAS), and the Talbieh Brief Distress Inventory (TBDI). The data will be analyzed using multiple regression tests.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Ruchko, Olena	Connor, Jennifer	Educational Leadership and Community Psychology

Water Quality Analysis of the Sauk River and Mississippi River Confluence

The major water quality factors affecting the Sauk River and Mississippi River are physical and chemical alterations due to human activities such as farming, construction, recreation, industrial, commercial, poor septic management, residential development and agricultural runoffs. Harmful substances, such as excess fertilizers, pesticides, disease pathogens, drugs used for livestock and organic matter contribute to health and environmental problems. E. coli is an indicator of the potential presence of pathogens that can get into the river system through poor septic systems and manure runoff. This research determines the nutrient and E. coli status of the Sauk River and Mississippi River confluence. Investigation of the factors contributing nutrient load and E. coli into the rivers may help to determine better management practices. Water samples from the Sauk River and Mississippi River are being analyzed at the Environmental Instrumentation and Soils Laboratory at St. Cloud State University for ammonia, nitrate, ortho-phosphorus, total solids, total suspended solids, pH and E. coli. Findings from the completed research study will be presented to the members of source water protection teams from the City of St. Cloud to discuss on contaminants, contaminant sources and water quality within or near the sample sites. Findings from the completed study may also be presented at community workshops pertaining to the water quality of the Sauk River and Mississippi River.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Niraula, Suresh; Bhattarai, Pallav	Bender, Michner	Environmental and Technological Studies

Teaching Group Work in Counselor Education Programs: The Importance of Screening

This poster makes a case for screening to be included in both the didactic and experiential phases of group work training in counselor education programs. Screening for group membership is an imperative part of group work, yet it is unclear how it is being taught and how it is being practiced in the field. A thorough literature review examines the importance of screening and current approaches for the training of group workers. Suggestions for future research include investigating the relationship between the training of students in regard to screening and their use of this skill in practice as a professional.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Finley, Amanda	Livingston, Tina	Educational Leadership and Community Psychology

Detecting Changes in Simulated Events: Using Variations of Momentary Time-Sampling to Measure Changes in Duration Events

The extent to which a greater proportion of small behavior changes could be detected with momentary time-sampling (MTS) was evaluated by (a) combining various interval sizes of partial-interval recording (PIR) with specific interval sizes of MTS and (b) using variable interval sizes of MTS that were based on means of 20 s and 1 min. For each targeted percentage, low, moderate, and high interresponse times to event-run ratios were compared with reversal designs to determine whether sensitivity increased with either variation of MTS. The results showed that (a) combinations of MTS and PIR and MTS and WIR yielded increased sensitivity over MTS alone; however, the increased sensitivity was offset by an increased probability of generating false positives and (b) variable-interval MTS produced comparable sensitivity to fixed-interval MTS. Thus, none of the three variations of MTS yielded increased detection of small behavior changes.

Presentation Index: G-B 48 **Present Time:** 2:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Carroll, Regina	Rapp, John	Educational Leadership and Community Psychology

Multitouch screen and telepresence robot

"Multi-touch is a human-computer interaction technique and the hardware devices that implement it. Multi-touch consists of a touch screen or touch tablet (touchpad) that recognizes multiple simultaneous touch points and software to interpret simultaneous touches". So a multitouch display is a display capable of multiple touch recognition. This presentation will talk about multitouch screen implemented using frustrated total internal reflection technology(FTIR).

Presentation Index: G-B 49 **Present Time:** 2:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Tchokouali, Christian; Poudel, Suraj; Meyer, Joseph	Gorcica, William; Hou, Ling	Art, Electrical and Computer Engineering

An Investigation of the Microwave Extinction and Scattering Properties of Realistic Frozen Hydrometeors

Snowflakes and snowflake aggregates have traditionally been parameterized as either frozen or fluffy ice spheres when modeling their scattering properties. However, these frozen hydrometeors hardly resemble spheres. Their complex shapes alone suggest that this parameterization may not be accurate. To investigate this, eight shape files were created using MATLAB, six resembling aggregates, one single snowflake, and one solid ice sphere. The scattering properties of these model shapes, in ice form, were calculated using DDSCAT 6.1, a FORTRAN program that makes use of the discrete dipole approximation (DDA) method. Mie theory was also used to calculate the scattering properties of an ice sphere in order to validate the DDSCAT results. Specific microwave frequencies and effective radii were investigated. The results indicate that the scattering, backscattering, and extinction efficiencies of the aggregates do not yield the same results as the sphere, implying the use of a sphere versus a more realistic aggregate or snowflake shape is not well justified. The results also indicate a miscalculation of the scattering properties by DDSCAT in the high frequency cases for the particles with a large effective radius. This possibly indicates that the dipole spacing in the particles, for these specific cases, may be too large. Further studies on the issue are warranted.

Presentation Index: G-B 50 **Present Time:** 2:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Wegwerth, Justin	Kubesh, Rodney	Earth and Atmospheric Sciences

The Value of the Golden Ratio

The Golden Ratio (1:1.618...) is a ratio that has been studied for centuries. Centered on the number phi (1.618..., pronounced 'fee'), this ratio has been examined throughout the years and has been used or found in many areas of life, including art, architecture, science and nature. A belief was held that the Golden Ratio was more pleasing to the eye than all other ratios. But do we still value the Golden Ratio the way we used to? A survey of Saint Cloud State University students reveals whether or not this astounding number still attracts attention. Where did the number phi come from? Where can it be found? Do we still value the Golden Ratio? All these questions will be investigated in the poster presentation The Value of the Golden Ratio.

Presentation Index: G-B 51 **Present Time:** 2:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Muhich, Molly	Walk, Stephen	Mathematics

The Changing Nature of the Field of Rehabilitation Counseling: Trends From the Past and Future Opportunities

The field of Rehabilitation Counseling has gone through numerous transitions over the past 70 years. Due to the nature of our programs and the opportunities that our graduates are finding, employment trends in recent years have changed. It has now become a more multi-faceted field with many opportunities for graduates. The graduate program in Rehabilitation Counseling has been in existence at St. Cloud State University since 1967. This study is based on surveys given to the past 15 years of graduates from SCSU. Some of the goals of this survey were to determine what our graduates are doing professionally in the field, to determine if or how we should tailor our program to this changing and dynamic field and to determine what occupational trends we may see now and in the future.

Presentation Index: G-B 52 **Present Time:** 2:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)
McCarthy, Kathleen	Kuhlman, Bradley	Counselor Education and Educational Psychology

Total Synthesis and Characterisation of Two Pharmaceutically Promising, Antiviral Drug Precursors from Triterpenoid-based Natural Products

One of the burning questions of 21st century seems to be the right choice for combating against the deadly threats of fatal viral replications of different etiology. Although modern research and developments in parallel and combinatorial synthesis for antiviral drug discovery contributed a lot in this direction and invented several antiviral drugs; however, their wide use in clinical practice is often quite limited due to the high toxicity and quick growth of viral drug resistance. One of the effective and trust-worthy trends in contemporary antiviral drug discovery research is to develop a thorough pathway for the strategic design and designed synthesis of natural-products based biologically active molecules and their analogs. Modern research and biological studies in triterpenoid-based natural products have shown the fruitfulness of their clinical use as potential antiviral and antibacterial chemotherapeutics. Ongoing biological tests of some novel triterpenoids e.g., Betulin, Betulinic acid and Betulonic Acid already indicated the perspectives of these natural products as potential drug precursors and opened a new avenue for design and synthesis of a new class of highly efficacious anti-cancer and anti-HIV agents based on natural products. The main objective of the proposed research project is to design a novel series of potential antiviral agents from Betulonic Aldehyde and Betulonic Acid and carrying out designed synthesis through several new key-intermediates. The next stage of the project will be followed by the characterization and possible study on structure-activity relationship, including the evaluation of their biological activity. Total synthesis of Betulonic Aldehyde and Betulonic Acid will concisely be described. Strategic design and synthesis of two pharmaceutically interesting drug precursors will thoroughly be discussed. The logic and feasibility of synthesizing a new generation of non-toxic, triterpenoid-based antiviral libraries will also be outlined.

Presentation Index: G-B 53 **Present Time:** 2:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Traore, Mohamed	Munshi, Kalyan	Chemistry

Improving Magnetic Random Acess Memories Using Ar+ Ion Implantation

Giant magnetoresistive (GMR) devices have already been commercially used in sensors and are finding lots of applications in biomedical research especially in new age biochips. We are mainly concentrating on their application for magnetic random access memory (MRAM) products. At the beginning of this year (2009) the first commercially viable GMR based MRAM product was unveiled with a capacity of 8Mbits and 16Mbits expected later this year. The problems facing these MRAM devices are low yield due to reliability and use of extremely thin films (0.5nm-60nm) and the magnetic characteristics of the devices themselves. These disadvantages are outweighed by the advantages of MRAM's like non volatility of the memory cell, fast read and write times and low power consumption, which leads many to believe that MRAM's will be the future of RAM devices and this will be realized within the decade. Though pessimists see the already mentioned problems mainly the unreliability of the device magnetic characteristics to be the downfall of GMR based MRAM's, we feel that with our research we may have a very simple solution to this problem based on averaging statistics. To check the validity of our theory we have fabricated GMR films and have designed and built test machinery which will enable us to verify our results in a timely and scientific manner.

Presentation Index: G-B 54 **Present Time:** 2:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Mendonsa, Riyan	Vogt, Timothy	Electrical and Computer Engineering

Greenhouse Gases and their effect on Global Warming

Global warming is a rising issue in our world today. There is scientific evidence that strongly suggests that the buildup greenhouse gas emissions are causing the earth's core temperature to rise, subsequently causing changes in the earth's climate. There are many human activities that produce these greenhouse gas emissions. Surveys were distributed to a whole population of EAS 104 students. I chose this sample due to the material that these students had already learned. There were a total of 167 surveys collected. A majority of the students were able to correctly answer questions based on knowledge of the subject as well as believed that there are effects of global warming occurring in Minnesota. Nevertheless, many students do not take the necessary steps to alleviate human impact on global warming. I have found based on the questions asked, students seem to be well informed on the issue of global warming, but as a society we need to promote even more the actions required in order to reduce our greenhouse gas emissions and limit the risk of global warming.

Presentation Index: G-B 55 **Present Time:** 2:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Walters, Anna	Simpson, Patricia	Biological Sciences

High-fructose Corn Syrup (HFCS) Derived Aldehydes, Glyoxal and Methylglyoxal, Modulate Human Liver Aldehyde Dehydrogenase Activity that may Lead to Non-alcoholic Steatohepatitis (NASH) and Diabetes

Consumption of high-fructose corn syrup (HFCS) a substitute for sucrose has steadily lead to an increase in obesity rate over the past 35 years in the western countries. Obesity is associated with the development of liver (hepatic steatosis) and this condition is furthered by high dietary HFCS. HFCS consumption also causes non-alcoholic fatty liver disease (NAFLD) in obese individuals. An even more life-threatening form of liver disease called non-alcoholic steatohepatitis (NASH) is also believed to be caused due to consumption of HFCS. It is believed that the above conditions are due to HFCS caused oxidative stress leading to reactive oxygen species (ROS) formation and generation of reactive aldehydes such as glyoxal and methylglyoxal. Aldehyde dehydrogenase (ALDH) enzyme system in general catalyzes the detoxification of aldehydes. Whether glyoxal and methylglyoxal are substrates/inhibitors for human ALDHs is being determined. In this regard, we have purified two human liver ALDHs, ALDH1A1 and ALDH2 and tested glyoxal and methylglyoxal as substrates. ALDH2 as well as ALDH1A1 utilize methylglyoxal as substrate, whereas glyoxal is a poor substrate. Whether glyoxal and methylglyoxal are inhibitors of these enzymes is currently being explored. If the later proves to be true, NASH may originate from inactivation of ALDHs.

Presentation Index: G-B 56 **Present Time:** 2:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Teoh, Wei Loon	Sreerama, Lakshmaiah	Chemistry

Session H-GN **Student Survey** **Glacier North**

Effect of Question Order and Response Order in SCSU Spring 2008 Student Survey

The research assistants of the St. Cloud State University Survey will be presenting on the results of the "Spring 2008 SCSU Student Omnibus Survey." Using the computer assisted telephone interviewing, or CATI system, a systematically generated random sample of students was asked to answer a variety of questions. These questions ranged from general opinions of the university to topics including campus safety, hate crimes, and smoking and alcohol usage. The focus of the presentation will be on question order and response order effects. Question order effects occur when two or more questions with related content are placed next to each other in a survey and the first question has an impact on the respondent's choice for the second question. Response order effects occur when there is a tendency for the respondents to choose or avoid the first or last alternative in a set of choices offered. In the past, researchers have reported mixed results when studying the presence or absence of these effects. This presentation will examine whether or not question order and response order have affected the students' responses in the 2008 spring survey.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Vasil'Yeva, Maria; Karsten, Keith; Sissoko, Oumou	Frank, Stephen; Wagner, Steven; Hammes, Michelle; Robinson, David; Zerbib, Sandrine	Political Science, Sociology and Anthropology, Statistics

Mommy Wars: A Lose-Lose Situation for Mothers in Modern Society

"The so-called mommy wars is a profoundly emotional and symbolic issue driven by social forces no one is likely to acknowledge and makes every one of us feel unquestionably right" (Peters 24).What defines a good mother? What defines a powerful, strong woman? Can you truly be both? From the second a woman decides to bear children, she embarks on a journey of redefining herself as either a "good mother" or a "strong independent feminist working mother." To many facets of feminist study on the issue, a woman who "chooses" to stay home and raise her children has abandoned her obligation to serve society and represent women's right to be equal to men in the workplace and in society (Peters 23). It becomes a woman's responsibility to work in order to assert her right and thus her worth, in society. A woman who stays home to raise children becomes a "sell-out" with little or no worth in society (Story 4). A woman who works has an equally stressful cross to bear; she has essentially "abandoned" her family, putting herself first and allowing her children to be raised by "strangers." Therefore, she can in no way be perceived as a good mother (Cuddy 704). Unfortunately, this holds true even if a woman may financially have little "choice" in the matter. So, how do mothers compete within this duality we have created in society? She seemingly has no positive choice: she can be either a good mother, stay home and disconnect from the world; or she can be a strong, powerful woman and abandon her family for her own personal gain. The effect of this tug-of-war has women engulfed in the ideology of a modern institution of motherhood and is detrimental to gender equality in American society (Green 84).

Presentation Index: H-GN 2 **Present Time:** 4:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Haberman, Melissa	Freilinger, Rebecca; Pickens, Alexandra	English, Ethnic Studies

Reproductive Effects of Variable Estradiol Treatments on Male Fathead Minnows (Pimephales promelas)

In this study, we investigated the effects of variable 17B-estradiol treatments on morphology, physiology and behavior of male fathead minnows. In conventional chemical exposure experiments, fish are subjected to continuous, steady concentrations. Actual environmental concentrations vary due to rain events, changes in effluent discharge and other environmental conditions. Previous studies have found that temporal variations in the concentration of estrogenic chemicals actually enhance observed effects. Mature male fathead minnows were exposed for 21 days at environmentally realistic concentrations of 17B-estradiol in steady (30ng/L), high to low (gradual decrease 65 to 0 ng/L), low to high (gradual increase 0 to 65 ng/L), intermittent (0 and 65 ng/L at 3 day intervals) and variable (random from 7 to 70 ng/L) patterns. The steady concentration of 30 ng/L reflects total estradiol equivalency values reported for some effluents in North America. The sum of estradiol applied per treatments was similar and actual estradiol concentrations were within 20% of target values. We collected anatomical (secondary sexual characteristics, liver and gonad weights, histology), physiological (vitellogenin, mRNA induction) and behavioral (aggression, nest-holding) endpoints. Few changes were seen in standard biological endpoints, however vitellogenin concentrations were significantly elevated in all treatments. Additionally, we addressed differences in the expression of vitellogenin mRNA and ELISA endpoints. Funded by US EPA STAR (R832741-01-0).

Presentation Index: H-GN 3 **Present Time:** 4:20 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Hyndman, Katie	Schoenfuss, Heiko	Biological Sciences

Session H-GS | **Social Sciences-1** | **Glacier South**

Challenging Structures of Power-Immigrant Solidarity

I will be conducting research on my experiences with an ongoing service project at Casa Guadalupe, through observations of Latino immigrant workers and their work experiences. I plan to examine what motivates Latino immigrants to work in specific areas. I would also like to have a more comprehensive understanding of how or why being an immigrant affects migration and the places immigrants work. I feel it will be important to understand the motivation of an immigrant worker and why or how they came to be working in the United States. Discrimination based on age, gender, and race in the Latino community will also be observed along with the stigma of being an immigrant and how that affects their work. Another aspect of the research will relate to education such as how much, if any, education is needed for the jobs and how Latino immigrants view education and whether they think it is necessary to succeed in life. Besides my observations of the Latino immigrant community, I will be documenting my experiences as an unpaid worker and compare it to work I've been paid to do. The purpose of my research is to explore, describe, and explain worker solidarity with Latino immigrants to gain a better understanding of the inequalities Latino immigrants face and apply social theory to the findings. I will be able to use my social study of Latino immigrant workers to describe situations and events past and current. I will be documenting my findings through journals, interviews, and surveys. The data recorded will be a combination of qualitative studies and anthropological ethnography. The research paper will explain to others the finds of my work and whether there is any correlation to education, race, and citizenship status. Different units of analysis will be observed such as individuals, groups, organizations, and social interactions.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Anastasi, Lisa	Greider, Paul	Sociology and Anthropology

Community Service Learning Project: Independence Center

My paper will be discussing my experience as a volunteer for the Independence Center of St. Cloud, Minnesota. The Independence Center is a non-profit organization creating opportunities for people with special needs. As a volunteer, I am their to encourage and support clients while participating in various activities around the center. The Independence Center is a place for clients to come during the day to get away from their daily lives at home. They interact with other people with special needs as well as staff and volunteers. The most important aspect of the Independence Center is giving clients the opportunity to engage in employed work. Here, the clients are paid doing simple tasks such as crushing cans and assembling coin holders. It gives them a chance to feel they are contributing to their community and making a wage while doing so. As a student in the Sociology of Work course I found it was important and interesting to address and see how people with special needs engage in employed work. Everyone should be given the opportunity to contribute and feel their are helping out in their community.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Geyer, Courtney	Greider, Paul	Sociology and Anthropology

The Disparities Between the Old and New Economy: Conversations with Senior Citizens

My research project is centered on trying to understand the difference between the old and new economy through the eyes of senior citizens who are no longer working. The first part of my project pays particular attention to the way the elderly understand the old economy versus the new economy. I will be looking at how were/are they affected by the changes of work life. How have they dealt with these changes? Taking into account that people have worked in different industries, (some have worked in factories doing hard labor and some have done office jobs) I look at the effects of the job on the workers in the later stages of life. The second part of the project is looking at the differences between my volunteer work at the senior center versus my paid job and what are the rewards for doing these jobs. I will be taking into account that I am a graduate student making my way through college and my time is torn between working to pay the bills and my education.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Scott, Lwando	Greider, Paul	Sociology and Anthropology

US Patriot Act- Brain Draining the US Intellectual Capital

This paper examines the impact of the US Patriot Act on academia in the United States. The US Patriot Act and administrative visa procedures are examined to judge their effects on international student enrollment and research conducted at American universities. In this paper, we will assess the hypothesis that the new visa requirements are detrimentally impacting our intellectual community. The new restrictions make it more difficult for international students to come to the United States to study. This in turn has had a negative effect on academia by making it more difficult for American universities to attract bright students from around the world to study and conduct research in the United States. In addition, because of delays caused by the new visa requirements many scientists and scholars are unable to attend scientific conferences in the United States to present their knowledge. Consequently, American professionals, researchers and students are denied the opportunity to remain apprised of and participate in new discoveries and innovations. This paper therefore seeks to examine the US Patriot Act's effect on the free flow of talent and skills needed to sustain America's intellectual capital.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Owen, Erin	Hassan, Aref	Political Science

Session H-VN **Behavioral Sciences & Engineering** **Voyageurs North**

Black & White: Perceptions into the Effect of Race and Type of Aggression of Female Aggression

Previous research on stereotypes and aggression has shown Black men to be perceived as more threatening and aggressive than White men (Payne, 2001; Sagar & Schofield, 1980). In other research, it has been found that while boys are more likely to engage in physical and verbal aggression, girls are more likely to engage in relational aggression (Basow et al., 2007; Crick & Grotpeter, 1995). The purpose of the present study is to combine these factors by examining whether female participants' perceptions of aggression and feelings of personal risk are affected by the type of aggression and the race of female perpetrators. It is hypothesized that black female participants will be perceived as more verbally aggressive and white female participants will be viewed as more relationally aggressive. The current study is a 2 (Race: White or Black) X 3 (Type of Aggression: physical, verbal, or relational) between subjects design. White, female participants read one of three vignettes portraying a college social situation in which a new peer engages in physical, verbal, or relational aggression. A picture of a White female or a Black female was attached to each vignette. Participants then answered questionnaires pertaining to perceptions of aggression and feelings of personal risk. The results of this study confirmed the hypothesis that Black females are perceived as more verbally aggressive and White females as more relationally aggressive. Neither Black nor White females were viewed as potential personal risks. This study has implications for how we perceive aggression in others and may possibly reflect our resulting interactions with them in situations relating to racial and gender interactions.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Olson, Angela	Buswell, Brenda	Psychology

Defective Shotshell Recycling System

Federal Premium Ammunition currently spends more than $150k each year disposing defective shot shells produced during the course of high speed production. The defective shot shells are hazardous in nature due to the explosive primer and highly flammable propellant used to construct the shells. For this reason, special considerations must be taken when dismantled, transporting, and disposing of the shells. The process employed for dismantling and disposal of the shot shells is labor intensive and requires that the shell components be transferred from the production line through several stations. In order to reduce current handling risks and costs, an automated shot shell dismantling and recycling system need to be designed for in plant use that quickly removes, defuses, and collects hazardous materials as well as separates non-hazardous components for recycling.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Peterson, Yusan; Tan, Zheng Guan; VanKeulen, Christopher	Bekkala, Andrew	Mechanical and Manufacturing Engineering

South Africa & Laos: a Comparative Study of the Methods of Eradicating Poverty

I had the opportunity to participate in two study abroad programs offered by St. Cloud State University. In 2006, I went to South Africa for a semester where I interned at the Nelson Mandela Bay Municipality. In 2008, I participated in a three week program in Thailand and Laos. In both countries, South Africa and Laos, I studied the government's strategies and implementations of laws to eradicate poverty and to improve the lives of its citizens. One way the government of South Africa is trying to improve the lives of the people in the townships are through it is implementations of a new program called the Reconstruction and Development Program (RDP). RDP was established in 1993. It's principle aim is to alleviate poverty, reconstruct the economy and build a democratic nation. The Lao government is trying to eliminate poverty through the implementation of the ten year Socio-Economic Development Strategy (2001-2010). In 2001, the Lao government introduced the SEDS in order to reduce the poverty in the communist run nation. This ten year plan is aimed to cut poverty by half at the end of the decade.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Zeleke, Hermon	Johnson, Robert	Ethnic Studies

Bicycle Rack Lifting Mechanism

The purpose of this project was to design an inexpensive, light weight, lift mechanism for an upright roof-mounted bicycle carrier to help with loading a bicycle to a roof mounted bicycle carrier. The lift mechanism is intended to ease the process of mounting the bike on to the top of the car. The engineering methods used to design this mechanism include both hand calculations and finite element analysis (FEA) used in conjunction to aid the design process and ensure that failure of the mechanism does not occur. The current design was selected from three styles and consists of three main linkages, which are mounted to the top of the vehicle by using mounting cross bars. The three linkages effortlessly move the bike from near the ground to the top of the car. Once the bicycle carrier and bicycle are attached to the lift mechanism, the mechanism lifts the bicycle and carrier onto the car, which can then be locked in place.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Guenther, Casandra; Carlson, Nicholas	Covey, Steven	Mechanical and Manufacturing Engineering

Session H-VS **Performance** **Voyageurs South**

Matilda

In our presentation, we will explain the event "Duo Interpretation". Duo Interpretation is a competitive forensics (speech and debate) event where two people interpret a piece of drama through voice and movement. Forensics is an extra-curricular activity that allows our team to travel around the country competing in speaking competitions. In our particular piece we will interpret the screenplay "Matilda" by Nicholas Kazan. This entertaining piece attempts to bridge the gap between manuscript speaking and acting. After a brief description of the event, we will perform the piece (about 10 minutes) and upon conclusion, we would appreciate audience feedback.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Rooney, Anna; Schmoll, Casey	Janda, Denee; Wells, Scott	Communication Studies

Hyper-stoichiometric

The purpose of this project is to use Simulink to develop a control scheme for the air-fuel mixture for an internal combustion engine. An Internal combustion engine runs slightly rich of a Stoichiometric mixture of air-fuel ratio of 14.7:1. Our main goal is to show the control scheme to reach a mixture with a ratio greater than the Stoichiometric ratio (14.7:1). With the increase of the ratio, the engine is said to run on a hyper-Stoichiometric mode. The outcome from this improvement is maximizing the fuel economic efficiency.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Soh, Steve; Almazan, Jose; Tulachan, Ashok	Bekkala, Andrew	Mechanical and Manufacturing Engineering

Musical Experience and Language Learning

Previous studies (Besson, Schoen, Moreno, Santos, & Magne, 2007; Costa-Giomi, 2004) have shown a relationship between music and language with regard to physiological, cognitive and affective factors, but this relationship has not been adequately explored in connection with second language learning. This study examines the possible relationship between musical experience and multiple language learning variables amongst a group of English language learners. The learners were surveyed for their language learning anxiety, self-perceptions of language competence and different experiences the learner may have had with music such as performance experience and formal musical training. The learners also performed two tasks: (1) phonological memory task and (2) pitch-processing task. The presentation will report the results of the data analysis and discuss their implications for our understanding of the relationship between musical experience and second language learning.

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

Student Presenter(s):	Sponsor(s):	Department(s)
VanderStoep, Jessica	Kim, Choonkyong	English

Session I-B **Poster Session III - All Disciplines** **Ballroom**

Design and Construction of Electrical Vehicle

Electric motor powered vehicles (EV) are becoming a popular alternative to internal combustion engine (ICE) models due to a lack of air pollutants, ability to provide high torque from rest, as well as providing less noise pollution. However, EVs are still more expensive than traditional ICE models due to design hurdles such as limited range of batteries, and long recharge times. There is a need for lighter, more efficient EVs. The objective of this project is to fabricate a light weight, one person EV, with a max speed of 30-35 mph. The chassis is being designed around two electric hub motors. Components such as steering, suspension, frame design, frame construction and electronic control systems are being designed by the research team as well. A three wheel design was chosen to provide a lower drag friction coefficient. As a result of the construction of the vehicle, the participants are gaining an in depth understanding of the benefits and constraints of designing an electric vehicle. Also, the path has been paved for future design teams, consisting of both electrical and mechanical engineering students, to make improvements to the design which could incorporate regenerative braking, and solar panel recharging systems.

Presentation Index: I-B 1 **Present Time:** 4:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Janisch, Robert; Goyette, Thomas; Forsman, Jenifer; Rescigno, Emilio; Wilson, Jonathan; Heikkinen, Kyle; Shrestha, Guinness	Vogt, Timothy	Electrical and Computer Engineering

The Current Economic Condition and Its Effect on SCSU

The downturn in the economy has impacted all sectors of the economy in the United States. The State of Minnesota and, in particular, St Cloud State University is no exception as local employment is down, local unemployment is up, enrollment at St. Cloud State University is down, and SCSU's administration speaks of budget cuts. This study examined the impact of the economy on SCSU students and explored their recommendations for addressing the issues. Our poster represents the ideas and thoughts of a number of various students at St. Cloud State University and their recommendations for SCSU's administration given the state of the current economy.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Johnson, Ben; Voigt, Katie; Kreidermacher, Robert	Polacco, Alexander	Management

Wind Energy

This project was about wind energy. It looked at the knowledge, beliefs and experiences of a group of people with wind energy. The group of people surveyed was the fall semester of EAS 104 students at Saint Cloud State University. For the most part, EAS 104 students were fairly knowledgeable about wind energy. They also had a fair amount of experience with wind energy. EAS 104 students mostly believed that wind energy is a viable option. Overall, EAS 104 students have a good knowledge base, had a fair amount of experience and believe greatly in the viability of wind energy.

Presentation Index: I-B 3 **Present Time:** 4:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Nelson, Bradley	Hoff, Jean	Earth and Atmospheric Sciences

The Bilingual Dance: Factors that Contribute to the Language Choice of Bilingual Mothers

The study of the factors which contribute to the language choice of bilingual mothers was designed to more deeply examine how parenting in the United States works in families for whom English is a second language. In depth interviews were used to explore the beliefs and experiences concerning language choice of eight bilingual mothers with young children. Previous literature in the field has described attitudes towards and strategies for bilingual language maintenance, but little is available on how this process actually works in families. All of the women interviewed were from Mexico, with Spanish as their original language. The study identified some important insights about the ways that parents and children adapt to each other in their language use, and the manner in which outside and inside factors impact the family in its developing language environment. These insights can support professionals in their service to bilingual families, as well as assisting the parents themselves as they continue in their endeavor to raise bilingual children in the United States.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Jentz, Karen	Palm, Glen	Child and Family Studies

Humane Society Community Awareness

We are presenting a poster on our volunteer work involving the community and animals at the Tri-County Humane Society. We will be presenting what we are involved in including our leadership positions. We will also be presenting on different ways the community can help and make a difference. We want to create awareness to society on the local areas of need in the community and to help animals in need.

Presentation Index: I-B 5 **Present Time:** 4:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Kowalski, Amanda; Faidley, Kristen	Havir, Linda	Sociology and Anthropology

The Recruitment and Selection Process of a Director of Human Resources

This Human Resource Management, student project encompasses the employee selection process, highlighting the job analysis process, resulting position descriptions, creation of an in-depth recruitment plan within a budget and EEO compliant, selection of pre-employment tests that meet validity criteria, phone screening, writing behavioral interview questions, conducting background checks, consideration of Affirmative Action goals, planning for drug testing, all encompassing a multiple hurdles approach.

Presentation Index: I-B 6 **Present Time:** 4:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Faidley, Kristen; Sanoski, Melissa; Thielen, Katherine; Wendland, Jessica	Davis, Elaine	Management

Grandma's Still Special

Aging individuals frequently experience physical and cognitive declines that may contribute to social isolation. Through social interaction, aging individuals may continue to shape and benefit their society. This poster presentation focuses on recognizing physical and cognitive strengths despite aging processes. Opportunities for continued social interaction are identified.

Presentation Index: I-B 7 **Present Time:** 4:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Lindstrom, Sheila	Havir, Linda	Sociology and Anthropology

Diversity in Health Care: How Prejudice Impacts Care

My experience as a health care worker has presented me with many instances of hearing fellow medical staff utter hateful, racist, and prejudiced remarks about patients. I have witnessed medical staff lying to patients by denying that the facility provides assistance and transportation services to those who are financially in need. I knew how these situations made me feel, but I wondered how such attitudes impacted the care and experience of patients. The necessity for health care spans all ethnicities, cultures, and socioeconomic statuses. Health care workers including physicians, nurses and various technicians provide vital services in the greatest times of need for many people. But if the care giver harbors feelings of hate or prejudice towards the people they serve, how is patient care impacted? This research project focuses on identifying feelings of hatred, racism and various other prejudices in health care workers and how those feelings translate to patients during care. To determine the presence of such attitudes, a comprehensive and anonymous survey will be administered to a selection of medical personnel. The goal of this study is to identify areas of weakness in diversity tolerance in a facility providing care in the Central MN area. This information, through the assistance of administrative staff, will be utilized to raise awareness and improve tolerance and standards of care.

Presentation Index: I-B 8 **Present Time:** 4:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Michel, Amber	Havir, Linda	Sociology and Anthropology

Individual Differences in Internet Usage

The relationship between motives and the uses of the internet with various individual difference variables (e.g., need for closure, internal/external locus of control, impulsivity, sensation seeking, and behavioral approach/inhibition) was explored. This study explored which individual differences other than personality are associated with the motives and uses of the internet. There were 41 female participants that volunteered to fill out several questionnaires. The current research is designed to understand the behaviors and motives that people have when using the internet how these motives and uses relate to various individual differences.

Presentation Index: I-B 9 **Present Time:** 4:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Hammell, Tristan	Buswell, Brenda	Psychology

Spatial Characteristics of Mortgage Foreclosures in Sherburne County Minnesota from 2006 to 2008

This study analyzes the spatial patterns of foreclosures in Sherburne County, Minnesota from 2006 to 2008. Utilizing shape files and foreclosure addresses as recorded by the Sherburne County Public Works Department and the County Assessor's Office, spatial patterns of foreclosures were established. Although there was a dramatic increase in the number of foreclosures between 2006 and 2008, ArcMap's statistical tools determined that the spatial pattern of foreclosures remained especially dense and were restricted primarily to urban areas.

Presentation Index: I-B 10 **Present Time:** 4:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Langager, Matthew	Wixon, Lewis	Geography

Role of Human Aldehyde Dehydrogenase7A1 in the Metabolism of Anticancer drug Cyclophosphamide and Environmental Contaminants

Aldehyde dehydrogenases are group of enzymes that catalyze the oxidation of endogenous and exogenous aldehydes to the corresponding carboxylic acids. The metabolism of environmental contaminants like ethylene glycol ethers and anticancer drugs such as cylcophosphamide are affected by this group of enzymes. Aldehyde dehydrogenase catalyzed oxidation of ethylene glycol ethers leads to the formation of toxic alkoxyacetic acid metabolites which cause delayed encephalopathy, spermatotoxicity, liver and kidney damage. On the other hand, aldehyde dehydrogenase catalyzed oxidation of cylcophosphamide leads to pharmacologically inactive ingredients, which cause antitumor resistance in cancer cells. Although the involvement of certain aldehyde dehydrogenases in the metabolism of these two agents is well understood, little is known about the role of less common aldehyde dehydrogenase isoenzymes such as ALDH7A1. The goal of this project was to determine the role of ALDH7A1 on the metabolism of the above two agents. In this regard, we have successfully cloned ALDH7A1 in to a bacterial expression vector, PET15b. This is accomplished by rescuing the ALDH7A1 cDNA fragment from a cloning vector purchased from American Type Culture Collection in to PET15b vector. The resulting clone, PET15b-ALDH7A1 was selected for ampiclillin resistance. This clone allows for the expression of ALDH7A1 protein with an addition of poly his-tag at the c-terminal end of the protein. Accordingly, the protein can be purified by Ni-sepharose affinity chromatography. Further characterization of ALDH7A1 with regard to it is ability to catalyze oxidation of various aldehydes is being undertaken.

Presentation Index: I-B 11 **Present Time:** 4:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Ayalew, Assefa	Sreerama, Lakshmaiah	Chemistry

Self-Handicapping as a Function of Implicit Theory and Achievement Goal Motivation in Females

This research explored the effect that implicit theories of ability and achievement goals have on behavioral and self-reported self-handicapping. Dweck and Leggett (1988) proposed that people adopt either an entity approach to ability (that ability is stable and unchangeable) or an incremental approach to ability (ability is not fixed and can be changed). Achievement goals have been classified into performance-avoidance (a goal to avoid showing performance incompetence), performance-approach (a goal to approach showing performance competence) and mastery (a goal to develop intrapersonal competence) (Elliot, Cury, Fryer, & Huguet, 2006). While these two variables have been examined correlationally with self-handicapping (Rhodewalt, 1994) and experimentally manipulating achievement goals with self-handicapping (Elliot et al., 2006), no study has experimentally manipulated both implicit theories of ability and achievement goals to examine their combined causal effect on behavioral and self-reported handicapping. Female participants were given an intellectual ability test complete with manipulations of the independent variables. Both behavioral and self-reported self-handicapping was measured. A series of 2 (implicit theory: entity and incremental) x3 (achievement goal: performance-avoidance, performance-approach, and mastery) between-subjects analysis of variances (ANOVAs) were conducted. An interaction between implicit theory (entity and incremental) and achievement goal (performance-approach, performance-avoidance and mastery) is predicted such that when participants adopt a performance-approach goal, there will be no difference in self-reported and behavioral self-handicapping between participants who adopt an entity perspective than an incremental perspective. However, when participants adopt performance-avoidance and mastery goals, those with an entity perspective should be more likely to engage in self-reported and behavioral self-handicapping than those with an incremental perspective. With performance-avoidance goals, the combination of entity perspective and performance-avoidance goal will push these participants into doing more self-handicapping. With mastery goals, the combination of incremental perspective and mastery goal will push these participants into doing less self-handicapping.

Presentation Index: I-B 12 **Present Time:** 4:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Kloss, Melissa	Buswell, Brenda	Psychology

Applied Structural Genomics

This undergraduate research experience was developed in the laboratory of Bruce Jacobson Ph. D., formerly Vice President of Research at SGX. As a basis for this effort, the gene-to-protein process developed for the NIH funded Structural Genomics Initiative at SGX was modified to introduce students to the following techniques: PCR cloning, protein over-expression, large-scale protein purification, biophysical characterization (e.g. LC-MS, enzyme assay development), and crystallization. A peer mentor model was adopted with all work performed by teams consisting of inexperienced students (typically 2nd semester freshmen), experienced undergraduates and graduate students with faculty oversight. At the end of this experience, students have gained hands-on experience in molecular biology and biophysical techniques that provide a foundation for additional research and internship opportunities. The process is scalable, and can readily accommodate a virtually unlimited number of teams. An additional benefit of this process is that it is generic and can be used to enhance the efforts of other researchers by providing high-throughput cloning and expression services. This will serve as a basis for collaboration with researchers within the university.

Presentation Index: I-B 13 **Present Time:** 4:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Lieser, Elizabeth Ann	Jacobson, Bruce	Biological Sciences

High Speed Channel Modeling

Technology has become the need of every individual and there is no imagination of life without it. Though there are many different types of technologies, I am talking about internet, cell phones, computers, GPS, etc. Human needs have always been increasing and so the technology. For example, cell phones were once used for only conversation, now has features like text messaging, internet browsing, global positioning system, audio, video, etc. The numbers of users are enormous and it's a challenge for the engineers to meet the growing demands. Hence there is need to increase the SPEED of data communication. Let me now introduce background of my work which ultimately aims at achieving High Speed. Whenever data is transmitted, no matter through air or cable, it needs to be processed in the BACKPLANE (BP). Backplanes are similar to the motherboard in our PC. Until few years back, these backplanes could support data rates up to 3Gbps- 4Gbps (Giga bits per seconds). It means that one can comfortably transmit 3,000,000,000 bits per seconds through these backplanes without any error. Now with the increasing speed, the engineers are trying to develop new backplanes that could support 10Gbps-40Gbps, which is extremely complicated task. I am working under the guidance of Dr.Zheng to develop software that can tell us the behavior of the backplane when we try to transmit 10Gbps or more. The data on the output side of the BP is overlapped to form a structure that resembles an eye, called as Eye Diagram. A good or bad BP is discriminated on the basis of Eye Diagram.

Presentation Index: I-B 14 **Present Time:** 4:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Mohammed, Naseeruddin	Zheng, Yi; Goergen, Joel	Electrical and Computer Engineering

Mille Lacs County Sexual Education Curriculum

The purpose of this study was to determine attitudes of policy makers at four schools in Mille Lacs County on the content that should be included in sexual education curriculum. This county has a teen pregnancy rate that is significantly higher than the State of Minnesota signifying a high rate of unprotected sex among teens. Forty-five surveys were distributed by a participant at each school and 39 were returned. The answers were compiled and analyzed to determine which topics the policy makers desired in their curriculum. The results demonstrated a desire for comprehensive sexual curriculum for all four schools. A program promoting abstinence and the use of contraceptives to prevent unintended pregnancies and sexually transmitted infections was recommended. Based on the findings, the current sexual education curriculum needs to be reevaluated to decrease the rate of teen pregnancy and enhance education regarding prevention of sexually transmitted diseases.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Weyer, Jayme; Johnson, Rebecca; Flynn, Erin; Morseth, Tracy	Lenz, Brenda; Morrison-Sandberg, Leslie	Nursing Science

Phytolith Assemblages and Opal Concentrations from Modern Soils Differentiate Temperate Grassland Vegetation of Different Types in an Experimental Study at Cedar Creek, Minnesota

Many phytolith researchers assume phytoliths in modern soils reflect vegetation at the surface. We test this assumption and determine whether ecotonal boundaries in temperate grasslands can be delineated based on silica records in the soils. We assess difference in phytolith concentration and diversity of morphotypes under controlled conditions of the Cedar Creek Historical Natural Area E120 experiment, where mixtures of C3 grasses, C4 grasses, legumes, forbs and woody plants were grown for eight years. The plots are maintained to contain primarily the selected species, providing an opportunity to test hypotheses regarding phytolith production patterns under different functional groups of plants. We took soil samples from sixty 9x9 meter plots in a former brome field prepared with herbicide, fire and removing 6-8cm of top-soil. They were seeded to have 1, 2, 4, 8, or 16 species in different functional group mixtures. Pinch soil samples of 20g from 10 locations inside each plot were obtained. We extracted opal from each sample by chemically removing organics and carbonates and using heavy liquid flotation. We also used an alternative method of chemical dissolution of opal on selected samples to test the accuracy. We used microscopy to count the phytolith forms and we analyzed the phytolith forms on the plots against each other and against the forms found in the plants that grow on each plot. The statistical analysis includes multiple regression, PCA and cluster analysis. This shows the extent of ecotonal boundaries and species' composition reflected in phytolith assemblages was most successful with grass-dominated plots: it was accurate at determining if/where grasses were present, distinguishing between C3 and C4 grasses. Although the majority of phytoliths were from grass, some were from forbs and woody plants. The biomass and percent cover were not reflected as strongly as species' composition in the modern soil phytolith assemblages.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Bagent, Chelsey	Blinnikov, Mikhail	Geography

Effects of Window View at a Dormitory Setting

Different views in a university dormitory setting were investigated. The views were either a natural view of the Mississippi River or a built view of a university building. The participants were surveyed on multiple facets of the dormitory living. Some of the measurements that measured the effects of the different views were Perceived Stress Scale, time spent in rooms and view likeness scale. The purpose of this study was to find out whether students in a dormitory setting preferred the natural view more than the built view and the different effects of the view. The result showed that natural view were preferred than the building view and more time were spent in the natural view than the building view.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Namai, Kazue	Jazwinski, Christine	Psychology

Assessment Practices of School-Based Speech-Language Pathologists in Minnesota

This study investigated the assessment practices of school-based speech-language pathologists in Minnesota. An electronic survey was sent to speech-language pathologists to identify the number of students assessed during the 2007-2008 school year, the number of students who did not meet MN Department of Education criteria for speech-language services, and the decisions that were made by speech-language pathologists when students did not meet eligibility criteria. In addition to providing information about assessment practices and decisions made if eligibility criteria were not met, factors and measures considered in selecting tests (i.e. sensitivity, specificity, validity), and overall satisfaction with assessment practices were reviewed. The results from the survey indicated that more than half of speech-language pathologists assessed 16 or more students in the school year. They also reported that, of those students assessed, between 1 and 5 students did not qualify for speech-language services. The speech-language pathologists reported that they made different decisions if a student did not qualify for services based on how close the student was to the cut-off criterion for qualifying for services. Overall, the most frequent decision made when a student did not qualify for speech-language services was to provide suggestions to other school faculty working with the student.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Hilsgen, Heather	Devers, Monica	Communication Sciences and Disorders

Emergency Rescue Response Locator System

Throughout the next two semesters our group would like to design and build an Emergency Rescue Response system. The system will be capable of increasing the abilities of emergency response units to evaluate a situation, by being able to decrease this time the responders will be able to help victims faster, putting them in the position to save lives that previously may not have been possible to save. It will utilize features of existing systems while offering improvements which have not been used for such a device. The system which we wish to design will provide several key factors that will help emergency personnel locate and determine the status of disaster victims. This system will be comprised of several components, a device about the size of a wrist watch to be worn by individuals. This device will be capable of transmitting an identification number unique to that particular device, which will be used for identification to who that device is registered to. Also transmitted will be the Global Positioning System (GPS) coordinates calculated by a GPS receiver chip embedded in the system and the pulse of the individual wearing the device along with body and climate temperature. These will all be continuously transmitted upon activation either by the user or external by an emergency responder with a capable receiver. The second device will be a GPS receiver that will be enhanced in order to be capable of reading the data transmitted by the wrist watch device. This receiver will be able to show the position of the individuals wearing these devices in relation to the location of the receiving device also while displaying the transmitted pieces of information.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Bjorke, Jacob; Deve, Kudakwashe; Nde Talla, Urbain Manfred	Yao, Aiping	Electrical and Computer Engineering

Design and Synthesis of Novel, Acyclic Goniothalamin Analogues

Approximately 182,000 women in the United States were diagnosed with invasive breast cancer in 2008 and it is estimated that over 40,000 women will die from breast cancer this year. These statistics illustrate the tremendous importance of developing new anti-cancer drugs. In recent years, one method to identify potential chemotherapeutic agents has been the mass screening of natural products for cytotoxic activity. Approximately 60 % of all approved anti-cancer drugs have originated from natural sources. One compound found to exhibit potent anti-cancer activity against breast cancer cell lines is goniothalamin, which was isolated from the dried stem bark of the plants Goniothalamus borneensis, macrophyllus, andersonii, and sesquipedalis. Goniothalamin is of particular interest as a cancer drug because it has been found to be cell specific. Preliminary testing has shown that goniothalamin exhibits no significant cytotoxic effects on the healthy cells that are located around cancerous cells during treatment. In its natural form, goniothalamin is a delta-lactone. It has been shown that once administered into the body, some lactone drugs undergo a ring opening reaction catalyzed by enzymes called carboxyesterases. Esterases split a carboxylic ester functional group into an acid and an alcohol in a chemical reaction involving water. In some cases, this ring opening has been shown to increase the activity of the drug. It is hypothesized that goniothalamin might undergo a lactone ring opening when subjected to esterases. If this is the case, the active form of goniothalamin might be the acyclic hydroxyacid and not the natural delta-lactone. In an attempt to verify this hypothesis, two new classes of acyclic goniothalamin analogues are being prepared. It is anticipated that the compounds made in this research project will provide insight into what structure is actually responsible for goniothalamim's cytotoxicity, the lactone ring or the metabolized acyclic hydroxyacid.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Steinhoff, Anna	Mechelke, Mark	Chemistry

Sprawl Report: The Case of Big Lake, Minnesota

The City of Big Lake has experienced urban sprawl. This project identifies evidence of sprawl in Big Lake and derives recommendations to curb its effects. After researching various remediation strategies, I am presenting three recommendations. From my findings, I have decided to focus on one recommendation as the most effective alternative, which is to expand the current transit oriented development district and make it a centerpiece for future development in Big Lake.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Uphoff, John	Rigopoulou-Melcher, Aspasia	Community Studies

The Effect of Self-Monitoring and Mimicry on Helping Behavior

As an extension of the chameleon effect, several studies have found that participants who are mimicked like the other person more and are more helpful than participants who are not mimicked (Chartrand & Bargh, 1999). Other work has focused on who is more likely to be susceptible to the effect of mimicry. Namely, Estow, Jamieson and Yates (2006) found that high self-monitors were more likely to mimic than low self-monitors. In addition to being more susceptible to the chameleon effect, high self-monitors are more likely to help others (Flynn, Reaganis, Amanatullah & Ames, 2006). Given that mimicking and self-monitoring have independently been tested to predict helping behavior (Flynn, et al., 2006) and that these two variables have been shown to have an effect on one another(Estow, et al., 2006), it seems likely that a combination of the two will be likely to predict helping behavior. The purpose of this research was to examine the effect of mimicking and self-monitoring on helping behavior. Female participants interacted with a confederate, whom proceeded to either mimic or not mimic the participant. The confederate "accidentally" spilled a container with pens in it. The helping behavior was the number of pens the participant picked up. Participants then completed the Snyder Self-Monitoring Scale (Snyder & Gangestad, 1986). A 2 (Mimicking: Mimicked or Not mimicked by a confederate) X 2 (Self-monitoring: high and low) between subjects analyses of variance (ANOVAs) was conducted. However the predicted interaction between mimicking and self-monitoring was not found. The results are discussed in terms of methodological limitations of the current study including how self-monitoring was operationalized.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Johnson, Tasha	Buswell, Brenda	Psychology

High Speed Product Sweep

In the modern secondary packaging industry, the process of moving objects along a conveyor is typically completed through the use o f a set of roller chains moving along the confines of sets of chain guides. Thermoplastics, such as Ultra High Molecular Weight Polyethylene are commonly used for the chain guide material due to its wear-resistant and self-lubricating properties. As companies who use such packaging equipment look to increase production rates, increased speeds of the conveyer and roller chains are desired. The increase in conveyor speeds ultimately lead to the premature onset of wear and melting effects of the plastic chain guides. The purpose of this project was to develop a solution to preventing the melting of the chain guides as to allow for the production rates of the equipment to increase. Two solutions were tested for this scenario; the use of an air lubrication system and the change in geometry of the chain and chain guide path. Preliminary calculations show that the use of air lubrication allows for the generation of a convection coefficient of 78.145 W/m2K which leads to a decrease in chain guide temperature of 69.48 degrees fahrenheit over a one minute interval. This deters the guides from encountering premature wear and melting. As for the effects of geometry, using a semi-circular path as opposed to two 90 degree angles dissipates the heat more effectively, deterring heat generation within the guides. The calculations show that the air lubrication method is valid in deterring the chain guide from melting when increased chain speeds are used.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Kees, Ryan; Liang, Jing	Byun, Jeongmin	Mechanical and Manufacturing Engineering

Optimized Solar Power System

In order to provide a clean and renewable energy source, the optimized solar power system implements two-axis solar tracking to optimize the efficiency of large scale solar panels. This is done through the use of an embedded Linux system which controls the horizontal and vertical motor positions to track the path of the sun throughout the day. Power is stored in a battery bank via a solar regulator which monitors the battery voltage levels and charges a main battery until it is full, at which point a backup battery is charged. A user interface to the system is provided in the form of monitoring different system variables such as battery voltage levels and power currently being provided by the solar panel. The implications of this research include a more environmentally friendly energy source as well as an increasingly cost effective energy solution as the efficiency of these systems improves.

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

Student Presenter(s):	Sponsor(s):	Department(s)
Khan, Niveen; Holmseth, Joseph; Trandem, Matthew	Hossain, Md	Electrical and Computer Engineering

Sediment Pond Sedimentation Analysis

A study was conducted to examine sediment from Judicial Ditch Number 2 near Lake Osakis. Judicial Ditch Number 2 flows into Lake Osakis and is thought to be a cause of sediment issues in the lake. Sediment ponds were constructed adjacent to the ditch for the purpose of diverting water through the ponds prior to water from the ditch entering Lake Osakis. The sediment ponds were arranged to provide a primary settling pond for removal of denser materials carried in the ditch water as well as a larger secondary pond for removal of less dense materials. Sediment core samples were taken from both the primary and the secondary settling ponds to determine the effectiveness of diverting ditch water through the ponds. Samples were examined for sediment types and specifically for sand, silt and clay content to determine the effectiveness of the ponds and to estimate the quantity of material removed prior to ditch water entering the lake. The samples were also examined for nutrient content and organic content which, together with the sediment type, will aid in determining the disposition of the sediment when the sediment is removed from the ponds as part of normal maintenance.

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

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

Kinzer Creek Stream Quality Analysis

Kinzer Creek is a designated trout stream located in south central Stearns County, approximately two miles south of the city of Cold Spring, Minnesota. A highly sought after game fish, trout and the water bodies they reside within are rare throughout the Central Minnesota region. Recent surveys indicate that trout are no longer present within Kinzer Creek and that the composition of the bottom substrate has been altered significantly. Current land use practices, such as agricultural ditching and grassland pasture areas, have significantly affected the bottom substrate of Kinzer Creek. Through sampling and analysis of stream bank erosion, soil texture and bulk densities and water quality testing, the researchers strive to identify the impacts that current land use conditions have had on the overall quality of Kinzer Creek. It is the goal of this study to determine what changes can be made in an effort to restore Kinzer Creek into the functional trout stream that it once was.

Presentation Index: I-B 26 **Present Time:** 4:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Hayman, Michael; Gutknecht, Zachrie	Bender, Michner	Environmental and Technological Studies

Parent Perception of Preschool Problem Behavior: The Role of Parent Knowledge of Child Development

Although parents' knowledge about child development and child rearing is relevant to family therapy, very little is known about preschool parents' knowledge. To fill this gap in research, this study examined the correlation between parent knowledge of child development and the perception of their child's behavior. Parent of children enrolled in preschool were recruited from families enrolled in Head Start, public preschool and a private Christian preschool. Each parent completed a demographic questionnaire, Parent Knowledge Inventory and Child Behavior Checklist 1.5-5.The teachers of the children represented were asked to complete the Teacher Report Form. Children who were found to have clinical levels of problem behavior as indicated by parent and teachers reports were excluded from the study. The hypothesis was supported and a significant correlation was found. Findings support previous research and indicate that even in our information age there is a need for parent education in therapy. Gaps in parenting knowledge have implications for clinical interactions with parents, child diagnosis, family therapy and parent education. The limitations of the study, as well as recommendations for future research are discussed.

Presentation Index: I-B 27 **Present Time:** 4:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Schreifels, Theresa	Daneshpour, Manijeh	Educational Leadership and Community Psychology

A Hydrologic Analysis of Watab and Rossier Lakes

Hydrometeorologic instruments were installed and used to monitor and observe the hydrologic response to forcing (precipitation) of the Watab-Rossier lake system. The lake watershed and shoreline have been subject to intense human development within the last 20-30 years, and have been experiencing unexplained, relatively large and rapid variations of water levels that appear to be related to a non-natural lake level control. The data that has been collected shows a non typical behavior of lake level, in particular during receding limbs of passing flood waves: levels drops drastically with high rates just after a flood peak (which is the reverse to a natural lake response). This behavior has been associated to certain flood conditions, for which lake levels overpass a certain threshold. In order to study and understand this unusual behavior, additional hydraulic and hydrologic modeling is applied to the lakes watershed and the hydraulic control at the lake output (Watab River), and contrasted to measured parameters in the field. Data and modeling results will be presented to support a few possible explanations for the unusual behavior of the Watab-Rossier lake system.

Presentation Index: I-B 28 **Present Time:** 4:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Beste, Brent	Fedele, Juan	Earth and Atmospheric Sciences

Characterizing the Regulation of PGC-1, A Protein Linked to Parkinson's Disease

Parkinson's disease is an incurable neurodegenerative disorder that afflicts over 1% of the world's population over the age of 65. Hallmarks of Parkinson's disease include impairment of motor skills, loss of speech and muscle control that may lead to pneumonia, death by choking and falls that can cause a patient's death. Frequently, Parkinson's disease is characterized by the unregulated destruction of PGC-1, a protein that protects neural cells. Our lab has recently discovered at least two proteins in human cells that assist in the destruction of PGC-1. Here we show that the HECT-H9 protein is a good candidate for one of these proteins. This managing protein is being characterized for its utility as a possible drug target to prevent the progression of Parkinson's disease.

Presentation Index: I-B 29 **Present Time:** 4:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Alfano, Anthony	Olson, Brian	Biological Sciences

Investigation of Gal1 and Gal10 Levels in Saccharomyces cerivisiae Using Quantitative Polymerase Chain Reaction (qPCR)

We intended to develop a qPCR assay to determine expression levels of Gal1 and Gal10 under various conditions. In order to conduct this study, we first needed to order all the reagents necessary to perform this reaction. After acquiring all the necessary materials, we had to set up and optimize the qPCR reaction to be able to collect reliable data in the future. After researching methods of amplicon detection, we ordered the Quantitect 1-Step SYBR Green Kit from Qiagen and the YeaStar RNA Isolation Kit from Zymo Research. We ordered primers to detect expression of the Gal1, Gal10, and 18s rRNA genes of Saccharomyces cerivisiae. The 18s rRNA was amplified to use as a normalization gene for calculation purposes. After initially running the qPCR reaction, we had to optimize primer levels in order to yield better amplification results. Ultimately, the reaction was completed and optimized for use in future projects.

Presentation Index: I-B 30 **Present Time:** 4:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Hemann, Emily; Nomeland, Beth	Reagan, Michael	Biological Sciences

An Introduction to Orthogonal Frequency Division Multiplexing (OFDM)

The principles of Orthogonal Frequency Division Multiplication (OFDM) have been known for many years, yet it has been only recently that the technique has become used in modern communication systems. The purpose for a poster, "An Introduction to Orthogonal Frequency Division Multiplexing (OFDM)" is to give the audience a simple introduction into OFDM. The introduction has been divided into four distinct parts. The first component pertains to the background and motivation to develop and implement OFDM. The second component contains the fundamental principles pertaining to OFDM. The third component provides insight into the advantages and disadvantages of developing and implementing OFDM. The last component provides applications on which OFDM technology is being use.

Presentation Index: I-B 31 **Present Time:** 4:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Stahlback, Dustin; Liu, Liangnan	Yao, Aiping	Electrical and Computer Engineering

Biochemical Oxygen Demand Analysis of the Sauk and Mississippi Rivers

Biochemical oxygen demand is a procedure for determining the rate that microorganisms consume dissolved oxygen in water. Dissolved oxygen is important in establishing and maintaining a healthy ecosystem. Microorganisms consume dissolved oxygen as they decompose organic material, which is often created from increased nutrients. When dissolved oxygen levels fall beneath 2 PPM, fish kills, decreased biodiversity, and diminishing water quality becomes more prevalent. The main areas of study in this project include determining the nutrient status of water flowing from the Sauk River into the Mississippi River and searching for a correlation between nutrient status and BOD levels. The second purpose of this study is to determine the magnitude of a small river's influence on a larger river's water quality. Water samples in this study were analyzed for BOD, pH, conductivity, suspended and dissolved solids, ammonia, phosphorous, and nitrates. The results from this study will be used to determine water quality, and provide a better understanding of the influence that BOD from the Sauk River has on the Mississippi River location in St. Cloud.

Presentation Index: I-B 32 **Present Time:** 4:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Reginek, Jamison	Bender, Michner	Environmental and Technological Studies

Human ALDH3A1 Genetic Polymorphism Analysis

The human aldehyde dehydrogenases (ALDHs) ALDH1A1 and ALDH3A1, play an important role in detoxification of certain anticancer drugs such as cyclophosphamide (CPA) and ifosfamide (IF). Resistance to CPA and IF has been shown to be due to polymorphism or mutations occurring in the ALDHs. Three genetic variants of ALDH3A1 have been identified and their genetic identities have been recently established. Two of the 3 genetic variants, tentatively named as nALDH3A1 or ALDH3A*1 (found in normal tissues), and tALDH3A1 or ALDH3A1*2 (found in tumor tissues) differ from each other by 2 bases. The base differences are base transversions, one in exon 2 (C-G at base position #35) and the other in exon 4 (T-G at base position #400). These genetic variations can be responsible for the important differences in the way in which the enzymes participate in detoxification of cyclophosphamide and ifosfamide. This study has provided data on the frequency distribution of the genetic variant found in Exon 2. The ALDH3A1 gene was found to be either homozygous for C or heterozygous for C & G at the base position #35. The genetic polymorphism analysis indicates that the heterozygous allele was the dominant allele. These results add to the continuous study to obtain supporting information of the frequency of distribution of these genetic variants. This investigation as well as the ones to follow will have an impact on the therapy, detection, diagnosis, chemoprevention, fundamental molecular biology and/or genesis of cancer. By identifying and characterizing the ALDH polymorphisms one could individualize or custom build therapeutic protocols for treating CPA and IF drug resistance tumors.

Presentation Index: I-B 33 **Present Time:** 4:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Antunez, Giovanni	Sreerama, Lakshmaiah	Chemistry

N-Heterocyclic Carbene-Supported Catalysts in the Polymerization of Cyclic Esters

Biodegradable polymers such as polycaprolactone and polylactide are generating much interest in medicinal chemistry research for the slow release of drugs. An important step in this research is the development of catalysts that will efficiently facilitate polymerization reactions. This project involved the synthesis of a special variety of catalyst containing N-heterocyclic carbenes. An N-heterocyclic carbene (NHC) is an organic compound with a cyclic ring containing nitrogen. One of the carbons in each ring is a carbene, a carbon atom with only two bonds and a lone pair of electrons. NHCs have already shown promise in organic and organometallic chemistry. These carbene ligands have unique electronic properties that have enhanced the catalytic properties of some metals in olefin metathesis, C-C coupling, and polymerization. In several reactions of these types, NHC catalysts are replacing the former common catalysts-phosphines-because NHCs produce higher yields and are more selective in some cases. There are three stages of synthesis for each NHC catalyst. First, the ligand itself is synthesized. Second, in one reaction step, the ligand is transformed into a carbene and bonded to a metal atom. Third, the catalyst is tested for effective polymerization of caprolactone.

Presentation Index: I-B 34 **Present Time:** 4:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Roe, Stephanie	Schaller, Chris	Chemistry

Enantioselective Synthesis of trans-2,5-disubstituted pyrrolidines

Enantioselective reactions are an important process in synthetic chemistry. Nature tends to create compounds in a certain way which chemists try to emulate. To synthesize enantiomerically pure compounds in the laboratory is the goal. To have the ability to create natural products without having to extract them from obscure sources from around the world is the goal. Extracting these products from nature usually results in limited amounts of product and has the potential to destroy and upset environmental conditions in which these biological sources are found. Developing new methodologies to synthesis specific compounds not only brings advances to the field of chemistry but has the potential to improve current synthetic processes. There are several ways to synthesize natural compounds with different degrees of difficulties, time and cost. The goal of my research is to manipulate commercially available (R)-pyrrolidone-5-carboxylic acid and in a series steps create trans-2, 5-disubstituted pyrrolidine. Trans-2-n-butyl-5-n-pentylpyrrolidine is the original natural product we are attempting to synthetically create and through modification we will be able to revise the substrates to possibly generate different enantiomerically pure compounds which should provide different medicinal applications.

Presentation Index: I-B 35 **Present Time:** 4:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Engelking, Jarred	Mechelke, Mark	Chemistry

Systematics and Ecology of Thalassionema, an Important Oceanic Primary Producer and Ecological Indicator

Thalassionema Grunow is widely distributed throughout the world's oceans. Species within this genus are identified from at least the Miocene and are frequently utilized as biostratigraphic and paleoecological reference taxa. Many of the taxa with long histories in the ocean sediments are extant. Species and varieties of these extant forms have been associated with specific oceanic currents. The combination of datasets dealing with modern ecological occurrence and stratigraphic history has lead to the development of hypotheses concerning the position and movement of specific oceanic currents. The taxonomy and systematics of this group remain enigmatic despite the utility of these taxa in previous investigations. In this study a phylogenetic hypothesis is developed for species and varieties of Thalassionema via cladistic analysis. The best, most parsimonious, cladograms produced in this analysis were compared to known stratigraphic distributions of species and varieties and the biogeographic distribution of taxa among Pacific currents. Stratigraphic occurrence corresponds well with the cladogram topology and reoccurring biogeographic patterns can be observed within clades. Characters used for diagnosis of the species and varieties were also examined. Character distribution on the cladogram revealed that many diagnostic features are likely homologies and that species and varieties in the genus are generally consistent with the phylogenetic species concept. Using the character distributions and the biogeographic and stratigraphic information in conjunction with the phyolgenetic hypotheses developed in this study should simplify the use of species and varieties within the genus in paleoenvironmental and other ecological investigations.

Presentation Index: I-B 36 **Present Time:** 4:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Conroy, Kathryn	Julius, Matthew	Biological Sciences

Role of Human ALDH6A1 in Resistance to Anticancer Drug Cyclophosphamide

ALDH6A1 is a member of the aldehyde dehydrogenase superfamily of enzymes which catalyze the transformation of aldehydes to carboxylic acids so they can be metabolized by the liver and expelled from the body. Of specific interest is the enzyme's ability to metabolize cyclophosphamide, a major weapon in the fight against cancer. To investigate the molecular basis for this it is necessary to clone ALDH6A1 in order to test its effects on actual cancer cells. Using a vector from the NIH Mammalian Gene Collection a streak plate supplemented with ampicillin was prepared. One colony was selected and transferred to 100mL LB broth. After incubation, cells were centrifuged at 3000rpm andÂ 4 degrees celsius for 20 minutes. Using Promega Wizard Plus Midiprep DNA Purification System the plasmid DNA was extracted. Using BamHI and EcoRI a double-restriction digest was performed and the resulting ALDH6A1 band excised and extracted using Sigma GenElute Gel Extraction Kit. In similar fashion, a pET15b plasmid was grown to turbidity in LB broth media and following successful isolation and digestion the two gene fragments will be ligated and introduced into an expression vector. Once the cloning is completed, the protein will be isolated and purified for further enzyme studies to determine the role of ALDH6A1 in detoxification of cyclophosphamide.

Presentation Index: I-B 37 **Present Time:** 4:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Barney, Michael	Sreerama, Lakshmaiah	Chemistry

Obesity In High School Kids

I did a research project on Obesity in High School Kids. I chose to do this topic because I am studying to be a life science high school teacher. I collected my data from the St. Cloud State University's Biology 151 class in fall 2008. I gave each one of the students a ten question survey and asked them to answer the questions to the best to their ability. I asked the students questions about their knowledge, beliefs and experiences with obesity. I received good and interesting results from the survey. I have all of my results put into graphs, which are easy to understand. The results I received were what I predicted. I did get a good range of answers for each question. I have also interpreted the data and made inferences and recommendations.

Presentation Index: I-B 38 **Present Time:** 4:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Kristine, Turner	Simpson, Patricia	Biological Sciences

Session J-GN **Economics-3** **Glacier North**

The Relationship Between the Health of the U.S. Economy and the Health of the Population

The standard approach to measuring mortality rates has been centered toward lifestyle habits measuring risk. This approach is commonly used by insurance companies when setting their insurance rates. This paper proposes an alternative approach: A statistical based model derived from macroeconomic and socioeconomic factors. This approach better models the fast paced American lifestyle and identify the impacts on U.S. mortality rates. This model will offer a better understanding of current and long term trends of mortality rates in the U.S. Although, the U.S. has among the best medical universities and institutions in the world, diseases and medical inefficiencies are still common. The model will measure which variables have strong or weak correlations with the U.S. mortality rate. They are public health expenditures, alcohol consumption, GDP per capita, unemployment rate, educational attainment and the crime rate. The goal of this project is to find out if in fact mortality rates are pro-cyclical and if any of my other independent variables have a significant effect on the mortality rate.

Presentation Index: J-GN 1 **Present Time:** 5:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Cardinal, Boston	Grossman, Philip	Economics

What Determines DVD Sales in the Film Industry

Box office revenue has been a determining factor of film profits. Over the previous seven years, the box office revenues have been stagnant compared to revenues from the sale of DVDs. Nearly $30 billion per year is spent in the consumption of DVDs worldwide. This paper reports the results from a study of the determinants of DVD sales. Previous research into box office revenue determined that levels of sex, violence and profanity (SVP), along with the critic ratings for the individual films were positively correlated with a film's profitability. Studies of the video rental industry have found that box office revenue, Motion Picture Association of America ratings of R and PG-13 and star appeal were major determining factors in rental decisions. This paper uses a data base of 456 movies produced from 2006 to 2008 to analyze what factors determine DVD sales.

Presentation Index: J-GN 2 **Present Time:** 5:20 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Swartz, Brandon	Grossman, Philip	Economics

What Are the Effects of the Financial Market on the Technology Sector

I will present an information based model for determining the impact the financial market has on the technology sector of the economy. Due to the current financial crisis, many markets, unrelated to the financial sector, have become unstable and unprofitable. The affect the financial market has on the technology sector will help to determine if the technology sectors immunity to the financial crisis, as is hypothesized. During the current times of economic downturn technology companies such as IBM, Apple and Google have fared well. This test will help to determine the degree to which the financial market affects the technology sector.

Presentation Index: J-GN 3 **Present Time:** 5:40 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Barthelemy, Mitchell	Grossman, Philip	Economics

Foreclosures and Adjustable Rate Mortgages

The amount of bad debt carried by banks due to foreclosures has already led to many bank failures, and congress is currently working on a way to remedy the problem. Congress has said that they wish to help those homeowners who were victims of predatory lending practices. It is argued that banks were knowingly positioning riskier adjustable rate mortgages to people with lower income levels, lower credit scores and to people who lacked knowledge about mortgage instruments. I intend to test whether or not adjustable rate mortgages have a significant effect on foreclosure rates. I will do this by comparing state foreclosure rates. Some of the variables included will be unemployment rates, median income levels, median housing prices, state foreclosure laws, as well as the percentage of adjustable rate mortgages present. I believe that predatory lending practices were in deed prevalent over the past few years and that the amount of adjustable rate mortgages within a state will have a significant impact on foreclosure rates.

Presentation Index: J-GN 4 **Present Time:** 6:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)
McGlynn, Meagan	Grossman, Philip	Economics

Session J-GS | **Business Computer Information Systems** | **Glacier South**

Hard Drive Analysis

Computer Crime has been the biggest issue with the growth of the internet and the worldwide proliferation. Computer Crime is a crime committed over the network, whether wired or wireless. It can be defined as criminal activity involving an information technology infrastructure. It could include many activities over the internet like unauthorized access, hacking, copyright infringement, spreading email viruses and creating different attacks on the system (denial of service, spoofing, target acquisitions) that are computer crimes. Forensics software tools are changing more quickly which is used to analyze digital evidence which can display information in a format useful to investigators. This research determines the effectiveness of two different forensic tools: Forensics toolkit (FTK) and ProDiscover. Source of digital evidence is hard drive from an organization which will be analyzed using these tools at St. Cloud State University lab. To make sure nothing is changed during the process of investigation hash value of evidence is recorded. Exact duplicate of the original hard drive will be created to analyze using different tools. Typical forensic analysis in research includes deleted items, review of material on the media, search using keywords, extract email, images, discover and crack password. Finding from the completed research study will be presented to discuss effectiveness and the limitations of tools.

Presentation Index: J-GS 1 **Present Time:** 5:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Dangol, Sabina; Khan, Aneeqa	Schmidt, Mark	Business Computer Information Systems

Computer Forensics: Data Retrieval Methodologies

Computer forensics is the process of analyzing and recovering hidden data from evidence in criminal or civil cases. Many times data is intentionally deleted or manipulated in hopes to destroy potential evidence which could be used against a suspect. Other times, individuals want to sell their old computer parts, but want to ensure their confidential and personal data is safe. One way of accomplishing such a goal is by formatting, or preparing a digital storage medium for use. This research project examined different ways suspects could "erase" a hard drive by means of formatting. By identifying common formatting techniques and applying them to individual sources, I was able to determine the ways a criminal could hide critical evidence from an investigator. I started with the most basic, and common, process and progressed by increasing the robustness and iterations. My results determined the best way to ensure a digital source is erased and private information will not be distributed to unwanted individuals.

Presentation Index: J-GS 2 **Present Time:** 5:20 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Condon, Michael	Schmidt, Mark	Business Computer Information Systems

Data Aquisition and Analysis in Computer Forensics: Acquiring an Image and Analyzing the Digital Information of a Hard Drive

This project presents details of data acquisition and analysis on a hard drive using a computer forensic acquisition tool Access Data Forensic Toolkit (FTK). FTK imager was used to facilitate the data acquisition task and assist in the analysis of the captured items. The primary goal of this project is to illustrate how an image of a drive was acquired, how image files were extracted and the unallocated drive space was recovered as well as these obtained data were analyzed. Moreover, based on the experiment and investigation, we showed the importance of data acquisition and analysis in the field of computer forensics.

Presentation Index: J-GS 3 **Present Time:** 5:40 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Hou, Tian	Schmidt, Mark	Business Computer Information Systems

Live Forensics

Computer forensics is traditionally carried out as a post-mortem analysis where, an investigator is provided with a computer system that is suspected to be a part of computer crime like fraud or hacking and offline analysis of the computer is performed. However, during these types of investigation, any information that was available in the memory (RAM) during its runtime is lost and cannot be used for the analysis. Although this is quite typical for a classic forensic analysis of a fraud case, it usually is devastating in an incident response scenario, where the investigator is primarily interested in what has happened and how to recover from the incident rather than convicting the attacker. Therefore for an incident response scenario all information available is precious for the investigator and should be used to analyze the incident. This process is termed as Live Analysis/Forensics. The required volatile information for live analysis could include memory contents, open files, network connections, passwords etc, which will be lost as soon as the machine is turned off. Hence during live analysis, the investigator has to collect this information prior to switching the system off. Not having stored such volatile information might lead to a situation in which it is impossible to reconstruct or recover from an incident. This presentation looks into these factors and analyzes how such memory contents could be constructed through a memory image and windows system.

Presentation Index: J-GS 4 **Present Time:** 6:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Guragain, Rekha	Schmidt, Mark	Business Computer Information Systems

Session J-VN **Social Sciences-2** **Voyageurs North**

Writing Somali in Osmanya: Language Policy, Literacy and Identity

In most of the world, multilingualism is the norm. Even in Somalia, which is united by one language, there is significant language diversity. For nearly 100 years, Somalis have been using multiple alphabets to write Somali. Before that, Arabic was the default script. But squeezed between the Arab world, Africa, and the West, Somalis began to develop alternative indigenous scripts such as Osmanya. These scripts played key roles in the nationalist resistance to colonialism, but were replaced by a pro-western Latin-based script when the socialists took power in 1970. The fact that Osmanya had to be forcibly banned was covered over with a fabricated story of mutual consensus reached between 'experts' that the Latin script was better. It may seem surprising that this long history of indigenous creativity and resistance could be so thoroughly erased by the Siad Barre regime. Yet, similar erasures of multilingual histories have been documented even in the U.S. (Horner & Trimbur, 2002). From hindsight, monolingualism seems natural. The same is true of alphabets, as we think of them as eternally linked to the literate word. My approach to uncovering the lost history of Osmanya has been to gather together the surviving scholarly traces of this history and to contrast this record with the oral memories of Somali immigrants in St. Cloud MN. As a non-Somali, it is not my place to write a formal history nor even to formally collect oral statements. What I offer instead is a reflection on the geopolitical dynamics of borderlands such as Somalia whose languages bear the marks of multiple forced compromises between dueling superpowers. In the midst of such overarching global tensions, small details such as the creation and use of Osmanya to write Somali appear as brief glimpses into a deeper, more locally-grounded sense of self and purpose.

Presentation Index: J-VN 1 **Present Time:** 5:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Fonken, Gael	Salk, Janet	Special Education

American Secessionism as Political Ideology

Secessionist thought has existed in the United States since the beginning of the Union and continues to exist even today. In fact, secessionist movements have gained traction in recent years in some parts of the United States. Contrary to popular belief, the most solvent and successful secessionist movements do not lie in Confederate Revivalism. Rather, it is scattered around different parts of the country. The most organized movements in the country are in Vermont and Alaska. These movements, however, are very different in worldview. In Alaska, there is an official Alaska Independence Party. The party constitution is imbedded in libertarian thought, seeks limited government, and envisions a return of power from Washington, D.C. to Alaska and Alaska's communities. In Vermont, the movement is not a political party, in contrast to Alaska. Vermont's is a social movement with, trends clearly too green politik, but, like in Alaska, seeks a return of power to Vermont and further, to Vermont's communities. While these movements are very different, they agree that they wish to secede from the United States, they seek political and economic relocalization of power, and they are all suspicious of global capitalism and the centralization of power. Furthermore, polls are showing a general rise across the country of agreement toward the idea of 'the right to political secession'. With these facts, it can be proven that secessionism is a living and real political ideology in the United States. Using two models from Terence Ball and Richard Daggar, it will be demonstrated that these movements represent a complete and unique political ideology.

Presentation Index: J-VN 2 **Present Time:** 5:20 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Birkman, Ryan	Lindsey, Jason	Political Science

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

Reception

Presentation Index: K-C 1 **Present Time:** 6:30 PM

Student Presenter(s):	Sponsor(s):	Department(s)

Awards Ceremony

Presentation Index: K-C 2 **Present Time:** 7:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)

Session L-R **Beyond The Notes** **Ruth Gant Recital Hall Room 230, Performing Arts Center**

Looking Beyond the Notes: A Music Research and Performance Colloquium

Students from the SCSU Music Department will perform and discuss the creative process of performance. Students were selected to present based on faculty nomination. Tyler Hogan will perform "Charles DeLancey's Love of L'Histoire: Homage to Igor Stravinsky's Percussion Genius" on percussion; his advisor is Terry Vermillion. Alicia Eisenstadt will perform "Johann Nepomuk Hummel's Concerto for Trumpet: Homage to Anton Weidinger's Contributions to the Solo Trumpet;" her advisor is Albert Moore. Lansun Zhong will perform "Yinghai Li's A Moonlit Night on the Spring River: a Performance and Program Notes" on piano; his advisors are Carmen Wilhite and Stephen Fuller. Eleanore Mcleod will present "Baroque Music for the Harpsichord Played on the piano: A Lecture Recital;" her advisor is Marcelyn Smale.

Presentation Index: L-R 1 **Present Time:** 8:00 PM

Student Presenter(s):	Sponsor(s):	Department(s)
Hogan, Tyler; Eisenstadt, Alicia; Zhong, Lansun; McLeod, Eleanore	Moore, Albert; Vermillion, Terry; Fuller, Stephen; Smale, Marcelyn; Wilhite, Carmen	Music

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Smale, Marcelyn	Hogan, Tyler; Eisenstadt, Alicia; Zhong, Lansun; McLeod, Eleanore
Vermillion, Terry	Hogan, Tyler; Eisenstadt, Alicia; Zhong, Lansun; McLeod, Eleanore
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Tomaszewski, Peter	Mukherjee, Debashree

ACKNOWLEDGEMENTS

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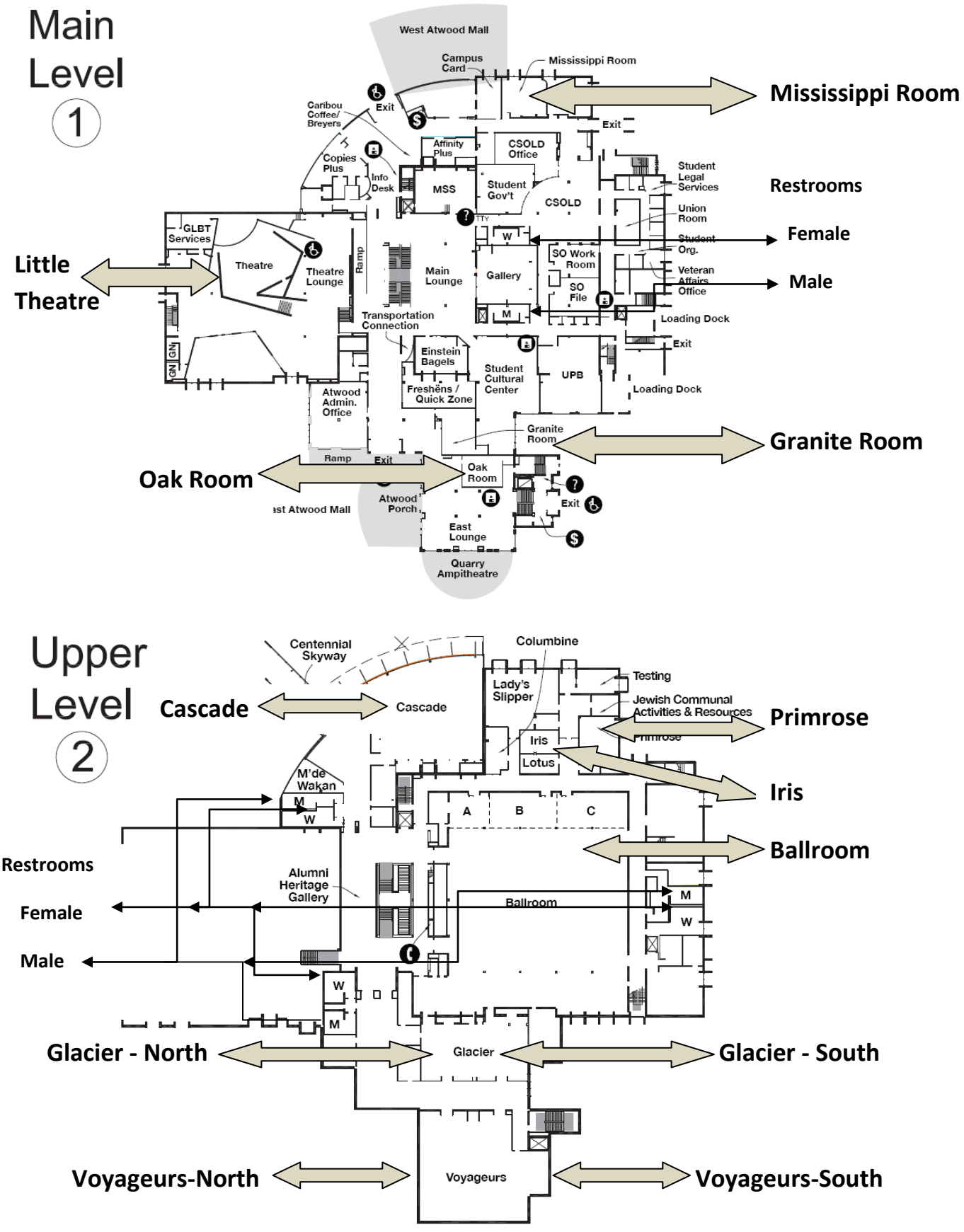
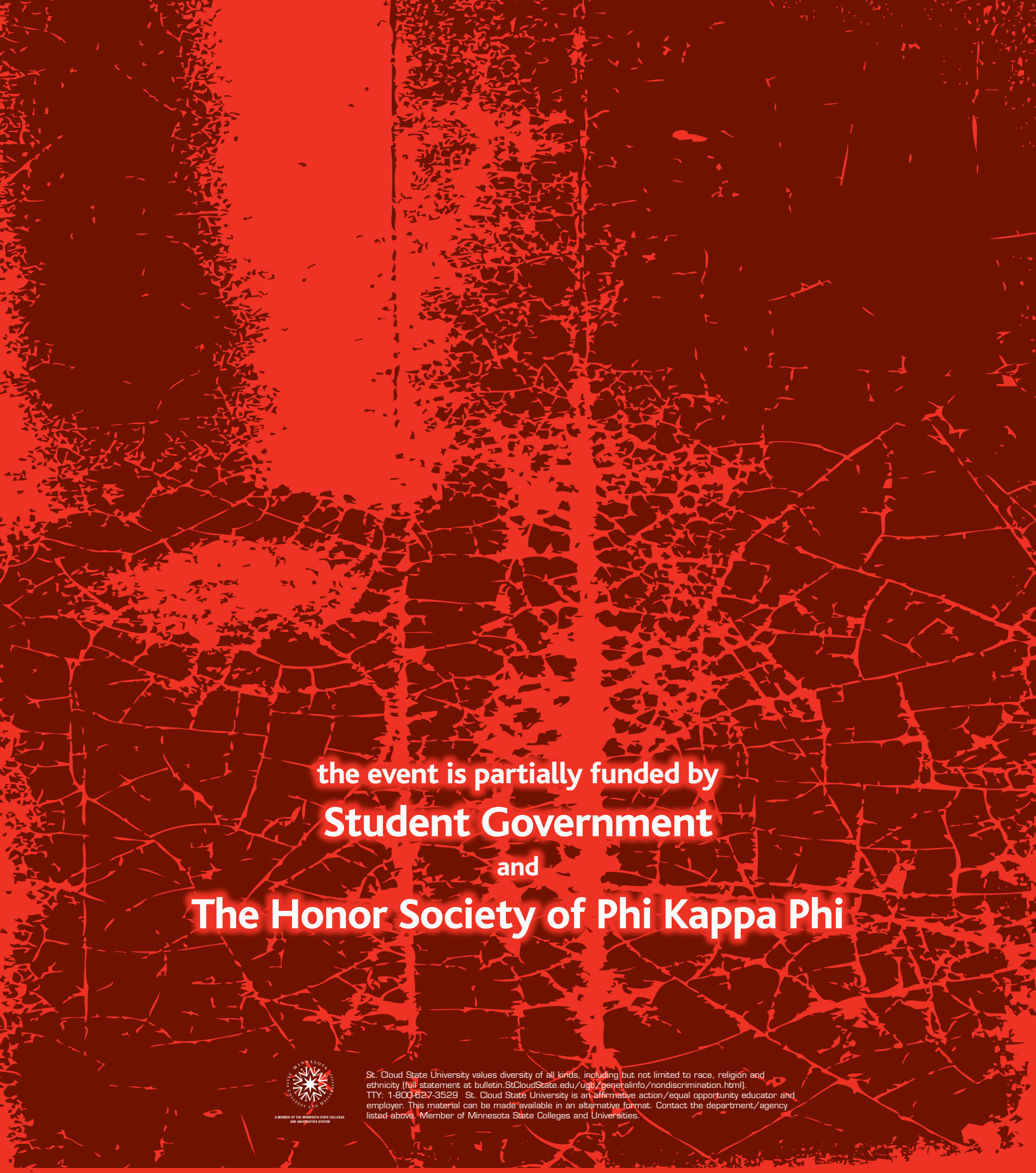
Floor Plan for Atwood Memorial Center



"Most of us are familiar with recycle and reusing, but how often do we think of the third R – REDUCE? 'Reduce' is probably the most important of the three Rs because, if we reduced, it would limit the need to recycle and reuse." Catherine Pulsifer from The "Reduce" of Recycle and Reuse

As a "green" initiative, we are providing project abstracts on the CD below as well as on the Student Research Colloquium website: https://www.stcloudstate.edu/src/proceedings/default.asp.

Thank you for joining us at the 12th Annual Student Research Colloquium!



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