4-19-2005

Annual St. Cloud State University Student Research Colloquium 2005

St. Cloud State University

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Acknowledgements

Planning Committee members for the Annual St. Cloud State University Student Research Colloquium 2005 include:

- Jennifer Kolden, College of Science and Engineering Applied Research and Development Center, Coordinator
- Leslie Valdes, Department of Psychology
- Susan Jensen-Cekalla, Office of Sponsored Programs
- Balsy Kasi, Department of Environment and Technology Studies
- Judith Rodgers, Learning Resources and Technology Services
- Richard Rothaus, Office of Sponsored Programs
- Lisa Splittgerber, Department of Foreign Languages and Literature
- Donella Westphal, Office of Sponsored Programs
- Carolyn Williams, College of Social Sciences
- Dale Williams, College of Science and Engineering

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- Staff of Center for Information Services
- General Maintenance Workers for the Atwood Memorial Center
- Session Moderators
- Registration Table Volunteers
- Best Poster Judging Team
- Chemistry Students (moving of poster boards for poster session)
- Psychology Students (registration table and “runners”)

Donors

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- Office of Academic Affairs
- Phi Kappa Phi (Honor Society)
- National Institutes of Health
- Student Government
- Aramark Food Services
- Bernick's Pepsi

If you wish to support the Student Research Colloquium, donations may be submitted to the Student Research Colloquium account (#R281030) at the St. Cloud State University Foundation, Alumni and Foundation Center, 720 Fourth Avenue South, St. Cloud, MN 56301-4498.

Faculty Research Sponsors

Thank you to the following faculty who provided guidance to students as they prepared their research projects for presentation at the Annual St. Cloud State University Student Research Colloquium 2005:

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Mathematics
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Philosophy
- Des Jardins, Joseph

Park Industries
- Reker, Kevin

Program Highlights

Registration

All student presenters and faculty sponsors are asked to register for the Colloquium. A registration table is located outside of the Ballroom on the 2nd floor of Atwood Memorial Center (AMC). Anyone who would like a copy of the Colloquium Short Program or Colloquium Proceedings should go to the registration table.

Morning Paper and Panel Presentations (Sessions: A to H)

The Colloquium opens with an Interdisciplinary Science Symposium (Session A) from 10 to 12:15 p.m. Thomas R. Hoye, Professor of Chemistry from the University of Minnesota, will give a presentation entitled "**Interdisciplinary vs. Multidisciplinary Research: There is a Difference (and a Case Study: the Sea Lamprey Migratory Pheromone Problem)**." Following his presentation, there will be five student presentations on interdisciplinary science research conducted at SCSU. These presentations will be held in AMC North Voyagers. In addition, there will be seven sessions from 11 to 12:15 p.m. in such areas as geography and the humanities.

Invited Alumna Address

The Keynote Speaker is alumna Lori Black, Ph.D. Her Keynote Address is titled "**Beyond the Human Genome Sequence**." Black is a 1987 graduate from the College of Science and Engineering (COSE) Biological Sciences Department. She went on to receive her Ph.D. in 1995 from Johns Hopkins University working on bacterial energetics. She then spent two years at the National Cancer Institute within the National Institutes of Health (NIH) completing her post-doctoral work on phylogenetics of feline immunodeficiency virus (FIV) in lions. Her presentation will be in the AMC Little Theatre from 12:30 to 1:30 p.m. with a reception to follow in the AMC Theatre Lounge.

Afternoon Paper and Panel Presentations (Sessions: J to Q)

There will be eight concurrent sessions from 2 to 3:30 p.m. Panel presentations include a discussion of baby boomers' retirement, a re-accreditation survey, and a presentation of student opinions from the SCSU Survey. Other sessions are in areas such as science and engineering, Islam and behavioral studies.

Afternoon Poster Presentations (Session R)

There will be 60 poster presentations representing all disciplines from 3 to 4:30 p.m. in the AMC Ballroom.

Receptions and Award Ceremony

At 4:30 p.m. in the AMC North Voyageurs, COSE will recognize the recipients of the Denise M. McGuire Student Research Award. Also, Aaron Bolin, Ph.D., will give a presentation entitled "**Soft Science and Cold Hard Reality: Finding Success in the Social Sciences**" in the AMC Cascades with a reception to follow. Dr. Bolin currently serves as a Psychologist with the Human Performance Center detachment at the Navy Surface Warfare Officers School in Newport, Rhode Island.

Evening Paper and Panel Presentations (Sessions: T to Y)

There will be six concurrent sessions from 5:30 to 7 p.m. Some topics include: gender studies, international business, teaching English as a second language, and science and engineering.

Evening Poster Presentations (Session Z)

There will be 44 poster presentations representing all disciplines from 6:30 to 8 p.m. in the AMC Ballroom.

Schedule of Events

Event	Time	Room
Morning Paper and Panel Presentations (Sessions A-H)		
Registration for Paper and Panel Presenters	9:30 - 10:45	AMC 2nd Floor
Registration for Faculty Sponsors	9:30 - 10:45	AMC 2nd Floor
Session A: Interdisciplinary Science Symposium	10:00 - 12:15	AMC North Voyageurs
Session B: Science and Engineering I	11:00 - 12:15	AMC South Voyageurs
Session C: Behavioral Studies I	11:00 - 12:15	AMC North Glacier
Session D: Humanities	11:00 - 12:15	AMC South Glacier
Session E: Spanish	11:00 - 11:45	AMC Lady Slipper
Session F: Geography I	11:00 - 12:15	AMC Mississippi
Session G: Applied Linguistics and English	11:00 - 12:15	AMC Oak
Session H: Statistics and Mathematics	11:00 - 12:15	AMC Granite
Keynote Address and Reception		
Session I: Lori Black, Ph.D., *Beyond the Human Genome Sequence*	12:30 - 1:30	AMC Little Theatre
Reception	1:30 - 2:00	AMC Theatre Lounge
Afternoon Paper, Panel, and Poster Presentations (Sessions J-R)		
Registration for Paper and Panel Presenters	12:00 - 1:45	AMC 2nd Floor
Registration for Faculty Sponsors	12:00 - 1:45	AMC 2nd Floor
Session J: Science and Engineering II	2:00 - 3:15	AMC North Voyageurs
Session K: Behavioral Studies II	2:00 - 3:30	AMC South Voyageurs
Session L: What Baby Boomers Want in Retirement	2:00 - 3:30	AMC North Glacier
Session M: Development/Administration of College of Social Sciences Re-Accreditation Survey	2:00 - 3:30	AMC South Glacier
Session N: Science and Engineering III	2:00 - 3:30	AMC Granite
Session O: Islam: A Global Perspective	2:00 - 3:15	AMC Lady Slipper
Session P: Geography II	2:00 - 3:15	AMC Mississippi
Session Q: SCSU Survey	2:00 - 3:30	AMC Oak
Session R: All Disciplines I (Poster Session)	3:00 - 4:30	AMC Ballroom
Receptions and Award Ceremonies		
College of Science & Engineering Denise M. McGuire Student Research Award Ceremony	4:30 - 5:30	AMC North Voyageurs
Session S: Invited Researcher Address and Reception	4:30 - 5:30	AMC Cascade
Evening Paper, Panel, and Poster Presentations (Sessions T-Z)		
Registration for Paper and Panel Presenters	4:00 - 5:15	AMC 2nd Floor
Registration for Faculty Sponsors	4:00 - 5:15	AMC 2nd Floor
Session T: Science and Engineering IV	5:30 - 6:45	AMC North Voyageurs
Session U: Gender Studies	5:30 - 6:30	AMC South Voyageurs
Session V: International Business	5:30 - 6:30	AMC North Glacier
Session W: Science and Engineering V	5:30 - 6:30	AMC South Glacier
Session X: Teaching English as a Second Language	5:30 - 6:30	AMC Granite
Session Y: The Renaissance	5:30 - 7:00	AMC Lady Slipper
Session Z: All Disciplines II (Poster Session)	6:30 - 8:00	AMC Ballroom

Program

Session A: Interdisciplinary Science Symposium **Room:** North Voyageurs

Moderator: *Timothy Schuh, Professor of Biological Sciences*

Time	Presentation Index	Presenter(s)	Title
10:00		Hoye, Dr.Thomas	Interdisciplinary vs. Multidisciplinary Research: There is a Difference (and a Case Study: the Sea Lamprey Migratory Pheromone Problem)
11:00	A1	Cleland, Megan	Anti-cancer Activities and DNA Interaction Studies of Ruthenium Complexes
11:15	A2	Kron, Steve	Differential Expression of Proteins in *Ottelione A* Resistant Human Breast Carcinoma Cells
11:30	A3	Vincent, Jordan	Hydrothermal Synthesis and Characterization of Vanadium Flavonoid Complexes
11:45	A4	Gross, Aaron	Synthesis, Purification, and Characterization of 2-butoxyethanal by Swern Oxidation
12:00	A5	Corrigan, Ross Petersen, David	Anti-cancer and Teratogenic Activities of Two Vanadium Complexes $VO(TMH)_2$ and $VO(HD)_2$

Session B: Science and Engineering I **Room:** South Voyageurs

Moderator: *Randy Evans, Director of Instructional Technologies and Infrastructure Services*

Time	Presentation Index	Presenter(s)	Title
11:00	B1	Renslow, Mark	Pediatric Cardiology Expert System for Primary Care Physicians
11:15	B2	Gill, Dean Justison, Matthew Johnson, Zachary	Synchronous Belt Wear
11:30	B3	Du Lac, Shawn Bjornsson, Robert	Factors in Aviation Safety and Methods to Minimize their Effect
11:45	B4	Buesseler, Carla	Brain Based Media Centers
12:00	B5	Dhungel, Prateek Bista, Min Shanov, Adrian	Design Improvement in Chest Freezer Lid

Session C: Behavioral Studies I **Room:** North Glacier

Moderator: *Sarah Speir, Director of International Student and Scholar Services*

Time	Presentation Index	Presenter(s)	Title
11:00	C1	Hillestad, Richard	Study of Racial Profiling in Saint Cloud Police Stops
11:15	C2	Fries, Doug Rogers, Dennis Ahsan, Chowdhury Bucholz, Katrina	A Report of Contemporary Research on Drug Addiction and Criminal Behavior
11:30	C3	Frerich, Gretchen	Student Satisfaction with Cultural Diversity on Campus: An Empirical Investigation
11:45	C4	Jangam, Bipin	The Determinants of Employee Theft, an Investigation of Personality and Situational Variables on Prediction of Employee Theft
12:00	C5	Bourke, Molly	Third World Development and Health Status

Session D: Humanities **Room:** South Glacier

Moderator: *Patricia Kapphahn, University Archivist*

Time	Presentation Index	Presenter(s)	Title
11:00	D1	Sery, Joseph	Freedom of Speech in a Liberal Society: An Interpretation of Mill and its Implications on Hate Speech
11:15	D2	Brambrink, Katie	The Battle of Stamford Bridge: Brilliant Victory or Ultimate Defeat of Harold Godwinson?
11:30	D3	Schrubbe, Jr., Gordon	Sand Creek: Extermination of a Peaceful People
11:45	D4	Woolery, Ronald	Grand Portage: The Historical Significance
12:00	D5	Brehmer, Kathleen	Pivotal Women: Activism in the Civil War and After, How their Activism Changed America

Session E: Spanish **Room:** Lady Slipper

Moderator: *Lisa Splittgerber, Associate Professor of Foreign Languages and Literature*

Time	Presentation Index	Presenter(s)	Title
11:00	E1	Tomczik, Kelly	Federico Garcia Lorca & la Guerra Civil de Espana
11:15	E2	App, Joseph	The Fighting Forces of Civilization, Barbarity, and Tradition as Seen Through Two Popular Latin American Novels
11:30	E3	Egan, Lindsey	Chilean Social Customs

Session F: Geography I **Room:** Mississippi

Moderator: *Harold Lofgreen, Director of the Social Science Research Institute*

Time	Presentation Index	Presenter(s)	Title
11:00	F1	Reichardt, Robert	The Value of Park Space and Recreation areas to Communities
11:15	F2	Milstroh, Kimberly	Minnesota College Towns
11:30	F3	Wrolson, David	An Examination of how Demographic Factors Affect School Referenda in Outstate Minnesota
11:45	F4	Wilson, Charles	Sensor Based UGV
12:00	F5	Vogt, Matthew	A Geography of College Football Recruiting

Session G: Applied Linguistics and English **Room:** Oak

Moderator: *Sue Bayerl, Registrar*

Time	Presentation Index	Presenter(s)	Title
11:00	G1	Shub, Daniel	The Bubble: Why Science Fiction Matters
11:15	G2	Edmunds, Erik	The Historical Grounding of Stephan Crane's *Red Badge of Courage*
11:30	G3	Deng, Danmin	The Effects of Error Feedback in Writing
11:45	G4	Kamada, Yukiyo	Communication Patterns between Japanese ESL Students and Native ESL
12:00	G5	Lindsey, Melissa	Phonemic Transfer and Intelligibility Among Somali Speakers of English

Session H: Statistics and Mathematics **Room:** Granite

Moderator: *Juan Cabanela, Assistant Professor of Physics, Astronomy and Engineering Science*

Time	Presentation Index	Presenter(s)	Title
11:00	H1	Gjestvang, Christopher	An Improved Randomized Response Model: Estimation of Mean
11:15	H2	Chandra, Cecilia Suzuki, Kumiko	Stochastic Apportionment
11:30	H3	Webb, Aaron	(0,1)-Matrix-Vector Products via Compression by Induction of Hierarchical Grammars
11:45	H4	Sun, Kyung	Honeycombolgy and Fibonacci Identities
12:00	H5	Maki, James	Fibonacci Identities with Graphical Proofs

Session I: Keynote Address and Reception **Room:** Little Theatre

Moderator: *David DeGroote, Interim Dean of the College of Science and Engineering*

12:30 – 1:30	**Dr. Lori Black**	***Beyond the Human Genome Sequence***

Dr. Black is a 1987 graduate from the College of Science and Engineering Biological Sciences Department. She went on to receive her Ph.D. in 1995 from Johns Hopkins University working on bacterial energetics. She then spent two years at the National Cancer Institute within the National Institutes of Health (NIH) completing her post-doctoral work on phylogenetics of feline immunodeficiency virus (FIV) in lions.

Black is currently a Staff Scientist for the National Center for Biotechnology Information (NCBI) within the National Library of Medicine (NLM) at the NIH where she works as a GenBank Indexer. GenBank is a nucleotide sequence database comprised of all publicly available DNA sequences. NCBI (GenBank), in collaboration with the DNA Databank of Japan (DDBJ) and the European Molecular Biology Laboratory (EMBL), form the International Nucleotide Sequence Database Collaboration. The collaboration, which exchanges data daily, was formed to benefit the research community by providing access to the latest sequence data through a single database.

1:30 -2:00	**Reception**

Session J: Science and Engineering II **Room:** North Voyageurs

Moderator: *Karen Wenz, Information Technology Training and Software Support*

Time	Presentation Index	Presenter(s)	Title
2:00	J1	Kliber, Anthony Riedner, Broc	"Angle Pro" Siding Cutter Design
2:15	J2	Weber, Benjamin Hoehn, Brady Kern, Gabriel	Injection Molding Lead Time Reduction Through Design of Experiments
2:30	J3	Erickson, Jessie	An Investigation of the Teaching of Lewis Dot Structures in the First Year Chemistry Course
2:45	J4	Mondloch, Joseph	Investigation of Triplet State Sulfur Quenchers on the Quantum Yield of Phenyl Isothiocyanate
3:00	J5	Roskop, Luke	Computational Study of Select Oxo-Vanadium Compounds

Session K: Behavioral Studies II **Room:** South Voyageurs

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

Time	Presentation Index	Presenter(s)	Title
2:00	K1	Sery, Joseph	A Critical Approach to Gender in Organizations
2:15	K2	Spanier, Claire	Communication in Close Male-Male Friendships in a University Setting
2:30	K3	Caine, Heather	Self- Reported Drinking Behaviors of Members of a Sorority or Fraternity Compared to Non-Members at St. Cloud State University
2:45	K4	Schwitzer, Heidi Peterson, Debbie	A Study into the Relationship between SCSU and the Local Community
3:15	K6	Nesshengel, Marleny	Latino(a) in Media

Session L: What Baby Boomers Want in Retirement **Room:** North Glacier

Moderator: *Adelaide Turkowski, Director of Career Services Center*

Time	Presentation Index	Presenter(s)	Title
2:00	L1	Hansen, Melissa Lourey, Jessica VanLanduyt, Lisa Greathouse, Maren	What Baby Boomers Want in Retirement

Session M: Development/Administration of College of Social Sciences Re-Accreditation Survey **Room:** South Glacier

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

Time	Presentation Index	Presenter(s)	Title
2:00	M1	Stiles, Paul Kuettner, Dave Kinsella, Tracy Shrestha, Sangeeta Kuehler, Joshua Phang, Chin-Sien	Development/Administration of College of Social Sciences Re-Accreditation Survey

Session N: Science and Engineering III **Room:** Granite

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

Time	Presentation Index	Presenter(s)	Title
2:00	N1	McCarthy, Clara	Swainson's and Ferruginous Hawk Nesting Ecology in North Dakota
2:15	N2	Becker, Marc	Effects of Blue Cohosh (*Caulophyllum thalictroides*) and Red Clover (*Trifolium pratense L.*) on Rat Smooth Muscle Contractility
2:30	N3	Walseth, Brian	Allelochemical Interactions: Effects of Agricultural Crops on Wetlands
2:45	N4	Shogren, Phillip Spearman, Brian Ries, Michael	Automated Feed Mechanism
3:00	N5	Bartell, Steve	Development of an ELISA-based System for Detecting Vitellogenin in Fathead Minnows
3:15	N6	Bistodeau, Travis	Reproductive Consequences of Environmentally Relevant Exposures of Fathead Minnow Larvae to Alkylphenol Polyethoxylates

Session O: Islam: A Global Perspective **Room:** Lady Slipper

Moderator: *Lisa Splittgerber, Associate Professor of Foreign Languages and Literature*

Time	Presentation Index	Presenter(s)	Title
2:00	O1	Dwyer, Cecelia	More Than Just Fabric: Feminism and Islam
2:15	O2	Laingen, Kristina	What Islam Has Brought to the Modern World
2:30	O3	Peterson, Jaclyn	Arabic Influences in the Modern World
2:45	O4	Egan, Lindsey	Ottoman Empire
3:00	O5	Juma, Peter	Politics in Third World Countries: Darfur Conflict in Sudan

Session P: Geography II **Room:** Mississippi

Moderator: *Kathryn Kelly, Special Assistant to the Provost/Vice President for Academic Affairs*

Time	Presentation Index	Presenter(s)	Title
2:00	P1	Schutz, Nathan	United States Golf Courses
2:15	P2	LoBue, Jason	Population Growth in Clark County, Nevada: Las Vegas
2:30	P3	Janski, Sara	The Effect of Woodside Communities Development on Farmland Prices Near Clearwater, Minnesota
2:45	P4	Mattinen, Eric	An Examination of Natural Areas of Moscow, Paris, and London
3:00	P5	Larson, Chris	A Historical Geographic Analysis of Resorts in Itasca County Minnesota

Session Q: SCSU Survey **Room:** Oak

Moderator: *Adam Klepetar, Assistant Director of Admissions*

Time	Presentation Index	Presenter(s)	Title
2:00	Q1	Fox, Mike Gauthier, Stacy	Direction of Saint Cloud State
		Lunser, Jason Kahler, Nicole	Homecoming
		Lohrman, Sara Severson, Nicole	MGM Courses
		Phan, Ngoc Oldakowalski, Sara Mattison, Josh Springer,Stacey	Political Tolerance

Session R: All Disciplines I **Room:** Ballroom

Moderator: *Jennifer Kolden, Information Officer, College of Science and Engineering Applied Research and Development Center*

Time	Presentation Index	Presenter(s)	Title
3:00	R1	Willert, Sara Borgert, Melanie Santiago, Helen	Nutritional Assessment of SCSU Students
3:00	R2	Rono, Saasha Peterson, Garret	D2 Receptor Gene Research Concerning Addiction
3:00	R3	Plante, Adam Krekelberg, Elizabeth Dold, Ashley Flint, David	Setting the Truth Straight about Stem Cell Research
3:00	R4	Larsen, Karl	The Changing Face of a Village: Sällemåla, Sweden
3:00	R5	Akhunji, Bakhtiar	Development of the Media in Bangladesh: An Overview
3:00	R6	Nestor, Kyle Gesmundo, Matthew Stanley, Todd Choi, Sung Yeol	Estimated Cometary Rotation Periods from Optical Images
3:00	R7	Dukowitz, Jeff Nunn, Rob Hennessy, James	Sensor Based UGV
3:00	R8	Bruemmer, Mark R.	Snowplow Technology
3:00	R9	McMahon, Erin Kraatz, Brian	Employee Recruitment Plan
3:00	R10	Bello, Leye Ahmed, Faisal Ekinde, Kingsley	The Wireless Multi-purpose Traffic Count System
3:00	R11	Wagle, Prajesh Chishti, Muhammad Srivastav, Rishi	A Multi-Featured Audio System
3:00	R12	Chandra, Cecilia	Study of Racial Profiling in Saint Cloud Police Stops
3:00	R13	Freeberg, Martyne	Another Mother to Love a Baby: Surrogacy and Deviance
3:00	R14	Stachowski, Alicia	The Interactive Effect of Job Characteristics and Self Efficacy on Perceived Stress
3:00	R15	Jarvi, Peter	Integrating Theory and Practice in Manufacturing Classes
3:00	R16	Ghose, Shourjo	Genomic Analysis of Human Breast Adenocarcinoma MCF-7 Cell Line Resistant to *Ottelione*

Session R: All Disciplines I, cont. **Room:** Ballroom

Moderator: *Jennifer Kolden, Information Officer, College of Science and Engineering Applied Research and Development Center*

Time	Presentation Index	Presenter(s)	Title
3:00	R17	Biersma, Jill Dunderi, Stacie Osmondson, Jackie Ogwang, Zacharia Massmann, Melissa Janckila, Chanda Campbell, James Mix, Richard	School Factors and Childhood Obesity
3:00	R18	Jesberg, Daniel Danielson, Glen Selinger, Gabe	Regenerative Motor Control System
3:00	R19	Bauer, Katie Theis, Steve	Teacher-Child Interactions
3:00	R20	Holt, Amy	Jury Decision Making in Sexual Assault Cases: A Review
3:00	R21	Taylor, Kelley	A Landfill ... Not in My Backyard
3:00	R22	Aune, Susan	Elderly Community Loneliness Assessment
3:00	R23	Perry, Kimberly	The Interactive Effects of Organizational Justice, Culture, and Support on Organizational Commitment
3:00	R24	Bartolic, Cara	Who Will Win?
3:00	R25	Timperley, Jess Engelhart, Kristie	Dietary Composition of Native and Invasive Hawaiian Mullet Species
3:00	R26	Choi, Sung Yeol	HCN and CO Emission in Two Bright Comets
3:00	R27	Fults, Jon	Robots versus Humans: Who Should Explore Space?
3:00	R28	Couch, Nikki Etzler, Mara Glazer, Maggie Aeshliman, Kari	Research to Practice: Comparing Chemical Dependency Treatment
3:00	R29	Petersen, David Corrigan, Ross	Anti-cancer and Teratogenic Activities of Two Vanadium Complexes $VO(TMH)_2$ and $VO(HD)_2$
3:00	R30	Redding, Melissa Hanson, Jenny Thompson, Sara Steffen, Sara Sanderson, David Bruns, James	Effectiveness of 28-day Treatment for Methamphetamine Addiction
3:00	R31	Casper, Kyle	Roadless Area Conservation

Session R: All Disciplines I, cont. **Room:** Ballroom

Moderator: *Jennifer Kolden, Information Officer, College of Science and Engineering Applied Research and Development Center*

Time	Presentation Index	Presenter(s)	Title
3:00	R32	Nyaga, Carol	Alpha-cyano-4-hydroxycinnamic Acid-tributylamine Room Temperature Ionic Liquid Matrix: Quantification Trials of Angiotensin II
3:00	R33	Perry, Kimberly Stachowski, Alicia	Coping Styles of Perfectionists
3:00	R34	Chieh, Wei-Jiun Grant, Rainer	Mutagenicity and Carcinogenicity of 2-Propoxyethanal (2-PAL) and 2-Butoxyethanal (2-BAL)
3:00	R35	Johnson, Jessica	The Synthesis of Chaetomellic Acid A and Analogues
3:00	R36	Grand, Anthony	Histological Investigations into the Effects of Alkylphenols on Male Fathead Minnows
3:00	R37	Grove, Kent Cediel, Roberto	Dose-dependent Effects of 4-Nonylphenol on Mature Male Fathead Minnows
3:00	R38	Sogge, Johan	Characterization of Aldehyde Dehydrogenase in Fathead Minnows
3:00	R39	Kotschevar, Katie	Paleoecology of Mango Creek, Belize
3:00	R40	Paquette, Adam S.	Managerial Perceptions of Creativity and Organizational Commitment in Relation to Financial Success
3:00	R41	Ries, Michael	Internal Combustion Engine Intake Manifold Design
3:00	R42	McLaughlin, Carrie	Personality and Political Party Affiliation
3:00	R43	Marine, Sasha	Location of Mad1 and Mad2 Protein in Breast Cancer Cells
3:00	R44	Anderson, Jennifer	Effective Leadership Styles for Males and Females in Career Promotions
3:00	R45	Brezinka, Heather Kemp, Sarah Hulett, Jennifer Erdahl, Melissa	Nutritional Access in an Independent Senior Living Community
3:00	R46	Wessel, Emily	Role of ALDH1A1, ALDH2, and ALD H3A1 in the Metabolism of Benzyloxyacetaldehyde
3:00	R47	Bushkofsky, Justin	Diabetes
3:00	R48	Schultz, Bernie H.	The Effect of Caregiver Training on the Ability of a Person with Aphasia to Learn Scripts
3:00	R49	Hartmann, Michelle Jadwinski, Heather	Similarity of Behavior of Persons with Methamphetamine Addiction to Behaviors of Schizotypal Personality
3:00	R50	McArdell, Kara	Effects of Recovery Environment on Animal Patients After Surgery
3:00	R51	Storlien, Joseph	Clearwater Shoreland Management Ordinance

Session R: All Disciplines I, cont. **Room:** Ballroom

Moderator: *Jennifer Kolden, Information Officer, College of Science and Engineering Applied Research and Development Center*

Time	Presentation Index	Presenter(s)	Title
3:00	R52	Becker, Marc	Traversing Ontogenetic Constraints: Climbing Performance of Hawaiian Freshwater Fishes
3:00	R53	Gesmundo, Matthew	Molecular Spectroscopy of Comet Machholz
3:00	R54	Paumen, Rebecca Hanson, Cynda Seiler, Kathy	Comparing Male and Female Treatment Protocols for Methamphetamine Addiction
3:00	R55	Storlien, Joseph Kotschevar, Katie	A Study of Soil Amino-sugar Nitrogen in Homeowner Lawns
3:00	R56	Gahlon, Hailey	The Design and Synthesis of Novel RAS Farnesyl Protein Transferase Inhibitors
3:00	R57	Terry, Jay	*Piper sanctum* Natural Product Synthesis
3:00	R58	Skumautz, Erin Mallon, Cassie	Employee Selection
3:00	R59	Motschke, Lisa Olah, Shannon	Face Recognition: Impact of Emotional Expressions
3:00	R60	Trisko, Jenna Stambaugh, Morgan	Effects on Memory Using Concurrent Verbalization within the Stream of Consciousness
3:00	R61	Roering, Andrew	Photolysis of Phenethyl Isothiocyanate

Session S: Invited Researcher Address and Reception **Room:** Cascade

Moderator: *Ronald Farrell, Dean of the College of Social Sciences*

4:30 – 5:30 **Dr. Aaron Bolin** ***Soft Science and Cold Hard Reality: Finding Success in the Social Sciences***

Dr. Bolin currently serves as a Psychologist with the Human Performance Center detachment at the Navy Surface Warfare Officers School in Newport, Rhode Island. Dr. Bolin received a Ph.D. in Industrial/Organizational Psychology at Northern Illinois University in 2002.

Dr. Bolin has presented numerous papers at professional conferences and published articles in several scholarly journals including *Education and Psychological Measurement*, *Measurement and Evaluation in Counseling and Development*, *Journal of Business and Psychology*, *American Journal of Psychological Research*, and *Journal of Psychology*. He has also authored articles for trade publications, authored instructional materials, received several grants, and consulted with a variety of organizations.

Dr. Bolin's current professional/research interests include: human performance improvement, cognitive biases and stereotypes, deviant workplace behaviors, personality and performance, group and team performance, leadership, and integrity. Dr. Bolin's professional affiliations include the International Society for Performance Improvement, Society for Industrial and Organizational Psychology, American Psychological Association, American Psychological Society, and Toastmasters International.

College of Science and Engineering
Denise M. McGuire Student Research Award Ceremony **Room:** North Voyageurs

4:30 – 5:30	Presented by David DeGroote, Interim Dean of the College of Science and Engineering

Session T: Science and Engineering IV **Room:** North Voyageurs

Moderator: *Maria Mikolchak, Assistant Professor of Foreign Languages and Literature*

Time	Presentation Index	Presenter(s)	Title
5:30	T1	McClure, Nicholas	Random Extinction of Population Patches
5:45	T2	Eisterhold, Joe	Evaluation of Control Methods for Invasive Plants at Military Training Sites in Minnesota
6:00	T3	Kronland, William	Effects of Post-Fire Fuels Treatments on Vertebrate Communities in Southeastern Montana
6:15	T4	Khan, Tahir	Pollution Diffusion at SCSU
6:30	T5	Piotrowski, Aaron	Effects of Oxovanadium Complexes (possible anti-cancer compounds) on the Early Development of *Xenopus laevis*

Session U: Gender Studies **Room:** South Voyageurs

Moderator: *Pat Samuel, Professor of Women's Studies (retired)*

Time	Presentation Index	Presenter(s)	Title
5:30	U1	Ingmire Seminitis, Julie	Crisis Pregnancy Centers: Are Women Being Misled?
5:45	U2	Enger, Kathryn	Leading Ladies: Modeling the Ideal Woman in 1937-1941 Hollywood Women's Films
6:00	U3	Azadi, Parivash Brehmer, Kathleen Steinleitner, Beth Chesborough, Sarah	The Negative Portrayal of Women in the Media
6:15	U4	Harris, Sara	An Investigation into the Murders of Women in Juarez and Chihuahua, Mexico

Session V: International Business **Room:** North Glacier

Moderator: *Isolde Mueller, Associate Professor of Foreign Languages and Literature*

Time	Presentation Index	Presenter(s)	Title
5:30	V1	Melsness, Paul Kasprzak, Josh Smith , Justin T.	The Economic Characteristics of the Airline Industry
5:45	V2	Gehrmann, Tyler	Siemens' Internship
6:00	V3	Notsch, Shana	Airbus und europaeische Zusammenarbeit. (Airbus and European Cooperation)
6:15	V4	Fuchsteiner, Adam	DaimlerCrysler

Session W: Science and Engineering V **Room:** South Glacier

Moderator: *Karen Thoms, Professor, InforMedia Services*

Time	Presentation Index	Presenter(s)	Title
5:30	W1	Pfeffer, Derek Karls, Vince	Vacuum Cup Refinement for Park Industries, Inc.
5:45	W2	Lo, Siu-Cheong	A Study of the Effect of Bit Torrent on Network Performance
6:00	W3	Kallarackal, Jennifer	Cloning and Characterization of a Polymorphic Class 3 Aldehyde Dehydrogenase
6:15	W4	Kokula, Mary	The Physiological Effects of Reiki on the Chakra System

Session X: Teaching English as a Second Language **Room:** Granite

Moderator: *Jim Robinson, Professor of English and Director of Teaching English as a Second Language Program*

Time	Presentation Index	Presenter(s)	Title
5:30	X1	Cordes, Nancy	English with an Attitude
5:50	X2	Elmeski, Mohammed	The Diary of an ESL Learner Teaching Freshman Composition
6:10	X3	Fagerland, Rhoda	Sing a Song o' Syntax

Session Y: The Renaissance **Room:** Lady Slipper

Moderator: *Sharon Cogdill, Interim Designated Officer for Claims of Harassment and Discrimination*

Time	Presentation Index	Presenter(s)	Title
5:30	Y1	Braun, Noah	Renaissance Musical Influence in Alan Hovhaness's *Magnificat*
5:45	Y2	Nguyen, Emily	Italian Renaissance Villas and Gardens
6:00	Y3	Huttes, Corinn	Swaying in the Wind: Galileo
6:15	Y4	Laingen, Kristina	Beauties with Brains: The Courtesans of the Renaissance
6:30	Y5	Wiant, Molly Fink, Celia	Leonardo da Vinci
6:45	Y6	Peterson, Jaclyn	The Fall of the Roman Catholic Church During the Italian Renaissance

Session Z: All Disciplines II **Room:** Ballroom

Moderator: *Jennifer Kolden, Information Officer, College of Science and Engineering Applied Research and Development Center*

Time	Presentation Index	Presenter(s)	Title
6:30	Z1	Pelot, Adam	Hands-on Earth Science
6:30	Z2	Ellickson, Jim	Decision Support Tool for Wetlands Restoration
6:30	Z3	Caris, Jeffrey	Methademic
6:30	Z4	Sherchan, Sudip Upadhyaya, Prakash	Multiple Child Monitoring System
6:30	Z5	Karki, Pradyumna Sedhain, Anita	Wireless Baby Music Mobile
6:30	Z6	Marston, Jessica	What Are Students Conceptions about Atoms?
6:30	Z7	Peterson, Amanda	Toxicity of Synthesized Ruthenium Complexes That Show Anti-tumor Properties
6:30	Z8	Walker, Katie	Should Gray Wolves be Protected?
6:30	Z9	Konduri, Balaji	Peak to Average Power Reduction in OFDM
6:30	Z10	Peterson, Cassandra	Oxidation of Ethylene Glycol Ether Aldehydes by Aldehyde Dehydrogenases of Xenopus

Session Z: All Disciplines II, cont. **Room:** Ballroom

Moderator: *Jennifer Kolden, Information Officer, College of Science and Engineering Applied Research and Development Center*

Time	Presentation Index	Presenter(s)	Title
6:30	Z11	Loch, Jim Gebhardt, Angie Illies, Angie Vereen, Shalei Keller, Cathy Lieser, Tanya Hoffman, Janell Blonigen, Janelle Kotaska, Carolyn	Meeker County Emergency Preparedness
6:30	Z12	Dettman, Leah	Students Beliefs about GMOs
6:30	Z13	Franklin, Rochelle Wentland , Laura Neis, Carissa Schnabel, Christiana Laurila, Jennifer	Mille Lacs County Seatbelt Use
6:30	Z14	Fett, Allison Walz, Benedict Levenhagen, Anna	Comparing and Contrasting the Diagnosis of Compulsion Versus Addiction
6:30	Z15	Kishibe, Keiko	The Relationship between Self-disclosure and Loneliness
6:30	Z16	Henderson, Adam	Design, Construction, and Validation of a Resonance Enhanced Multi-photon Ionization (REMPI) System for the Detection of Gas Phase, Aromatic Hydrocarbons
6:30	Z17	Olson, Kristoff Eisenschenk, Jeremiah Cohrs, Chelsea Meuleners, Andrea	Heat Acclimation in *Peromyscus eremicus*
6:30	Z18	Stearns, Matthew	A New Model Assisted Chi-Square Distance Function for the Calibration of Design Weights
6:30	Z19	Bueckers, Deborah	Performance Enhancing Drugs
6:30	Z20	Wu, Yunsong	Simulation of Asynchronous CDMA System
6:30	Z21	Schlagel, Adam	Recycling at St. Cloud State University
6:30	Z22	Motschke, Lisa	The Design and Synthesis of Farnesyl Protein Transferase Inhibitors
6:30	Z23	Merriam, Jenny Paquette, Adam S. Perry, Kimberly	Gender and Organizational Environment as Predictors of Destructive Leader Behavior
6:30	Z24	Eisenmenger, Keith	Photochemistry of Phenyl Isothiocyanate
6:30	Z25	Sills, Laura	Effects of Herbal Treatments on Blood Pressure of Rats

Session Z: All Disciplines II, cont. **Room:** Ballroom

Moderator: *Jennifer Kolden, Information Officer, College of Science and Engineering Applied Research and Development Center*

Time	Presentation Index	Presenter(s)	Title
6:30	Z26	Cochran, Leslie Daun, Reesa Anderson, Melissa DeRusha, Liz Ebensteiner, Leah Hanson, Katie Johnson, Eada Kraemer, Sara Nelson, Wendy Nodland, Heather Senger, Hannah Pairolero, Amber	Speech Language Pathologists: Are They Stressed?
6:30	Z27	Bovee, Roderick	A Geochemical Survey of Saint Cloud Granites and Basalts
6:30	Z28	Salad, Mohammad	Cloning and Expression of ALDH9A1
6:30	Z29	Iverson, Theresa	Correlating the Appearance of Pioneer Gobioid Fish Species with Pacific Island Formation using Molecular Clock Techniques
6:30	Z30	Stanley, Todd	Laboratory Tests of a Real Fringe Interferometer
6:30	Z31	Noehring, Nichole Roth, Cassandra	Effects of Estradiol on *Melosira varians*, a Common Tychoplanktonic Diatom
6:30	Z32	Sewell, Sarah	Urban Effects on Nutrient Loading of the Sauk River within St. Cloud Metro Area
6:30	Z34	Gallagher, Sunshine	Headspace Solvent Microextraction with Fluorescence Detection
6:30	Z35	Nguyen, Alyssa	Anti-cancer Activities and DNA Interactions of Ruthenium Benzimidazole Complexes
6:30	Z36	Henning, Gregory	Ray Tracing Analysis of a Real Fringe SHS Interferometer
6:30	Z37	Lei, Peng Bonkat, Tim	Smart Parking System
6:30	Z39	Hansen, Dennis	Variations in *Melosira varian's* Protein Expression in Response to Alkylphenol Exposure
6:30	Z40	Kummer, Elizabeth Greene, Eric	Effects of Diminishing Food Quality on *Xenopus laevis*
6:30	Z41	Braatz, Sara	The Effect of Stress and Attention on Injury Potential in College Athletes
6:30	Z42	Wittman, Abbi	Historical Land Use Analysis of the Sauk River through the Saint Cloud MSA

Session Z: All Disciplines II, cont. **Room:** Ballroom

Moderator: *Jennifer Kolden, Information Officer, College of Science and Engineering Applied Research and Development Center*

Time	Presentation Index	Presenter(s)	Title
6:30	Z43	Dokken, Jennifer	A Markov Model for SCSU Enrollment and Retention Patterns
6:30	Z44	Piere, Christopher	Solution Speciation and Anti-Diabetic Properties of $VO(pbd)_2$ and $VO(dbm)_2$
6:30	Z45	Kuehler, Joshua Hahn, Amber Nishiki, Miho	Attitudes Toward the War on Terrorism and its Impact on School and Work

Denise M. McGuire Student Research Award Recipients
2005
College of Science and Engineering

4:30-5:30 Room North Voyageurs

Student Name(s), Title of Research Project
Faculty Research Sponsor, Department

Roderick Bovee, "A Geochemical Survey of Saint Cloud Granites and Basalts"
Kate Pound, Earth and Atmospheric Sciences

Megan Cleland, "Anticancer Activity and DNA Interaction Studies of Ruthenium Metal Complexes"
Lakshmaiah Sreerama, Chemistry

Matthew Gesmundo, "Molecular Spectroscopy of Comet Machholz"
Maria Womack, Physics, Astronomy and Engineering Science

Shourjo Ghose, "Genomic Analysis of Human Breast Adenocarcinoma MCF-7 Cell Line Resistant to *Ottelione A* (MCF 7/ottA)"
Lakshmaiah Sreerama, Chemistry

Dennis Hansen, "The Effects of Alkyl Phenol on the Diatom, M*elosira varians*; a Proteomics Study"
Matthew Julius, Biological Sciences

Theresa Iverson, "Correlating the Appearance of Pioneer Gobioid Fish Species with Pacific Island Formation using Molecular Clock Techniques"
Matthew Julius, Biological Sciences

Steve Kron, "Differential Expression of Proteins in *Ottelione A* Resistant Human Breast Carcinoma Cells"
Lakshmaiah Sreerama, Chemistry

Alyssa Nguyen, "Anticancer Activities and DNA Interactions of Ruthenium Benzimidazole Complexes"
Lakshmaiah Sreerama, Chemistry

Mohammad Salad, "Detoxification of Chloroacetaldehyde by Class 9 Aldehyde Dehydrogenase (ALDH9A1) Present in Human Kidney"
Lakshmaiah Sreerama, Chemistry

Sarah Sewell, "Urban Effects on Nutrient Loading of the Sauk River within the St. Cloud Metro Area"
Michner Bender, Environmental and Technological Studies

Jordan Vincent, "Hydrothermal Synthesis and Characterization of Vanadium-Flavonoid Complexes"
Mohammad Mahroof-Tahir, Chemistry

Emily Wessel, "Role of ALDH1A1, ALDH2, and ALDH3A1 in the Metabolism of Benzyloxyacetaldehyde"
Lakshmaiah Sreerama, Chemistry

Award recipients will receive a monetary stipend of up to $500.00 (per research project), possible funding for research supplies and expenses and formal recognition from the College of Science and Engineering.

Abstracts

Session A | Interdisciplinary Science Symposium | Room North Voyageurs

Anti-cancer Activities and DNA Interaction Studies of Ruthenium Complexes

The discovery of cisplatin, a platinum-based anti-tumor drug, has led to the discovery of other metal-ligand complexes as anticancer drugs. Cisplatin-based therapies are used throughout the world to treat testicular and ovarian cancers. The discovery of other metal complexes as anticancer drugs for their use to treat drug resistant tumors and development of alternative therapies has gained importance. In this regard we have developed several ruthenium-benimidazole complexes and tested their ability to inhibit tumor cell growth. Ruthenium-benzimidizole compounds assayed in this study were: ligand 2 [2-o-hydroxy phenyl benzimidazole] and corresponding complexes RU-2 [$RuCl_3$(o-OHPhBzIH)$_3$] and RU-5[[$Ru(CO)_2$(o-OHPhBzIH)$_4$]Cl_2]; ligand 3 [2-phenyl benzimidazole] and its corresponding complex RU 3[$RuCl_3$(PhBzIH)$_3$]; ligand 6 [1-m-hydroxybenzyl-2-m-hydroxy phenyl benzimidazole] and its corresponding complex RU 9 [$RuCl_3$(m-HPhBBzI)$_2$]; ligand 7 [1-p-hydroxybenzyl-2-p-hydroxy phenyl benzimidazole] and its corresponding complex RU 8[$RuCl_3$ $(CO)_2$(p-HPhBBzI)$_2$].Two tumor models, human breast adenocarcinoma MCF-7 cell line and a drug-resistant human breast adenocarcinoma MCF-7/OttA cell line, were used in this study. These ruthenium complexes tested exhibit a range of anticancer activities; LC_{50} values - 5-500 µM. Ruthenium itself is not toxic to the cells. The aforementioned complexes were assayed for DNA interaction using calf-thymus DNA and UV-visible spectrophotometry. These studies suggest that ruthenium-benimidazole complexes bind to DNA. Quantitative studies leading to the determination of binding constants are being examined by spectroflourimetry using ethidium bromide as a competing ligand. Success in these experiments will be extended to the metal complex interactions with the cellular DNA.

Presentation Index: A1 **Time:** 11:00
Department: Chemistry

Student Presenter(s)
Cleland, Megan

Faculty Sponsor(s)
Sreerama, Lakshmaiah

Differential Expression of Proteins in *Ottelione A* Resistant Human Breast Carcinoma Cells

Otteline A, a diastereomeric 4-methylene-2-cyclohexenone was isolated from a freshwater Indian plant Ottelia alismodes and has been found to display anticancer properties. The drug has been shown to inhibit cell at nanomolar concentrations (LC50 values of 25-50 nm) and this is believed to be due to *Ottelione A*'s ability to prevent tubulin polymerization. An *ottelione A* resistant sub-cell line, MCF 7/OttA, was created from the wild human breast carcinoma cell line, MCF 7/0, in order to study how cells acquire cellular insensitivity to the drug, how the mechanism of tubulin polymerization is inhibited when cells become resistant, and identify molecular target alterations that occur in the resistant cells. The former two goals of this study are being investigated by other researchers in our laboratory, where as the third goal is being pursued in this study. We are utilizing a proteomics approach to identify differentially expressed proteins in *ottelione A* resistant cells. For this purpose we have isolated total protein from cultured otteline A resistant cells (MCF 7/OttA) and its parent cell line (MCF 7/0) and fractionated them based on molecular mass (gel permeation chromatography). Currently the fractionated proteins are being separated by polyacrylamide gel electrophoresis (PAGE). The protein fractions of MCF 7/0 and MCF 7/OttA cells separated by PAGE will be compared and differentially expressed proteins will be located. Such proteins will be analyzed by matrix-assisted laser disorption/ionization-time-of-flight mass-spectrometry (MALDI-TOF MS) to reveal their identity.

Presentation Index: A2 **Time:** 11:15
Department: Chemistry

Student Presenter(s)
Kron, Steve

Faculty Sponsor(s)
Sreerama, Lakshmaiah

Hydrothermal Synthesis and Characterization of Vanadium Flavonoid Complexes

The use of hydrothermal synthetic technique in the inorganic lab has become a new avenue for the synthesis of novel metal-organic complexes. The usefulness of hydrothermal technique comes from its unique ability to make complexes of metals with organic ligands that normally do not interact under ambient aqueous conditions. This technique has not been used to synthesize potential antidiabetic vanadium flavonoid complexes. Vanadium and flavonoids have individually shown antidiabetic and anticancer properties in animals, however, their combined effects have not yet been studied. We are involved in the synthesis and characterization of these complexes by using hydrothermal technique. An IR spectrum revealed the formation of vanadium flavonoid complex corroborated by shift in C=O peaks and appearance of a V=O peak. To see the interaction of vanadium complexes with proteins, we are using MALDI-TOF-MS(matrix assisted laser desorption/ionization-time of flight-mass spectrometry). Mass spectrum analysis of three proteins has been completed by using MALDI-TOF. The results of the interaction of vanadium complexes with enzyme will be presented.

Presentation Index: A3 **Time:** 11:30
Department: Chemistry

Student Presenter(s)
Vincent, Jordan

Faculty Sponsor(s)
Mahroof-Tahir, Mohammad

Synthesis, Purification, and Characterization of 2-butoxyethanal by Swern Oxidation

Ethylene glycol ethers (EGE's) are a group of solvents that are massively produced in the United States. EGE's are widely used in aerosols and in cleaning material for industrial and household use; the most common of these EGE's is butoxyethanol. When an alcohol, like butoxyethanol, is introduced into the body it is oxidized into is corresponding aldehyde through alcohol dehydrogenases. When there is a build up of the aldehyde it can have adverse side effects; for this reason it is of interest to understand these effects on individuals. The aldehyde intermediate is not stable for storage or transport from a manufacture and must be produced from the alcohol, through a procedure called swern oxidation. The reaction is when oxalyl chloride and dimethyl sulfoxide are mixed in dichloromethane, which produces a strong oxidizing agent. When this reacts with butoxyethanol and triethylamine it converts the alcohol into the aldehyde. The purification of the product is achieved by removing the solvents in the reaction from the product. The major solvents that need to be removed are triethalmaine, dichloromethane, and un-reacted butoxyethanol. The purification is achieved by washing of the organic product, roto-evaporation, and two fractional distillations with a vacuum. Characterization of the product using the proton NMR is shown with a peak at 9.7 ppm, which is expected of an aldehyde product. Also GC-MS shows two peaks that are indicative of the aldehyde product, and the starting alcohol material. The aldehyde has a lower retention time then the alcohol, which was expected.

Presentation Index: A4 **Time:** 11:45
Department: Chemistry

Student Presenter(s)
Gross, Aaron

Faculty Sponsor(s)
Gregory, Daniel

Anti-cancer and Teratogenic Activities of Two Vanadium Complexes $VO(TMH)_2$ and $VO(HD)_2$

Recent studies have demonstrated that vanadium metal complexes exhibit significant antidiabetic and anticancer properties. Our research group has previously synthesized several oxo-vanadium metal complexes and chemically characterized them. Their biological and biochemical properties are not yet fully investigated, accordingly the objective in this study is to investigate the teratogenic and anticancer properties of two oxo-vanadium complexes, namely, $VO(TMH)_2$ and $VO(HD)_2$- and their corresponding ligands TMH (2,2,6,6 – tetramethyl-3,5-heptanedione) and HD (3,5-heptanedione). Teratogenic effects of the above two compounds were tested using tadpole embryos of Xenopus. Each of the complexes produced growth deformities in tadpoles; $VO(TMH)_2$ was a more proficient teratogen as compared to $VO(HD)_2$. Anticancer properties of these two compounds are being determined using a human breast carcinoma MCF-7/0 cell line. The cells will be treated with different concentrations of the two above compounds and subjected to a colony formation assay. Based on these tests surviving fractions are determined and efficacy (LC_{50} and LC_{90}) of the compounds as anticancer agents will be estimated.

Presentation Index: A5 **Time:** 12:00
Department: Chemistry, Biological Sciences

Student Presenter(s)
Corrigan, Ross
Petersen, David

Faculty Sponsor(s)
Mahroof-Tahir, Mohammad
Schuh, Timothy
Sreerama, Lakshmaiah

Pediatric Cardiology Expert System for Primary Care Physicians

Congenital heart disease is a structural malformation or lesion of the heart present at birth. Pediatric cardiology is the medical sub-specialty that is concerned with the diagnosis and treatment of patients with congenital heart disease. Detection of congenital heart disease usually occurs when a child's primary caregiver is performing a routine examination. However, due to the rarity of these lesions, primary caregivers often require a pediatric cardiology consultation to determine the nature and severity of the condition. An expert system is a computer program designed to emulate the knowledge and abilities of a human expert or experts. Such an expert system prototype has been designed to assist primary caregivers in their investigations of possible congenital heart disease. The system asks the user up to 52 questions to determine the presence of 78 findings that distinguish 20 diagnoses. The system is rule-based and incorporates the methodologies and knowledge of a pediatric cardiologist. Following the suggestion of the pediatric cardiologist, the system uses a "weight of evidence" approach to arrive at the correct diagnosis. This approach appeared natural for the expert, is easy to understand, implement, and modify, and initial results are encouraging.

Presentation Index: B1 **Time:** 11:00
Department: Computer Science

Student Presenter(s)
Renslow, Mark

Faculty Sponsor(s)
Julstrom, Bryant

Synchronous Belt Wear

A local company has expressed concern with premature belt wear on its traveling bridge diamond saw. It is desired to investigate the cause of the premature belt wear and extend the life of belts for increased customer satisfaction. Analysis of failed belt wear patterns showed two failure modes; improper tension and improper alignment. Initial (static) belt tension must be set according to the amount of power it transmits and the speed at which the drive operates. Over-tensioned belts show excessive wear in the land area of the belt, between the teeth. Under-tensioned belts show a hook pattern in the profile of the belt tooth. Another possible failure mode is the environmental conditions in which the belt operates. This may cause failure through chemical attack, accelerated wear due to slurry particles, or reduced tensile strength due to water absorption. More consistent means of measuring belt tension and setting proper alignment were developed, along with a determination of the degree to which environment affects belt life. Finally, new arbor drive designs were made, which may be used in next generation traveling bridge diamond saws.

Presentation Index: B2 **Time:** 11:15
Department: Mechanical and Manufacturing Engineering

Student Presenter(s)
Gill, Dean
Johnson, Zachary
Justison, Matthew

Faculty Sponsor(s)
Covey, Steve

Factors in Aviation Safety and Methods to Minimize their Effect

The term "human factors" has grown increasingly popular as the commercial aviation industry has realized that human error, rather than mechanical failure, underlies most aviation accidents and incidents. The automation of pilot functions must be considered to ensure the safety of the passengers, cargo and the aircraft. Air safety campaigners voiced their concerns over the prospect of unmanned aircraft sharing the same runways and airspace as piloted aircraft. Computers do not require rest time, ask for raises nor go on strike. Computers are not subject to fatigue and other aero-medical conditions. Computers do not commit Controlled Flight into Terrain (CFIT). Advances in artificial intelligence have allowed computer models to accurately respond to emergency situations and make decisions.

Presentation Index: B3 **Time:** 11:30
Department: Aviation

Student Presenter(s)
Du Lac, Shawn
Bjornsson, Robert

Faculty Sponsor(s)
Aceves, Robert

Brain Based Media Centers

Many school districts are implementing brain based learning and teaching into their curriculum and classroom practices. Brain based educators attempt to create a comfortable learning environment so the body and brain can be open to learning. These educators promote a set of life skills that help students relate to each other and adults in a respectful manner. Providing for multiple intelligences is also an important facet of brain based teaching. Threats to learners inhibit learning. Threats can be social or physical in nature, such as the learning environment. When confronted with threat the brain responds with a fight or flight reflex. Environmental threats in the media center may cause learners to feel hostile towards the media center or the information stored there. Media center threats may include poor lighting, dirty or broken furniture, excessive noise, clutter, offensive color combinations to some cultures, proximity of furniture in a defined space, room arrangement and lack of interior design principles. Brain based media centers in this study had color themes, plants, and curriculum related bulletin boards.

Presentation Index: B4 **Time:** 11:45
Department: Information Media

Student Presenter(s)
Buesseler, Carla

Faculty Sponsor(s)
Rodgers, Judith

Design Improvement in Chest Freezer Lid

Excessive manual labor is an issue that is directly linked to the costs and the revenue of any company. The main aim of this project is to reduce unnecessary manual labor in the assembly of chest freezer lids through line balancing and lid design changes. This project is being carried out at Electrolux Home Products (EHP) in St. Cloud, Minnesota. The lid-line currently has 11-13 workers for the assembly of lids. It was observed that a high number of workers are involved in inserting plastic tacks that hold the metal door, plastic panel and the gasket together. We have come up with four innovative designs that will obviate the use of plastic tacks. Using line-balancing techniques, we have been able to distribute the tasks in the lid-line uniformly. Together, these changes are expected to reduce the number of line workers needed from 11 to 9 while making the tasks to be performed ergonomically sound. Our project will ultimately help the assembly line run more efficiently at a much reduced cost.

Presentation Index: B5 **Time:** 12:00
Department: Mechanical and Manufacturing Engineering

Student Presenter(s)
Dhungel, Prateek
Bista, Min
Shanov, Adrian

Faculty Sponsor(s)
Bekkala, Andrew

Study of Racial Profiling in Saint Cloud Police Stops

This is a study designed to determine whether or not there is concern for racial profiling in St. Cloud Police traffic stops. Visual samples of drivers' race and gender are taken from 8 key sites. These data are then analyzed and compared to actual traffic stop data provided by the St. Cloud Police Department. By comparing traffic violations at the same intersections as our visual observations, it is possible to match distributions and determine whether the traffic violation data are significantly different from the visual data. This provides an indication of whether there is potential racial profiling present.

Presentation Index: C1 **Time:** 11:00
Department: Statistics

Student Presenter(s)
Hillestad, Richard

Faculty Sponsor(s)
Onyiah, Leonard

A Report of Contemporary Research on Drug Addiction and Criminal Behavior

This study reports individual research on relationships of co-existing drug addictions and criminal behavior. Information was obtained by structured interviews of thirty persons recovering from addictions, with legally established criminal backgrounds. The study will report interviewee responses to questions about relationships with addictions and convicted criminal behaviors.

Presentation Index: C2 **Time:** 11:15
Department: Educational Leadership and Community Psychology

Student Presenter(s)
Bucholz, Katrina
Rogers, Dennis
Fries, Doug
Ahsan, Chowdhury

Faculty Sponsor(s)
Jorgensen, Leeann

Student Satisfaction with Cultural Diversity on Campus: An Empirical Investigation

University environments reflect the cultural diversity within the boundaries of the United States. Dramatic increases in the minority population of the U.S. have been well documented and even greater increases in cultural diversity are predicted through 2050. Such growth in minority populations has been predicted on college campuses as well. In order to meet the needs of the diverse student populations they serve, university administrators face the task of furthering their understanding of students' perceptions of and satisfaction with cultural diversity as part of the educational environment. This paper presents the development and empirical testing of the Satisfaction With Cultural Diversity in the Educational Environment (SCDEE) scale. Results showed that the SCDEE was unidimensional and that it demonstrated adequate internal reliability.

Presentation Index: C3 **Time:** 11:30
Department: Marketing and Business Law

Student Presenter(s)
Frerich, Gretchen

Faculty Sponsor(s)
Bristow, Dennis

The Determinants of Employee Theft, an Investigation of Personality and Situational Variables on Prediction of Employee Theft.

The project measures the predictability of employee theft with correlations to variables of interest in psychology. It will investigate the relations that personality, learning (moral development), emotions, socio-economic status, perceived certainty of punishment, job-satisfaction, work-culture, drug and alcohol use has on prediction of employee theft on the sample. The data collection method will be through questionnaires and a survey. The potential benefit that participants may receive as a result of participation on the study will be understanding of the research topic, experience of personality and moral development test. This may increase the self-awareness of participants on commitment towards organization. Organizations will have potential from the study with increased knowledge of their major loss factor (theft). The study will investigate the potential causes and predictability of employee theft for the further understanding of this specific organizational behavior. Some of the potential benefits with decrease on employee theft are increased productivity, increased organizational commitment, increased security and a healthy work environment.

Presentation Index: C4 **Time:** 11:45
Department: Psychology

Student Presenter(s)
Jangam, Bipin

Faculty Sponsor(s)
Kulas, John

Third World Development and Health Status

"Development" can be seen through two perspectives; the positive aspect of improvement, and the negative implication of its side effects. The question that must be asked is if the cost outweighs the benefits. Development leads to new infrastructure, better health care systems, improved quality of life, and a longer life expectancy. Nonetheless, every benefit has its side effects. With development comes several new problems. Among these are: uncontrolled urbanization, pollution, exploitation, and the impact on culture. After weighing the problems, do western models of development have a positive or negative influence on the third world? This paper explores the untended consequences of development that can often lead to political unrest and instability through an examination of health care policies in developing countries. How do health care policies in the developing world mirror western values and understandings of progress, and how does this affect culture?

Presentation Index: C5 **Time:** 12:00
Department: Political Science

Student Presenter(s)
Bourke, Molly

Faculty Sponsor(s)
Greaves, Edward

Freedom of Speech in a Liberal Society: An Interpretation of Mill and its Implications on Hate

On Liberty, by John Stuart Mill, set the standard for liberal political thought when it was introduced in 1859. Since then, many have tried to both defend and deny the benefits of a liberal society. However, Mill's work left aspects of liberal theory vague, leaving many questioning the extent of his ideas, such as the Harm Principle and self/other-regarding acts. By using Mill as a starting point, I will establish a contemporary view of liberalism and argue in favor of a liberal approach to governmental authority. Doing so would limit the power of the government and place great trust and faith in the individual to acknowledge and follow what would be "best." After establishing my interpretation of Mill's work, I will apply it to the concept of freedom of speech as it applies to hate speech. I will argue in favor of the speech rights for all people, even if it includes abhorrent ideas. The result will require speech to be fought with more speech and the view that what is true and good will

Presentation Index: D1 **Time:** 11:00
Department: Philosophy

Student Presenter(s)
Sery, Joseph

Faculty Sponsor(s)
Des Jardins, Joseph

The Battle of Stamford Bridge: Brilliant Victory or Ultimate Defeat of Harold Godwinson?

1066 stands out as the year that changed the course of English history. Within the span of one month, three major battles occurred: York, Stamford Bridge, and Hastings. Historians have traditionally focused on the decisive battle of Hastings, and minimized the battles of York and Stamford Bridge. Treating the battles as separate events, and assuming that the Anglo-Saxon army was inferior to the invading Norman forces denies, however, the effect that the battle of Stamford Bridge had upon the Anglo-Saxon army, and thus ultimately the battle of Hastings. Historian Richard Glover, in his 1952 article, "English Warfare in 1066," acknowledges that Duke William of Normandy was cautious in his invasion of England. This cautiousness perhaps indicates that the Anglo-Saxon forces were powerful and formidable foes. If we accept that the Anglo-Saxon army was so strong, why did they lose the battle of Hastings? The answer may lie not in the differences in the military compositions of the armies, the traditional explanation of historians, but rather in the events leading up to the battle of Hastings. Harold Godwinson and his Anglo-Saxon army was forced to march up to York to battle the Vikings at Stamford Bridge, then march back with lightning speed to fight William. These physical and logistical challenges were sufficient to weaken the Anglo-Saxon army enough that William and the Norman army were able to achieve victory.

Presentation Index: D2 **Time:** 11:15
Department: History

Student Presenter(s)
Brambrink, Katie

Faculty Sponsor(s)
Rothaus, Richard

Sand Creek: Extermination of a Peaceful People

In the events that led up to the massacre at Sand Creek, the Native American/ White relations were changing from interaction and mutual trade to a mindset of total elimination of the Native Americans. The massacre at Sand Creek is a culmination of many causes from governmental policy to an individual seeking glory in all the wrong ways. In focusing on the events leading up to and the reaction after the massacre we can see a major shift in the United States' policy that led to the near extinction of the native American people. Even though Native American's like the Cheyenne and the Arapaho have survived to this day, their numbers were greatly decreased due to the westward expansion of the United States in the middle to late 19th Century.

Presentation Index: D3 **Time:** 11:30
Department: History

Student Presenter(s)
Schrubbe, Jr., Gordon

Faculty Sponsor(s)
Galler, Robert

Grand Portage: The Historical Significance

Before Pigs Eye sold his first beer in what would become St. Paul, and the first stone was laid at Ft. Snelling, there was the Grand Portage. Popular Minnesota history concentrates on the area surrounding Minnesota and Mississippi river valleys and the men who settled in the region, but the first Europeans settlements in what would become Minnesota happened far to the north; along the north shore of Lake Superior. The geographical feature known as the Grand Portage created a highway that allowed individuals involved in the fur trade access to the fur-rich area inland. The Anishinaabe, or Ojibwe, provided vital support for the establishment of the fur trade to make the Minnesota fur trade the financial powerhouse of the late eighteenth and early nineteenth centuries. It was also from this point that several expeditions were launched in search of the illusive westward passage. Even after the importance of the fur trade declined in the early 19th century, Grand Portage remained a key component in International politics, including the establishment of the boundary between the United States and Canada.

Presentation Index: D4 **Time:** 11:45
Department: History

Student Presenter(s)
Woolery, Ronald

Faculty Sponsor(s)
Galler, Robert

Pivotal Women: Activism in the Civil War and After: How their Activism Changed America

Northern women were the axis for change in female roles in their society before, during, and after the Civil War. The war and their participation in it was a continuation of public work from the antebellum period. The war itself did not make them public women; rather it provided them yet another forum in which to participate as active citizens. Historians are just beginning to understand women's contributions to the Civil War. Historians until the 1980s felt women's activism took a hiatus with the start of the Civil War and did not pick up again until the 1880s. Extensive research of diaries, journals, autobiographies, tributes, books, articles and films, confirms that women were active throughout the nineteenth century outside the domestic sphere. Through research in these I will show that middle class, white women in the North engaged in public work for reform and benevolence before, during, and after the war. This uninterrupted flow of activity in the public sphere further proves that these women did not suddenly leave the private sphere in the late 19th century when the suffrage movement gained new momentum as earlier women's historians believed. Rather, women engaged in an ongoing effort to change their roles in American society.

Presentation Index: D5 **Time:** 12:00
Department: History

Student Presenter(s)
Brehmer, Kathleen

Faculty Sponsor(s)
Glade, Betsy

Federico Garcia Lorca & la Guerra Civil de Espana

This paper examines the Spanish Civil War of 1936-1939 and how it affected Spanish author Federico Garcia Lorca. The research I completed for this research project includes a semester long examination of a variety of authors of this time period, reviewing academic articles, specific works of Federico Garcia Lorca, and research of the Spanish Civil War. I was also able to incorporate some knowledge of the Spanish Civil War from the readings of Garcia Marquez' Cien Años de Soledad and Isabelle Allende's La Casa de los Espíritus. The outcome of my research suggests that the circumstances and opposing positions of the Spanish Civil War greatly influenced the work and life of Federico Garcia Lorca, and perhaps was responsible for the end of his life.

Presentation Index: E1 **Time:** 11:00
Department: Foreign Languages and Literature

Student Presenter(s)
Tomczik, Kelly

Faculty Sponsor(s)
Splittgerber, Lisa

The Fighting Forces of Civilization, Barbarity, and Tradition as Seen Through Two Popular Latin American Novels

Considered master works in Latin American literature, *Cien años de Soledad*, by Gabriel García Márquez and *La casa de los espíritus*, by Isabel Allende present many aspects of Latin American life during the 20th century. The fictional novels refer to historical transformations during the time period, while involving the reader in the cultural and social norms of Latin America. Both novels employ a literary structure known as Magical Realism. Pioneered by Gabriel García Márquez, this manner of writing involves presenting extraordinary events or fantastic elements in a simple way. Due to the fact that the novels are so similar in their context, they provide contact points that allow for an understanding of how Latin American history, culture, and social life have evolved to its present point. Therefore, the objective of this paper was to identify those similarities and better understand Latin America's past and present. To meet this objective, the method was to compare the development of common Latin American history in the two novels by focusing on the fighting forces of civilization, barbarity, and tradition. It was found that social structure, politics, and military environments played a major role in the history of the region, as well as the discovery of the delicate balance between the acceptance and usage of scientific advancements or new inventions against the powerful forces of nature. Implications of these findings are present in Latin American life today. Order and progress has not come without the price of natural disasters, violence, and the fading of traditional ways of life. Lastly, this paper helps the reader reflect on all of the unanswered questions related to military rule in countries like Chile and Argentina and provides a rough historical background for understanding conflicts like the ones today in Colombia and Venezuela.

Presentation Index: E2 **Time:** 11:15
Department: Foreign Languages and Literature

Student Presenter(s)
App, Joseph

Faculty Sponsor(s)
Hasbrouck, Michael

Chilean Social Customs

Abstract not available at this time.

Presentation Index: E3 **Time:** 11:30
Department: Foreign Languages and Literature

Student Presenter(s)
Egan, Lindsey

Faculty Sponsor(s)
Splittgerber, Lisa

The Value of Park Space and Recreation areas to Communities

Parks and Recreation areas are a common and desired feature with value in most communities. Poor planning by communities to include or not include park and recreation areas with their communities may have a negative effect on the future growth or raise problems during redevelopment of communities to try and go back and regain these features. To test this notion, this research looked at two communities with the similar acreage. The community of Mound, MN, is older and in redevelopment stages, while the other community of Rogers, MN, is fairly young and is still in the development and growth stage. Results from this research showed that planning for park and recreation areas in the early stages of development can have a direct benefit to the community as it is develops. On the other hand, there is still a benefit for a community to reshape and add park and recreation areas while it redevelops. These results support other studies, which show that the value of park and recreation areas to communities is extensive, and are worth the time, effort, and money whether they are planned before or after development.

Presentation Index: F1 **Time:** 11:00
Department: Geography

Student Presenter(s)
Reichardt, Robert

Faculty Sponsor(s)
Leppman, Elizabeth

Minnesota College Towns

Minnesota has more than 72 different colleges ranging from community and technical colleges to four-year undergraduate and graduate public and private schools. Even with the great variety of different schools, there is no distinct College Town format in Minnesota. Many of these colleges hold special traits that relate to a College Town. The question answered is what makes Minnesota unique from other states and their colleges. The first step is to define what a College Town is, and then the history of colleges in the United States, as well as the history of colleges in the state of Minnesota. Fieldwork, visiting colleges throughout the state of Minnesota, will help to determine the qualities related to a College Town.

Presentation Index: F2 **Time:** 11:15
Department: Geography

Student Presenter(s)
Milstroh, Kimberly

Faculty Sponsor(s)
Leppman, Elizabeth

An Examination of how Demographic Factors Affect School Referenda in Outstate Minnesota

The high amenity areas of North Central Minnesota lake country are attracting retirees from around the country. This demographic shift is having an impact on local politics. A key question involves the level of community engagement by people who are not dependent on the local economy for their livelihood. One basic local political measure is school referendums that provide either capital or operating funds to school districts. A dilemma that may be facing school officials in high retirement growth areas is a lack of connection to the local school system. The question becomes “Will people who did not go to school here, whose children do not live here and whose grandchildren do not go to school here support local school referendums that will raise their taxes?” This paper examines some general referendum election results in rural Minnesota in light of demographic data and looks in-depth at a district that incorporates both amenity areas and areas of the

Presentation Index: F3 **Time:** 11:30
Department: Geography

Student Presenter(s)
Wrolson, David

Faculty Sponsor(s)
Leppman, Elizabeth

Sensor Based UGV

Military personnel require crucial information about the enemy before deciding on a plan of attack, i.e. location of enemy landmarks or personnel. During hostile encounters, this makes ally soldiers susceptible to engagement with the enemy. The Sensor Based UGV (Unmanned Ground Vehicle) is a means to remove the human element of reconnaissance to ensure less ally casualties. The Sensor Based UGV is a collaboration between the Electrical and Mechanical Engineering departments at SCSU to design, build, test, and deploy a prototype model that subsequent models will stem from. The SCSU MME/ECE team will be competing against a team of engineering students from St. Thomas University. Along with sensors, the SBUGV will have a paintball marker controlled by a pan/tilt unit wirelessly via a laptop computer. To prove that our team has arrived at the predetermined way points, a paintball will be fired for position verification. The UGV will also have a camera, which will be controlled wirelessly with a laptop computer. This in conjunction with a GPS tracker will be the only means of navigating this UGV throughout the obstacle course. Once the obstacle course is complete, the SCSU and St Thomas team will compete in a head-to-head battle to see which school has the superior design.

Presentation Index: F4 **Time:** 11:45
Department: Mechanical and Manufacturing Engineering

Student Presenter(s)
Wilson, Charles

Faculty Sponsor(s)
Bekkala, Andrew

A Geography of College Football Recruiting

Today, just as always, there are college football powerhouses. USC, Oklahoma and Miami always seem to compete for the national championship. Besides coaching, it is recruiting that enable teams to rebuild after losing key seniors to graduation and underclassmen to the NFL draft. It is recruiting that gets talented players to the university in the first place. But, is there a pattern to how some schools recruit? This research will aim at determining if any such patterns do exist. Are certain schools more prone to recruit players close to "home?" Do the powerhouse schools possess the ability to recruit more nationally then a sub-par school? These are the type of questions that will be explored and answered.

Presentation Index: F5 **Time:** 12:00
Department: Geography

Student Presenter(s)
Vogt, Matthew

Faculty Sponsor(s)
Leppman, Elizabeth

The Bubble: Why Science Fiction Matters

Along with introducing the short story "The Bubble," the author will present the effect that science fiction has, as mythology implemented in the future. Since science fiction is so often associated with popular stereotypes like Star Trek, the presentation is to assert that science fiction still remains worth reading.

Presentation Index: G1 **Time:** 11:00
Department: English

Student Presenter(s)
Shub, Daniel

Faculty Sponsor(s)
Dorn, Judith

The Historical Grounding of Stephan Crane's *Red Badge of Courage*

Stephen Crane's, *The Red Badge of Courage*, has long been considered one of the greatest novels on war and its psychological effects. It is the story of Henry Fleming, a youth fighting for the Union in our nation's civil war who is eager to prove himself in battle. Henry's idealistic and heroic notions of war are soon shattered by his own cowardice in his first battle and by the death of his friend Jim, but the confusion and terror of battle eventually drive Henry to acts of valor and courage. Nowhere in this brilliant work did Crane explicitly state where the novel's battle took place, but he did include subtle information about one location. Although none of the characters ever say where they are, Crane left several other clues that all suggest he did have a particular historical battle in mind when he wrote *The Red Badge of Courage*. Crane's description of the surrounding terrain and weather, the dialogue of the Union soldiers, and the various movements and actions of soldiers all point to the battle of Chancellorsville, Virginia, May 1-4, 1863, as the historical model for the novel.

Presentation Index: G2 **Time:** 11:15
Department: English

Student Presenter(s)
Edmunds, Erik

Faculty Sponsor(s)
Dorn, Judith

The Effects of Error Feedback in Writing

This paper examines the effects of error feedback in ESL students' writing accuracy by analyzing and comparing their written compositions in detail. The participants are college ESL students in a semester-long class. Different error types and feedbacks are discussed to explore pedagogical implications.

Presentation Index: G3 **Time:** 11:30
Department: English

Student Presenter(s)
Deng, Danmin

Faculty Sponsor(s)
Teutsch-Dwyer, Marya

Communication Patterns between Japanese ESL Students and Native ESL Teachers

In order to develop Japanese students' skills in listening and speaking more effectively, many western-trained ESL/EFL teachers come to Japan to teach the language. While this research originally was looking for the common difficulties in teaching/learning English in Japanese educational settings, in fact, the result of the survey shows both positive and negative feedback from Japanese students who have experienced ESL classes about their western-trained ESL/EFL teachers. For the western-trained English teachers and Japanese students, difficulties in teaching for one and in learning English for the other are mostly caused by cultural differences. I will discuss the positive and negative feedback from Japanese students on the more western teaching style that is called communicative teaching approach, and at the end of the presentation, I will provide useful suggestions for using the communicative teaching approach in Japanese classrooms.

Presentation Index: G4 **Time:** 11:45
Department: English

Student Presenter(s)
Kamada, Yukiyo

Faculty Sponsor(s)
Robinson, James

Phonemic Transfer and Intelligibility Among Somali Speakers of English

The Somali population continues to grow in Central Minnesota. As more Somali speakers begin learning English, there is an increased need for linguistic information on what specific issues Somali speakers face when they learn English. This is a sociophonological study that looks at the role of phonemic transfer between Somali and English and the effect that this transfer has on the intelligibility of a Somali speaker by native speakers of English. It will provide information on specific pronunciation issues, how these issues affect intelligibility, and suggestions for teachers to help their Somali students improve their pronunciation.

Presentation Index: G5
Time: 12:00
Department: English

Student Presenter(s)
Lindsey, Melissa

Faculty Sponsor(s)
Koffi, Ettien

An Improved Randomized Response Model: Estimation of Mean

In the present investigation, we suggest a new randomized response model for collecting information on quantitative sensitive variables like drug use, income, induced abortions etc. The resultant estimator has been found to be better than the usual additive randomized response model. The main interesting feature of the proposed model is that it is free from the parameters of the scrambling variable unlike the multiplicative and additive models due to Eichhorn and Hayre (1983). Relative efficiency of the proposed estimator has also been studied.

Presentation Index: H1 **Time:** 11:00
Department: Statistics

Student Presenter(s)
Gjestvang, Christopher

Faculty Sponsor(s)
Singh, Sarjinder

Stochastic Apportionment

Apportionment is the process of allotting indivisible objects proportionately among participants entitled to unequal shares. The problem of apportionment has been a subject of extensive study and debate by both mathematicians and politicians. To state the problem simply, given a house size, S, and state populations Pi, we need to find an allocation, Ai, of house seats to states where Ai's sum up to S and Ai's are nonnegative integers. In this talk, we describe a stochastic method of apportionment introduced in 2000 by Geoffrey Grimmett. Prior to Grimmett, many static methods of apportionment were proposed but one that we are particularly interested in is Hamilton's method because it is the only static method that satisfies quota rule, a condition that implies the sense of fairness. We will compare the apportionment methods of Hamilton and Grimmett and discuss other stochastic methods.

Presentation Index: H2 **Time:** 11:15
Department: Mathematics

Student Presenter(s)
Suzuki, Kumiko
Chandra, Cecilia

Faculty Sponsor(s)
Buske, Dale

(0,1)-Matrix-Vector Products via Compression by Induction of Hierarchical Grammars

A (0,1)-matrix is a rectangular matrix for which each element of the matrix has the value of either one or zero. The general matrix-vector product exhibits quadratic complexity. For a (0,1)-matrix, all of the multiplications are with the identity, thus requiring the counting of only additions. We note that only the product of a (0,1)-matrix with a general vector is under consideration. One property of matrix-vector product which we exploit is that each element in any one column of a matrix is multiplied by the same element of the vector. So, if an element appears more than once in a column, the scalar multiplication of that element with the respective vector element need be computed only once. Extending this idea, if a specific sequence of elements in one matrix row repeats in all of the same respective columns in another row, the inner product of those elements with the corresponding vector elements need be computed only once. These two matrix-vector product properties inspired the formulation of our objective: to identify and exploit the common subsequences in rows of the (0,1)-matrix towards the more efficient computation of a matrix-vector product. To identify the common subsequences, we utilize Nevill-Manning and Witten's SEQUITUR algorithm, an algorithm developed for lossless text compression which works in approximately linear time. This algorithm generates a context free grammar derived from repeated sequences. Since we need to unfold a matrix for SEQUITUR to process it, the time complexity is essentially big-O(MxN) for our problem. Although the application of this algorithm might not be as efficient as a single sequential differential scheme or even a single sparse general approach, the cost of the grammatical compression can be amortized profitably over the sequence of matrix-vector products.

Presentation Index: H3 **Time:** 11:30
Department: Computer Science

Student Presenter(s)
Webb, Aaron

Faculty Sponsor(s)
Anda, Andrew

Honeycombolgy and Fibonacci Identities

Imagine a honeybee crawling over the beehive. This bee has to go through the hexagon shaped holes one by one to reach the desired destination. Is there anyway to find out how many possible ways this bee could have gone to arrive his destination? Amazingly, we can apply the Fibonacci numbers to count the number of this honeybee's possible paths. The famous Fibonacci Identity $F(n+2) = F(n+1) + F(n)$ ($F(1)=1$, $F(2)=2$), can be proven easily by using this honeycomb and crawling bee. I am going to show many other more involved Fibonacci Identities can also be discovered by this smart bee crawling in the honeycomb.

Presentation Index: H4 **Time:** 11:45
Department: Mathematics

Student Presenter(s)
Sun, Kyung

Faculty Sponsor(s)
Huang, Danrun

Fibonacci Identities with Graphical Proofs

The Fibonacci numbers form the sequence 1, 1, 2, 3, 5, 8, 13, 21,…, which is defined recursively as $F(n) = F(n-1) + F(n-2)$ for $n > 2$, and with initial values $F(1) = F(2) = 1$. From the Fibonacci numbers, many identities are discovered. These identities can be proved using many different methods. Among a few, there are mathematical induction proofs, matrix and vector proofs, combinatorial proofs, and algebraic proofs. In this talk, I will show a method to prove many well-known Fibonacci identities using a simple graph with two vertices and three edges. By implementing the basic properties of the graph and defining some specific conditions, each identity can be proven through cycling the graph and applying some counting method.

Presentation Index: H5 **Time:** 12:00
Department: Mathematics

Student Presenter(s)
Maki, James

Faculty Sponsor(s)
Huang, Danrun

"Angle Pro" Siding Cutter Design

A local entrepreneur, owner of Gable Pro LLC, invented a product called the Angle Pro Siding cutter. He came to the SCSU engineering department to have a previous prototype of his invention that did not function properly reengineered for production and marketing. The goal of the project is to design the siding cutter to perform better than current products. The project involved many aspects of mechanical engineering, including mechanisms, machine design, material processing, and others as needed to complete the project. Upon completion of the project, Gable Pro LLC will have a product that will be very useful in the siding market by reducing noise, replacing costly electric equipment, and increasing productivity at the job site.

Presentation Index: J1 **Time:** 2:00
Department: Mechanical and Manufacturing Engineering

Student Presenter(s)
Riedner, Broc
Kliber, Anthony

Faculty Sponsor(s)
Yu, Warren

Injection Molding Lead Time Reduction Through Design of Experiments

Central Minnesota Tool, a manufacturer of stamped and molded parts based in Little Falls, is investigating their injection molding process. Lead time reduction, increased documentation, and an objective procedure(s) are the goals of the project. Our group is investigating the injection molding process through a series of designed experiments and developing a computer based system to implement findings. The results of the experiments will determine start-up procedures, identify key factors, and provide an understanding to the nature of defects. The knowledge gained will then be applied to an operator guidance program that will provide a feedback control, and document actions taken by operators.

Presentation Index: J2 **Time:** 2:15
Department: Mechanical and Manufacturing Engineering

Student Presenter(s)
Kern, Gabriel
Weber, Benjamin
Hoehn, Brady

Faculty Sponsor(s)
Baliga, Bantwal

An Investigation of the Teaching of Lewis Dot Structures in the First Year Chemistry Course

This investigation was conducted to identify how college students learn Lewis Dot structures. A content analysis was performed on textbooks and published journal articles in order to determine the different ways Lewis Dot structures are presented. Student surveys were given to introductory chemistry students to determine their knowledge about Lewis Dot structures. Interviews with instructors provided information on how they teach Lewis Dot structures and concepts with which students potentially struggle. Student subjects used the think-aloud method to solve Lewis Dot structures in order to gain insight into students understanding of Lewis Dot structures. The content analysis, student surveys, data from the think-alouds, and interviews with instructors provide the information needed to become aware of a student's weaknesses, strengths, and the process of learning Lewis dot structures.

Presentation Index: J3 **Time:** 2:30
Department: Chemistry

Student Presenter(s)
Erickson, Jessie

Faculty Sponsor(s)
Krystyniak, Rebecca

Investigation of Triplet State Sulfur Quenchers on the Quantum Yield of Phenyl Isothiocyanate

Isothiocyanates are simple organic molecules with the general formula R-NCS, where R can be any carbon-containing group. These molecules have shown relevant importance due to their natural abundance in biological systems and many green leaf vegetables. The ground state solution phase chemistry of these molecules has been extensively developed, however the excited state (photochemistry) has not. Therefore a mechanistic investigation of Phenyl Isothiocyanate (PITC) will be the focus of this work. When investigating photochemical reactions the first step of the process is to determine the quantum yield of the reaction. The quantum yield of a reaction is simply a measure of the efficiency based on the number of photons absorbed. Preliminary results suggest that upon photolysis of PITC at 254 nm two major products are formed. They are the corresponding iso-cyanide R-NC and a triplet state sulfur atom, however a competing reaction with the desulfurization reaction will occur and we can expect to see the back reaction to form the starting material. Therefore triplet sulfur quenchers such as cyclohexene are introduced to minimize the competing back reaction. There are many different triplet sulfur quenchers, which quench these triplet sulfur atoms at different rates. Thus the focus of this project has been to investigate the effect of different triplet sulfur quenchers on the quantum yield for the desulfurization reaction.

Presentation Index: J4 **Time:** 2:45
Department: Chemistry

Student Presenter(s)
Mondloch, Joseph

Faculty Sponsor(s)
Gregory, Daniel

Computational Study of Select Oxo-Vanadium Compounds

This study focused on using computational chemistry to develop equilibrium geometries of several vanadium-oxo(V-oxo) compounds with the acac ligand. Interest in V-oxo complexes arises from the effectiveness of certain V-oxo compounds in the treatment of diabetes. Previous research has developed possible conformations of the optimized geometry of V-oxo complexes providing a starting point for this work. Although these structures are close to equilibrium conformations, they are not correct and more investigation is needed to determine the correct conformation. What is known is the geometry around the V center associated with the acac ligand determined by highly accurate but expensive ab initio methodology. Conformations studied were structures that included substituents on the acac ligand. The conformational search utilized the less expensive semi-empirical PM3 Hamiltonian. This search focused on the various conformations of the substituents attached to the acac ligand while freezing the center to simplify calculations. The simplicity in the approximations of semi-empirical methods makes them faster and therefore more desirable as compared to more rigorous and time consuming ab initio methods that were employed for only final geometry determination. Focus of this talk will include the determination of select V-oxo geometries with method development being a key component in this project.

Presentation Index: J5 **Time:** 3:00
Department: Chemistry

Student Presenter(s)
Roskop, Luke

Faculty Sponsor(s)
Gregory, Daniel

A Critical Approach to Gender in Organizations

Critical theorists are interested in who in society holds the power, why those individuals hold the power, and what can be done to create equality within organizations. When looking at gender through a Critical approach, one notices the power tends to be held by men. Although women are becoming more common in the workforce (especially the corporate levels), they are still forced to either mold to the patriarchal establishment or limit the success they can achieve. Both options greatly decrease the amount of power women can hold in an organization. My thesis states that organizations are continuing to marginalize women through the positions they are offered and the way in which they are treated, though the organizations may be unaware. To address this problem, I will examine previous research and organizational analyses with a literature review. With a solid base established, I will then apply my thesis to a volunteer organization located in the upper Midwest to determine the presence and extent of gender bias in the organization. Finally, I will propose the emancipation of those being oppressed by the patriarchal bonds holding them back and encourage action to be taken to combat future instances of dominance, power imbalance, and oppression.

Presentation Index: K1 **Time:** 2:00
Department: Communication Studies

Student Presenter(s)
Sery, Joseph

Faculty Sponsor(s)
Daughters, Karyl

Communication in Close Male-Male Friendships in a University Setting

The literature examining gender and close friendships is somewhat inconclusive. Early literature argued that men's friendships were superior to women's friendships while more recent research claims that men are simply incapable of forming close, intimate friendships with the same adeptness as women. Disputing these claims, many all-male colleges and universities argue that the all-male environment provides a communication climate that is more conducive to the formation of close male-male friendships. While there is a wealth of research showing the benefits of single-sex institutions for women, very little research has examined the effects of a single-sex environment on men's relationships. The purpose of this study is to examine the relationship between the communication climate created by a single-sex college/university and its ability to influence, promotion or hindrance, the formation of close male-male friendships. Many of the measurement tools used to assess intimacy have been criticized for defining closeness and intimacy in feminine terms. Therefore, of this study uses a two-part measure of intimacy; one portion focuses on "intimacy through doing" while the other focuses on "intimacy through self-disclosure."

Presentation Index: K2 **Time:** 2:15
Department: Communication Studies

Student Presenter(s)
Spanier, Claire

Faculty Sponsor(s)
Daughters, Karyl

Self- Reported Drinking Behaviors of Members of a Sorority or Fraternity Compared to Non-Members at St. Cloud State University.

Society has stereotyped members of a fraternity and sorority as being heavy drinkers, but do members of fraternities and sororities really drink more than those that do not belong to a Greek system? The purpose of this study is to compare self reported drinking habits among Greek and non- Greek students at St. Cloud State University. A fifteen question survey was distributed equally among Greek and non- Greek students at St. Cloud State University. A paper presentation will review findings and conclusions.

Presentation Index: K3 **Time:** 2:30
Department: Educational Leadership and Community Psychology

Student Presenter(s)
Caine, Heather

Faculty Sponsor(s)
Jorgensen, Leeann

A Study into the Relationship between SCSU and the Local Community

A Public Relations research project conducted in the fall semester of 2004 delved into the relationship between St. Cloud state and the local community. The findings showed that the relationship between the local St. Cloud community and St. Cloud State University is affected by disruptive behaviors from college students that include littering, vandalism, and loudness. The relationship between the local community and SCSU is hindered by a lack of mediation, effective communication, or comprehension of the other side's perspective. The university does not present expectations of appropriate student actions in the local community. At this time there appears to be no action plan implemented to establish better communication or to instill in students an understanding of what appropriate behavior in the community entails. Another problem exists due to the lack of communication between SCSU and the community. SCSU students have a misconception that community members believe all students are disrespectful, a nuisance and excessive drinkers. When, in fact, many community members do not feel that most students are excessive drinkers at all. Many community members say that it is fine to drink; problems only arise when students become disrespectful of the community and private property when they drink in excess. The lack of clear communication of opinions, expectations, and problems has caused the two populations to become even further removed from each other. SCSU is missing out on opportunities to educate and encourage civic responsibility to students. By determining the problems, proposing solutions, and implementing solutions, the university will be in the position to teach students the importance of community involvement and responsibility. The university is also missing out on opportunities to benefit its own reputation locally and abroad by displaying its concern towards the community, as well as the involvement students have in the community.

Presentation Index: K4 **Time:** 2:45
Department: Mass Communications

Student Presenter(s)
Peterson, Debbie
Schwitzer, Heidi

Faculty Sponsor(s)
Przytula, Tomasz

Latino(a) in Media

Latinos(as) in Media is a research paper that discusses the Latino(a) media in the U.S., focusing especially on the Midwest. The presentation will examine what affects Latino(a) media. The presentation will also explore different types of media, including newspapers and television, and discuss how this media is customized for the Latino(a) population. The presentation will discuss the stereotypes and barriers that the Latino(a) media must deal with. The presentation will also discuss issues that surround Latino women in the mass media arena. The presentation will conclude with what changes must be made in order to include Latinos(as) in media and media production.

Presentation Index: K6 **Time:** 3:15
Department: Mass Communications

Student Presenter(s)
Nesshengel, Marleny

Faculty Sponsor(s)
Dick, Marie

What Baby Boomers Want in Retirement

The baby boomer generation consists of individuals born between 1946 and 1964 whose retirement is rapidly approaching. The United States is witnessing the greatest population of retired people in its history. This poses the question, what do baby boomers want in retirement? This research asks that question as well as looking at what activities and programs could be provided by the Whitney Senior Center in St. Cloud. It also looks at the stigma created by the word "senior" and what effects that has on participation in Whitney Senior Center programming.

Presentation Index: L1 **Time:** 2:00
Department: Sociology and Anthropology

Student Presenter(s)
Greathouse, Maren
VanLanduyt, Lisa
Lourey, Jessica
Hansen, Melissa

Faculty Sponsor(s)
Havir, Linda

Development/Administration of College of Social Sciences Re-Accreditation Survey

St. Cloud State University is in the process of being re-accredited by the North Central Accreditation Body in 2007. A voluntary group of Industrial Organizational (I/O) Psychology graduate students developed along with Associate Dean Williams a survey to obtain information regarding our college alumni. This information is viewed as useful for the re-accreditation process. As I/O Psychology graduate students, our knowledge and training in survey development and statistical analysis were desired for the purpose of this project. We accomplished the tasks necessary for re-accreditation by creating a survey consisting of demographics, current employment status, overall SCSU experience, and much more. We will discuss our experiences and challenges involved in the process of creating the survey, gathering the data, and interpreting the results.

Presentation Index: M1 **Time:** 2:00
Department: Social Sciences

Student Presenter(s)
Stiles, Paul
Kuettner, Dave
Kinsella, Tracy
Shrestha, Sangeeta
Kuehler, Joshua
Phang, Chin-Sien

Faculty Sponsor(s)
Williams, Carolyn

Swainson's and Ferruginous Hawk Nesting Ecology in North Dakota

Swainson's (*Buteo swainsoni*) and ferruginous hawks (*B. regalis*) are two grassland raptors that have shown recent declines in parts of their range. These declines may be related to habitat loss or decreases in Richardson's ground squirrels (*Spermophilus richardsonii*), a primary prey species for both hawks. These raptors are species of conservation priority in North Dakota, but current distribution and habitat associations in the state are unknown. My goal is to aid managers in conserving Swainson's and ferruginous hawks by documenting breeding ecology across the state. In summer 2004 I performed road surveys of selected townships east of the Missouri River and located 36 occupied ferruginous and 89 occupied Swainson's hawk nests. Highest densities were found in the Northwestern Glaciated Plain ecoregion, where land use is mostly grazing and hayland. Grassland appears to be an important habitat feature for both species, though more so for ferruginous hawks. I used ArcGIS 9 to analyze land cover within 1 km of nests. On average, ferruginous hawk nests were surrounded by more prairie and less cropland than Swainson's hawk nests. The majority of ferruginous hawk nests were found in areas of 0-30% cultivation, while cultivation around Swainson's hawk nests ranged from 0-90%. In summer 2005 we will survey west of the Missouri River. I will combine results from both years to create habitat selection models using nesting habitat and prey species data. Habitat selection models will help identify areas of crucial breeding habitat for these hawks in North Dakota. Managers may be able to develop a long term monitoring program by adapting my methodology.

Presentation Index: N1 **Time:** 2:00
Department: Biological Sciences

Student Presenter(s)
McCarthy, Clara

Faculty Sponsor(s)
Restani, Marco

Effects of Blue Cohosh (*Caulophyllum thalictroides*) and Red Clover (*Trifolium pratense L.*) on Rat Smooth Muscle Contractility

Herbal extracts have historically been used to both stimulate and inhibit smooth muscle contractility. However, little work has been done to examine the effects of specific extracts on isolated smooth muscle tissue. *Caulophyllum thalictroides* (blue cohosh) has traditionally been used by nurse midwives as a natural alternative to increase uterine contractions at the time of parturition. We hypothesized that an extract of this plant would stimulate uterine contractions. Evidence suggests that *Trifolium pretense L*. (red clover) possesses estrogenic properties. Therefore, we hypothesized that an extract of this plant would elicit uterine contractions. In this study, we measured the individual effects of blue cohosh and red clover on isolated rat uteri on the day of proestrus. We will report the dose response curves on uterine contractile amplitude and frequency as compared to the effects of the solvent dimethylsulfoxide (DMSO) in a crossover design. We will also examine herbal effects on tracheal smooth muscle, as red clover has been used to treat whooping cough and other respiratory problems and may be applicable to other smooth muscle disorders.

Presentation Index: N2 **Time:** 2:15
Department: Biological Sciences

Student Presenter(s)
Becker, Marc

Faculty Sponsor(s)
Tubbiola, Maureen

Allelochemical Interactions: Effects of Agricultural Crops on Wetlands

The study of plant allelochemicals has recently emerged as an important field in plant science. These naturally produced compounds are given off by some plant tissues, and can exert a great influence on the growth and development of neighboring plants. Allelochemicals exist as compounds both in plants as well as in exudates given off through stomata and root hairs. These chemicals can and often do interact not only with other plants, but also with the soil and air around them. While recent studies have focused on allelochemicals of agricultural crops, weeds, and their suppressive or stimulating effects, the study of allelopathic effects in the natural environment has been overlooked. Today, as more agricultural land is returned to a natural state, a greater understanding of allelochemical interactions between upland crops and wetland plants is increasingly important. Furthermore, no one has yet proposed or published a study on the interactions between these crops in relation to the establishment of wetlands. The focus of this paper is to examine the current literature on crop allelopathy, as well as to present an outline for a study on the allelochemical interactions between crops and wetland plants. As farmers restore wetlands to increase soil fertility and add organic matter, having in-depth knowledge about allelopathic interactions between plant communities will play an important role in the future of agriculture. By reducing limiting factors for plant growth and discovering and isolating allelochemicals released by crops, scientists and farmers can hope to attain greater yields and increase farmland productivity.

Presentation Index: N3 **Time:** 2:30
Department: Environmental and Technological Studies

Student Presenter(s)
Walseth, Brian

Faculty Sponsor(s)
Bender, Michner

Automated Feed Mechanism

In a joint effort between Whirltronics Inc., a local manufacturer, St. Cloud State University engineering department, and a design team consisting of senior level Mechanical Engineering students we are working on solving a product flow problem that Whirltronics Inc. desires to improve. The need to implement a more efficient system is desired to enhance the productivity of the line. The line consists of a blade sharpening system, a loading system, and a forming press. The mechanical loading system is the area of interest to the design team.

Presentation Index: N4 **Time:** 2:45
Department: Mechanical and Manufacturing Engineering

Student Presenter(s)
Ries, Michael
Shogren, Phillip
Spearman, Brian

Faculty Sponsor(s)
Bekkala, Andrew

Development of an ELISA-based System for Detecting Vitellogenin in Fathead Minnows

Endocrine disrupting compounds (EDC's) are thought to disturb the normal hormonal pathways of organisms. This class of compounds is quite numerous, and several have been identified as being in the water supply and, therefore, possibly affecting fish and aquatic life. Research here at SCSU is focused on such compounds and their effects on fathead minnows (*Pimephales promelas*), with several endpoints of study, including vitellogenin (Vtg). Vtg is an egg yolk protein produced by female fish in response to circulating levels of estrogen. Male fish also respond by producing Vtg after exposure to estrogen, allowing the protein to be used as a marker of exposure. Detection of Vtg relies primarily on immunological methods, such as the ELISA. Currently available methods utilize antibodies created against carp Vtg that have cross-reactivity with fathead minnow Vtg. To bring vitellogenin detection, a benchmark of toxicology research on EDC's, in-house here at SCSU, this project undertakes the development of a reliable assay for the detection of Vtg in blood of fathead minnows. Utilizing commercially available antibodies in an ELISA format, detection of Vtg in fathead minnows has been reproducible. Research is currently ongoing in the development of a monoclonal antibody for incorporation into the assay.

Presentation Index: N5 **Time:** 3:00
Department: Biological Sciences

Student Presenter(s)
Bartell, Steve

Faculty Sponsor(s)
Woodard, Janet

Reproductive Consequences of Environmentally Relevant Exposures of Fathead Minnow Larvae to Alkylphenol Polyethoxylates

Fathead minnow larvae, less than 24 hrs old, were exposed for 64 days to a complex mixture of alkylphenol polyethoxylates which models the alkylphenol component of major metropolitan sewage treatment plant effluent. The exposure utilized a flow-through system, designed to deliver consistent concentrations of applied chemicals. Water was supplied by a well and monitored throughout the exposure period. Water chemistry did not reveal any unusual conditions throughout the exposure. Following exposure, larvae were allowed to mature for four months in a similar flow-through, well supplied system. Upon sexual maturation, exposed male fish where allowed to compete with similarly reared, control males in a competitive spawning assay. Nest holding ability of control and exposed fish was carefully monitored for seven days. Here, the ecological significance of the effects of exposure to environmental estrogens can be clearly evaluated. All male fish were then sacrificed and analyzed for vitellogenin synthesis, differences in the development of secondary sexual characters, developmental changes as measured by histology, and morphometric changes. Detailed results will be presented at the colloquium.

Presentation Index: N6 **Time:** 3:15
Department: Biological Sciences

Student Presenter(s)
Bistodeau, Travis

Faculty Sponsor(s)
Schoenfuss, Heiko

More Than Just Fabric: Feminism and Islam

Western feminists have taken a fairly dim view of Islam, with many condemning the practices as oppressive. Veiling, like many other traditional practices, has a specific history, context, and meaning. It is important for feminists to view the broad and complete picture of issues, like veiling, in order to dismantle an Eurocentric, essentialist paradigm. To that end, this paper will discuss some of the history behind veiling, some of the experiences of women in the United States who are choosing to convert to Islam, and offer critiques of some feminist approaches to these subjects. The experiences of women who veil in the United States depend on the woman's race, location, language, class, and ethnicity. Feminists need to set aside essentialist statements in favor of experiential, multiple, inclusive frameworks for theory.

Presentation Index: O1 **Time:** 2:00
Department: Women's Studies

Student Presenter(s)
Dwyer, Cecelia

Faculty Sponsor(s)
Berila, Elizabeth

What Islam Has Brought to the Modern World

Since its beginnings, Islam has encouraged the pursuit of knowledge and understanding of the intricacies of the natural world. Ancient Muslims made many medical, scientific and mathematical discoveries that make our modern world possible.

Presentation Index: O2 **Time:** 2:15
Department: Foreign Languages and Literature

Student Presenter(s)
Laingen, Kristina

Faculty Sponsor(s)
Splittgerber, Lisa

Arabic Influences in the Modern World

Arab influences over the modern world have been apparent as far back as their beginning cultures go. Recognizing their contributions to the world is sometimes unheard of. During times when many Americans feel uncomfortable around cultures with Arab backgrounds, it's important to acknowledge the wonderful and unparalleled inventions Arab cultures have given to the modern world. Many of the Arab contributions in this paper stem from the Arab rule over Spain dating from the 700's to 1492 A.D., a time that is also dedicated to initiating the Renaissance over Europe.

Presentation Index: O3 **Time:** 2:30
Department: Foreign Languages and Literature

Student Presenter(s)
Peterson, Jaclyn

Faculty Sponsor(s)
Splittgerber, Lisa

Ottoman Empire

Abstract not available at this time.

Presentation Index: O4 **Time:** 2:45
Department: Foreign Languages and Literature

Student Presenter(s)
Egan, Lindsey

Faculty Sponsor(s)
Splittgerber, Lisa

Politics in Third World Countries : Darfur Conflict in Sudan

For the past 30 years, Sudan has encountered numerous political, social, cultural and religious upheavals based on the North and South dimension. What is Darfur conflict all about? This paper will explore the background to the history of ethno-religious conflict in Sudan. I will also discuss the recent ethnic and religious conflict taking place especially in Darfur region of the western Sudan. This research paper will point the nature of the conflict and the role played by Islamization in sparking this conflict. While looking in this paper, I will examine the background to the rise of the conflict including causes, course, political parties involved, and the results. It provides answers to conceptual questions related to marginalized citizens of the southern Sudan and explaining the meaning of the south and north. For example; is ethnicity the major concept shaping the conflicts in Sudan? How does the growth of strong "Arab Characters" play a vital role in ongoing conflict in Sudan's western region and other regions? This paper will also discuss the policies imposed by Egyptian and the British government prior to the independence and the southerner's political, social, and cultural experiences post-independence. I will examine the role played by international organizations such as the UN, World Food Program, Amnesty International, CARE International etc and other charitable organizations in resolving such trauma facing the refugee tale across the boarder.

Presentation Index: O5 **Time:** 3:00

Department: Political Science

Student Presenter(s)
Juma, Peter

Faculty Sponsor(s)
Greaves, Edward

United States Golf Courses

There have been some extensive changes in the number of golf courses in the United States over the last 100 years. In 1900 there were less than 1000 golf courses in the United States, most of which surrounded large eastern cities. Today there are over 17,000 golf courses in the United States. Golf courses can now be found in every region of the United States regardless of that region's population. The purpose of this research is to explore the distribution of golf courses in the United States in relationship to population, climate, and wealth. The number of golf courses in each state will be compared to that state's population and climate conditions. This research should help determine the distribution of United States golf courses.

Presentation Index: P1 **Time:** 2:00
Department: Geography

Student Presenter(s)
Schutz, Nathan

Faculty Sponsor(s)
Leppman, Elizabeth

Population Growth in Clark County, Nevada: Las Vegas

The purpose of this research project is to identify and expose the major components that are fueling growth in Clark County, Nevada. There will be some degree of focus on the Las Vegas Metropolitan Statistical Area and other towns within Clark County. Demographic trends, such as age and racial background, detailing the make up of the population and incoming population will be represented through data which will identify who is moving to Clark County. Key growth components and factors will be revealed providing reasoning for the dramatic increase in population growth. Predominant industries and the changes in growth in different economic sectors will provide contributing data to the population growth. The effects of the large surge of growth and the impact on the county will also be explained.

Presentation Index: P2 **Time:** 2:15
Department: Geography

Student Presenter(s)
LoBue, Jason

Faculty Sponsor(s)
Leppman, Elizabeth

The Effect of Woodside Communities Development on Farmland Prices Near Clearwater, Minnesota

Realtors determine the price of a property by comparing it to similar properties in nearby areas; if an open field is sold to a developer, rather than someone who intends to keep the land in agriculture, does this impact the price of land to be sold in the future? This paper uses current listing prices and past sales prices to explore the effect new residential development has on farmland prices. The area of study includes farmland within a three-mile radius of the newly constructed Woodside Communities development in Clearwater, MN. Data was collected from surveys to farmers within the three-mile radius, sales prices from county courthouses, and current listing prices from interviews with listing realtors. Possible outcomes may include no difference in the price of farmland, an even rise in farmland prices, or a rise in farmland prices nearest to the development that become less evident the further from the development the land is located.

Presentation Index: P3 **Time:** 2:30
Department: Geography

Student Presenter(s)
Janski, Sara

Faculty Sponsor(s)
Leppman, Elizabeth

An Examination of Natural Areas of Moscow, Paris, and London

As populations worldwide move toward metropolitan areas, the demand for land suitable for development for commercial, industrial, and living space increases. This influx and urban change has put an enormous strain on local ecosystems. The cities of Moscow, Paris, and London are no exceptions. The natural areas of these cities provide recreational opportunities and critical habitat for many species of flora and fauna. Moscow has been touted as the "Greenest" city in Europe because of the unique green area surrounding the city. London and Paris also have many areas of natural habitat. The history and geography of each of these cities is well known, but the urban planning issues surrounding the development of the natural areas, and the environmental and social issues that were involved in the delineation of these natural areas are not as well explained. This paper will attempt to statistically quantify and compare the areas of each of these cities that are considered to be green or natural areas on the basis of each cities historical development and the urban planning issues that were a part of this process.

Presentation Index: P4 **Time:** 2:45
Department: Geography

Student Presenter(s)
Mattinen, Eric

Faculty Sponsor(s)
Leppman, Elizabeth

A Historical Geographic Analysis of Resorts in Itasca County Minnesota

The historical geographic analysis of resorts in Itasca County Minnesota, examines the change in the number of resorts located within this county. The time span examined in this case starts in the 1970s and reaches to the present. Analysis of the resort numbers are shown with illustrated maps depicting the location of the resorts in Itasca County. Along with this spatial analysis of resorts the incorporation of basic statistical analysis of resort numbers shows the change over thirty-five years of the Itasca resorts. Other sources of relevant information include historical documents of resort advertisement and current activities in advertisement used by the resorts. These two differences are compared and give insight to the current situation confronting Itasca County resorts in the present and in the future.

Presentation Index: P5 **Time:** 3:00
Department: Geography

Student Presenter(s)
Larson, Chris

Faculty Sponsor(s)
Leppman, Elizabeth

SCSU Students and Political Tolerance

Political tolerance is the willingness to extend basic rights and civil liberties to persons and groups whose viewpoints differ from one's own. This idea was examined by the St. Cloud State University (SCSU) Survey in its annual spring survey of current SCSU students. 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 topics involving the rights granted by the 1st Amendment of the Constitution, to the specific, when it came to the most recent homecoming court. In between, students were asked about various controversial groups and whether they personally would allow these groups to give a lecture on campus. Join us as we both share and examine what we have measured in respects to the students of our university.

Presentation Index: Q1 **Time:** 2:00
Department: Political Science

Student Presenter(s)	**Title**
Fox, Mike Gauthier, Stacy	*Direction of Saint Cloud State*
Lunser, Jason Kahler, Nicole	*Homecoming*
Lohrman, Sara Severson, Nicole	*MGM Courses*
Phan, Ngoc Oldakowalski, Sara Mattison, Josh Springer, Stacey	*Political Tolerance*

Faculty Sponsor(s)
Frank, Stephen
Hammes, Michelle Kukoleca
Wagner, Steven

Nutritional Assessment of SCSU Students

Student Health Services on campus has proposed for a nutritionist to be available to students on campus. A written survey of 8-10 questions focused on weight control, physical activity and eating habits was distributed to a total of 32 randomly selected students on 11/17/04. Eighteen females and 14 males ranging in ages 18-29 participated in the survey. Analysis results of survey conducted at Saint Cloud State University (SCSU) concluded that ~ 75% of SCSU students do not consume an adequate amount of fruits and vegetables per week, 80% of students are interested in having a nutritionist on campus, over 90% of students are concerned about weight control and 44% think they are overweight. From our survey 75% of students reported that the accessibility of healthy food choices on campus was only slightly accessible or not accessible at all. All students expressed an interest in weight control, physical activity, and healthy eating. Through analyzing this survey and the SCSU Executive Survey we were able to conclude that there is a need for an increase in education and resources on nutrition.

Presentation Index: R1 **Time:** 3:00
Department: Nursing Science

Student Presenter(s)
Santiago, Helen
Borgert, Melanie
Willert, Sara

Faculty Sponsor(s)
Lenz, Brenda
Nordell, Janis

D2 Receptor Gene Research Concerning Addiction

A professional literature review was conducted to assess the reported relationship between the D2 receptor gene and people with addiction. Twenty five professional journal articles relating to genetics and addiction with the emphasis on the D2 receptor gene were reviewed. After examining the literature, there were numerous findings to support the role of genetics in addiction and findings to specifically support the D2 receptor gene theory. There were also numerous findings that went against the D2 receptor gene theory. The articles agreed that genetics and the environment play a role in addiction, but a defining answer has not yet been determined.

Presentation Index: R2 **Time:** 3:00
Department: Educational Leadership and Community Psychology

Student Presenter(s)
Peterson, Garret
Rono, Saasha

Faculty Sponsor(s)
Jorgensen, Leeann

Setting the Truth Straight about Stem Cell Research

Assumptions and misconceptions in the general public are rampant when it comes to scientific research. The research regarding stem cells is one such area riddled with half truths and myths. Currently, not everyone knows the whole story about this highly controversial issue. The poster presented fills in the blanks about aspects that may be unknown or unclear to the general public. It explores the noteworthy accomplishments of the growing technology as well the technical aspects behind it. The controversial issues of whether or not this research is ethically sound and who should be funding the research are also present. The poster also ponders about the many possible futures of stem cell research. Aside from the in depth information, a timeline is present to allow for a quick overview of the subject at hand. The results of a survey conducted within the SCSU student body are presented to demonstrate the current knowledge of the subject. Everyone has an opinion and a voice to express it. Whether that opinion is based on fact or myth does not matter, that voice will be heard. The truths about this potentially life-altering research must be set straight.

Presentation Index: R3 **Time:** 3:00
Department: Environmental and Technological Studies

Student Presenter(s)
Plante, Adam
Krekelberg, Elizabeth
Dold, Ashley
Flint, David

Faculty Sponsor(s)
Kasi, Balsy

The Changing Face of a Village: Sällemåla, Sweden

Sällemåla, Sweden, is a small village in southern Sweden 20 miles north of Karlskrona. The winding roads, large oak trees and the long stone fences give the place its charm. It transformed from a large scale farm with many workers in the 1600's to presently being divided into half a dozen residences and a couple of hobby farms. Reconstructing the residences and the barns that once existed reveals much about the culture of the time. Looking at birth records one can populate the village and bring it to life. Changes in population shape the physical features of Sällemåla. Some of the specific aspects which will be examined include both cultural changes and alterations to the landscape. This was done through historic as well as current maps, aerial photography, interviewing life-long residents who are knowledgeable of the area and rudimentary archeology. Many patterns are revealed through the use of GIS or Geographical Information Systems.

Presentation Index: R4 **Time:** 3:00
Department: Geography

Student Presenter(s)
Larsen, Karl

Faculty Sponsor(s)
Leppman, Elizabeth

Development of the Media in Bangladesh: An Overview

The concept of mass media in Bangladesh has been evolving since the country's independence in 1971. Historically viewing, between 1971 and 1990 a number of autocratic and military governments had supreme control over any democratic practice in which, the media essentially played into the hands of the then government for a while. With the rise of democracy in 1990, the last autocratic regime lost its authoritarian control over the media. Structurally, over the decades the influence of globalization has shaped the media system into a more libertarian model and has infused the ideals of “self-righting process of truth” and “free market place of ideas.” This research looks at how Bangladesh has moved from state dominated sectarian media with a single message to varieties of media and alternative sources for people seeking information and change. The research has been completed to create an overview of the Bangladeshi media to trace out how they have evolved since independence and it provides a picture about the present situation. A detailed content analysis provides synopsis of five major Bangla dailies and three major English dailies in Bangladesh from March 1 to March 31, 2005. The paper also analyzes the news programs of the three major TV channels during the same period of time. The current Bangladeshi media are not above question or criticism; the findings appear deeply consistent with the suspicion of political bias in nearly all the media.

Presentation Index: R5 **Time:** 3:00
Department: Mass Communications

Student Presenter(s)
Akhunji, Bakhtiar

Faculty Sponsor(s)
Huntzicker, William

Estimated Cometary Rotation Periods from Optical Images

Comets are some of the oldest objects in the solar system; remnants left over from when the planets formed billions of years ago. One of the ways to study the early solar system is to observe material ejected from comets and use the data to constrain models of cometary behavior. Using a Meade 16-inch telescope and an Orion 8-inch telescope, both with an Apogee Ap-7 CCD camera, optical images of the comets C2001/Q4 "NEAT" and C2004/Q2 "Machholz" were obtained by the St. Cloud State Comet Watchers group. The data were reduced and combined, and spatial filters were applied with NOAO's Image Reduction and Analysis Facility software (IRAF). The data were then analyzed for structure and change over short timescales. Rotation rates of the nuclei are estimated, and structure of the tail and inner coma are discussed for the two comets.

Presentation Index: R6 **Time:** 3:00
Department: Physics, Astronomy and Engineering Science

Student Presenter(s)
Stanley, Todd
Gesmundo, Matthew
Nestor, Kyle
Choi, Sung Yeol

Faculty Sponsor(s)
Womack, Maria

Sensor Based UGV

There are many situations in which humans are put in danger. Soldiers and police officers accept danger as part of their job. Soldiers have to deal with enemy soldiers, weather conditions, land mines, and various other elements. Police encounter hostage situations and armed felons. Making their job safer is the least we can do for those who keep us protected everyday. But what can we do to prevent injury or even death to our soldiers and police officers? Our solution is to build an unmanned ground vehicle or UGV which the user would control from a remote location away from the robot. The robot would be able to get a visual of the hazardous location, report environmental conditions, and if necessary immobilize any opposition. This would reduce the amount of danger that our soldiers and police officers are in by surveying the area before they infiltrate the position. The design requirements for the UGV are laid out by General Dynamics, our sponsor for the project. First it must be able to operate without a line of sight to the base station. In order to do this a video camera with the ability to pan, tilt, and zoom will be fitted on the robot. Second, the robot will operate at least 100 feet from the operator. A pair of high power transceivers will be used to send data to and from the robot. Also, for video, a video transmitter mounted on the robot will send video to the base. Also the operator will need to know where the robot is so a GPS unit will be mounted on the robot. Finally, in order to mark where we have been and as a means to disable any resistance found the robot will have a paintball marker mounted on the pan-tilt mechanism.

Presentation Index: R7 **Time:** 3:00
Department: Electrical and Computer Engineering

Student Presenter(s)
Nunn, Rob
Hennessy, James
Dukowitz, Jeff

Faculty Sponsor(s)
Heneghan, Michael

Snowplow Technology

Operating a snowplow is a difficult and dangerous task. The snowplow driver faces difficult environmental problems including icy roads, blowing and drifting snow, and vision problems due to the blowing snow, darkness, etc. Many of the problems faced by snowplows also affect heavy trucks, buses, ambulances, police vehicles, etc., which are also required to operate in all weather conditions. The results from the work proposed in this can also be applied to these vehicles. The work here will set the stage for soliciting additional outside funding from the National (FHWA and NHTSA) Intelligent Vehicle Initiative (IVI) in the area of specialty vehicle platforms. Although identified specifically by the specialty vehicle committee, these technologies have application to heavy, commercial and transit vehicles as well. This technology is currently tested in Minnesota and what they need is a snowy year!

Presentation Index: R8 **Time:** 3:00
Department: Environmental and Technological Studies

Student Presenter(s)
Bruemmer, Mark R.

Faculty Sponsor(s)
Kasi, Balsy

Employee Recruitment Plan

Our project consisted of creating a sourcing, assessment, and selection plan for filling the position of Senior Vice President of Human Resources. Our goal was to develop a plan that would allow the organization to hire top talent for this position while remaining within a strict operating budget. The first step of the plan involved researching the position and creating a position description that would serve as the foundation for the rest of the process. Using this platform to build from, we were able to ensure the availability of a high quality candidate pool by selecting the advertising channels and ads that would be most effective in sourcing and attracting strong talent for filling this position. Once we selected our candidate pool, we chose three criteria to narrow our choices: interviews, background checks, and aptitude and vocational interest testing. We then created a detailed plan illustrating how many candidates would advance throughout the different stages of selection process and how finalists would be chosen. The tests we used were researched thoroughly and chosen based on the criteria they measure relative to the position we were filling. The final candidate, after passing a background check and drug test was offered the position. Once the final candidate was offered and accepted the position, a welcome and orientation process was designed to accelerate the entrance of the new team member into the organization. This involved extending the offer to the selected candidate, creating an orientation to company staff and structure, and sending thank-you letters to the other candidates that applied. Our Team found that having a detailed plan, creative advertising, and asking the right questions during the interview process are essential elements in finding and hiring the best candidate for the position.

Presentation Index: R9 **Time:** 3:00
Department: Management

Student Presenter(s)
Kraatz, Brian
McMahon, Erin

Faculty Sponsor(s)
Davis, Elaine

The Wireless Multi-purpose Traffic Count System

Atwood Memorial Center (AMC) is at the heart of activities of the St. Cloud State University campus. AMC is home to more than 200 student organizations and their activities, various food courts, meeting rooms, a copy center, and recreation facilities making it the busiest place on campus. AMC is the community center of the university, serving students, faculty, staff, alumni and guests. Our project is a custom-designed system that effectively and cost efficiently meets the requirements and needs of AMC. The project is a traffic count system for AMC. The system uses optical sensors placed at each door to detect when a person walks through it. This information is then channeled to a substation which does the necessary data manipulation before transmission via a wireless link to a central hub that stores the information in a database that can be monitored by the administrator. The administrator will have the option of displaying or graphing the data from each remote entrance and manipulating that information as needed. The system is capable of counting inbound and outbound traffic in a realistic manner to ensure a good estimate of the number of people that pass through AMC.

Presentation Index: R10 **Time:** 3:00
Department: Electrical and Computer Engineering

Student Presenter(s)
Bello, Leye
Ahmed, Faisal
Ekinde, Kingsley

Faculty Sponsor(s)
Vogt, Timothy

A Multi-Featured Audio System

A multi-featured audio system is an electrical system that offers features such as multiple inputs, a wireless bass, treble and volume control and an LED Equalizer display. Usually, a stereo system could be bought from a department store. However, the specifications of the system that we are designing will be better than a regular home stereo with respect to distortion of the output power. The design areas of this project are: (1) Pre-Amp Stage: this will consist of analog low pass filters to remove the unnecessary frequencies above 20 kHz and below 20 Hz. (2) Control Stage: this stage will be comprised of several kind of filters that will control the volume, bass, and treble. Also it will control the balancing of the speakers. (3)Amplifier stage: this is going to amplify the final signal coming out of the filters onto the speakers. (4) LCD display: this is going to involve a microcontroller that will display the intensity of volume versus frequency on a LCD display. This will be done by converting our analog signal into a digital signal and later displaying it on a LCD on a scale of 1 to 10. (5) LED Stage: this is going to involve an array of LEDs that are going to light up depending upon the intensity of the volume in a given frequency range. (6) Power Supply Design: negative and positive 10V supply. The goal is to exceed the specifications of other manufacturer's designs at a comparable price. This goal will be achieved by adding various features to the audio system, the detail of which have been mentioned above.

Presentation Index: R11 **Time:** 3:00
Department: Electrical and Computer Engineering

Student Presenter(s)
Srivastav, Rishi
Chishti, Muhammad
Wagle, Prajesh

Faculty Sponsor(s)
George, Peter

Study of Racial Profiling in Saint Cloud Police Stops

One of the major concerns in the study of racial profiling is to devise an adequate benchmark against which to measure the rate at which police are pulling over, searching, or arresting minorities. In this study, designed in conjunction with the St. Cloud Police Department and SCSU, data of drivers' race and gender are taken from eight St. Cloud intersections. These data are compared with actual traffic stop data from motor vehicle violations, provided by the St. Cloud Police Department. Comparisons of race and gender characteristics of the two data sets are made, to determine if significant differences exist. A significant difference in the distribution indicates a potential problem related to racial profiling.

Presentation Index: R12 **Time:** 3:00
Department: Statistics

Student Presenter(s)
Chandra, Cecilia

Faculty Sponsor(s)
Onyiah, Leonard

Another Mother to Love a Baby: Surrogacy and Deviance

Surrogacy is often an ignored topic. Little is heard on this subject because research and writings on this contentious issue are scarce. Only when a surrogate is accused of breaking her contract, deciding she cannot give up the child she has carried to term, does the public hear the sensational and negatively biased stories about this practice. Because these surrogate mothers are seen as violating gender, sexual and maternal norms, they are subjected to various forms of social control in both their public and private lives. Through personal narratives and responses from a questionnaire, surrogate mothers revealed their main reason for being one, and that is because they enjoy the experience of being pregnant. They use religion and personal stories as secondary reasons to explain why it was important for them to become surrogates. In discussing their disappointment with the views of others on surrogacy, these women explain why surrogacy is important to not only themselves, but the intended parents of the baby.

Presentation Index: R13 **Time:** 3:00
Department: Sociology and Anthropology

Student Presenter(s)
Freeberg, Martyne

Faculty Sponsor(s)
Scheel, Elizabeth

The Interactive Effect of Job Characteristics and Self Efficacy on Perceived Stress

This study will examine how the individual characteristic of self-efficacy interacts with job characteristics in a worker's likelihood of experiencing stress. Workers are frequently asked to perform well (make decisions, complete a new task) under time pressure. Current researchers are placing more emphasis on the influence of individual differences in perceived stress and the way in which it is handled. This study seeks to extend the current understanding of the factors that influence job-related stress by taking into account differences in self-efficacy under conditions of job control and task complexity, and how this might influence perceived stress. Participants were brought into a lab and asked to complete a task two levels of complexity and control. Self-efficacy, perceived stress, and heart rate were measured.

Presentation Index: R14 **Time:** 3:00
Department: Psychology

Student Presenter(s)
Stachowski, Alicia

Faculty Sponsor(s)
Kulas, John

Integrating Theory and Practice in Manufacturing Classes

Students learn better when theory is integrated with meaningful practice. Doing something, or seeing it done (demonstrations, industry visits), underscores what they learn from classrooms. Some examples of integration will be provided. However, it should be noted that proper balance of theory and practice is necessary for a successful student/faculty experience in the classroom and lab. Appropriate balance of theory and practice will lead to a well-rounded graduate who is better prepared to meet the needs of the industry.

Presentation Index: R15 **Time:** 3:00
Department: Environmental and Technological Studies

Student Presenter(s)
Jarvi, Peter

Faculty Sponsor(s)
Kasi, Balsy

Genomic Analysis of Human Breast Adenocarcinoma MCF-7 Cell Line Resistant to Ottelione

Ottelione A is a natural product with strong anti tumor activity. Currently the molecule is undergoing clinical trials for the treatment of solid tumors. The mechanism by which *ottelione A* neutralizes tumor cells is not clear, however it is known to inhibit the polymerization of tubulins which is a quintessential component of cell division. Our ultimate goal for this research project is to establish the mechanism by which ottelione A exerts its anticancer activity. In this regard we have developed a human breast carcinoma, MCF-7/0 subline, viz; MCF-7/ottA, resistant to *ottelione A*. Our specific goal for this research proposal is to understand the alteration in molecular targets in the cell which in turn will lead to a better understanding of the mechanism of action of the anticancer agent ottelione A. In our quest to get a better understanding of the workings of ottelione A, we are using a genomics approach as our modus operandi. Accordingly our objectives for this proposal are as follows.

1. Isolate total mRNA from the parent MCF-7/0 and resistant MCF-7/ottA cells.
2. Determine the differential expression of mRNA in MCF-7/0 and MCF-7/ottA cell by microarray analysis.
3. Correlate the function of differentially expressed mRNA to various metabolic and signal transduction pathways to establish how ottelione A inhibits tumor cell growth.

Presentation Index: R16 **Time:** 3:00
Department: Chemistry

Student Presenter(s)
Ghose, Shourjo

Faculty Sponsor(s)
Sreerama, Lakshmaiah

School Factors and Childhood Obesity

A convenient non-randomized study consisting of interviews in either person or via telephone was conducted between November 22 to December 01, 2004. Those participating in the study met the following criteria: public schools within the Wright County School district and grades 6 through 8. Those excluded consisted of private schools, public schools outside Wright County School district, and grades other than 6 through 8. The purpose of this study was to assess if public schools contributed to childhood obesity. To measure the findings a piloted survey was utilized consisting of 8 ordinal questions and 2 nominal questions. Findings from the survey indicated consistent differences between the three grade levels regarding extra curricular activities, alternatives to the school hot lunch program, availability of vending machines, and lack of school policy monitoring childhood obesity. Based on the findings, the following was proposed: educating school board members, teachers, nurses and those involved in curriculum decision making on the importance of consistent physical education, monitor alternative choices available to students to assure RDA guidelines are met and that alternative choices to school hot lunch program will be consistent with USDA dietary guidelines. Results of the study along with proposed interventions were shared with employees of the Wright County Public Health Department.

Presentation Index: R17 **Time:** 3:00
Department: Nursing Science

Student Presenter(s)
Campbell, James
Janckila, Chanda
Mix, Richard
Massmann, Melissa
Ogwang, Zacharia
Osmondson, Jackie
Dunderi, Stacie
Biersma, Jill

Faculty Sponsor(s)
Lenz, Brenda

Regenerative Motor Control System

Mr. Danielson's general dissatisfaction with performance of his electric golf cart inspired him to form a senior design group to develop a replacement control system. The new controller would be designed to improve vehicle performance, safety, and efficiency. As an example of its upgrades, the primary new safety mechanism includes a watchdog system that monitors the speed of the vehicle and activates an electrical braking system that will keep the vehicle from exceeding a set safety speed. The electric safety brake employs regenerative braking that will transform some of the vehicles kinetic energy into electrical energy and feed it back to the vehicles batteries thus improving overall system efficiency. This presentation will demonstrate the prototype system which includes the initial test motor and the prototype motor controller that was designed for it.

Presentation Index: R18 **Time:** 3:00
Department: Electrical and Computer Engineering

Student Presenter(s)
Jesberg, Daniel
Danielson, Glen
Selinger, Gabe

Faculty Sponsor(s)
Thamvichai, Ratchaneekorn

Teacher-Child Interactions

How do teachers become better communicators with children? Two education students participated in an action research project that analyzed their Teacher Talk with young children. Teacher-child interactions were audio taped and later coded using a modified version of the Code for Instructional Structure and Student Academic Response. An analysis of the coded interactions was then completed. It was determined the adult interactions, both verbal and nonverbal, influenced the relationship formed with the children. Fewer management and discipline interactions coupled with reflective, personal talk, and the acknowledgment of feelings appeared to open up meaningful conversations with children. This, in turn, seemed to strengthen the teacher-child relationship. This research can serve parents, as well as teachers, in understanding how reflective dialogue helps form positive relationships with children.

Presentation Index: R19 **Time:** 3:00
Department: Child and Family Studies

Student Presenter(s)
Bauer, Katie
Theis, Steve

Faculty Sponsor(s)
Ofstedal, Kathleen

Jury Decision Making in Sexual Assault Cases: A Review

Legal professionals and social scientists have a shared interest in the psychological and social aspects of human nature at individual and group levels. This joint interest between the professions has covered areas such as eyewitness testimony, malingering, criminology, decision making, and attitudes. This research review focuses on the area of jury decision making with sexual assault cases. More specifically, I looked at how an individual's beliefs, attitudes, values, and societal scripts impact information processing related to assignment of victim blame. A script is defined as stereotyped storyline of how society imagines a particular situation (Shank and Abelson, 1977). Rape myths are fallacious scripts regarding sexual assault. When an incident has characteristics that are incompatible with the script for rape (e.g. it occurred in the day time), one might not call the assault rape. Seduction scripts and rape scripts often overlap in their defining events. Another component of the rape myth is the idea that rapists and their victims are strangers. People who accept rape myths blame the victim when the circumstances surrounding the rape have fallen outside the stereotypically defined characteristics. Finally, when the victim is a woman, general attitudes towards women have also determined victim blame. Glick and Fiske (1996, 2001) have classified sexist attitudes into two categories: hostile and benevolent. Abrams, Tendayi Viki, Masser, and Bohner (2003) have found that people who were rated high in hostile and benevolent sexism were more likely to blame the victim when the relationship between the victim and alleged perpetrator was more intimate.

Presentation Index: R20 **Time:** 3:00
Department: Psychology

Student Presenter(s)
Holt, Amy

Faculty Sponsor(s)
Jazwinski, Christine

A Landfill ... Not in My Backyard

The idea of landfills being in a community near you will often create sparks in community members. With this in mind, it is becoming harder and harder to locate areas for future landfills. This is where the issue of "NIMBY" comes along. This is often the idea in community members, "Not In My BackYard." With the decline in possible landfill areas, where should these landfills be put? The purpose of this study was to poll the Biology 101 students at St. Cloud State University, spring semester 2004. I investigated their knowledge, action and beliefs because the citizens that usually cry "NIMBY" do not have the in-depth knowledge about landfills that they need. People's perceived knowledge usually plays an important part into how a person believes things should be. This study was done to get a better grasp on how the Biology 101 students felt about landfills and how the results after surveying them will play a role into the issue of "NIMBY." My research questions were: To what extent are Biology 101 students, at St. Cloud State University, knowledgeable about landfills; To what extent do Biology 101 students at St. Cloud State University throwing things into the garbage; To what extent to Biology 101 students at St. Cloud State University feel about landfills near their community? There were 127 students that were surveyed. The results will be presented in my poster.

Presentation Index: R21 **Time:** 3:00
Department: Biological Sciences

Student Presenter(s)
Taylor, Kelley

Faculty Sponsor(s)
Simpson, Patricia

Elderly Community Loneliness Assessment

Our project addressed the degree of loneliness in the elderly in a senior independent living community. We proposed that a high degree of loneliness would be present based on the physical barriers to interaction. Thirteen subjects out of 110 residents were chosen at random to respond to a questionnaire which was administered by student nurses. The questionnaire was adapted from a tool developed by the Canadian Mental Health Association. The tool asked the availability and the use of social support. Interviewing techniques were practiced to develop consistency among interviewers. Our results indicated that over half experience moderate loneliness due to recent losses of important people in their lives.

Presentation Index: R22 **Time:** 3:00
Department: Nursing Science

Student Presenter(s)
Aune, Susan

Faculty Sponsor(s)
Lenz, Brenda
Nordell, Janis

The Interactive Effects of Organizational Justice, Culture, and Support on Organizational

Employers want employees that are committed to the organization due to the beliefs that committed employees are more productive. The extant research has shown that justice and support have positive relationships with organizational commitment. This relationship between justice and support may depend on the culture that exists within an organization. This study will try to extend previous studies by assessing how culture impacts the relationship between organizational justice and support, and how this ultimately impacts commitment to the organization. Perceptions of procedural justice fairness should lead to perceived organizational support, which would lead to increased organizational commitment; culture is expected to moderate this relationship. A lab experiment explored this question by manipulating perceptions of procedural justice, perceived organizational support, and the formality of the organizational culture.

Presentation Index: R23 **Time:** 3:00
Department: Psychology

Student Presenter(s)
Perry, Kimberly

Faculty Sponsor(s)
Kulas, John

Who Will Win?

The logistics regression model has been created from a transformation of the linear regression model. The advantage of doing so was to remove the bounds of probabilities between zero and one. Basing probabilities from an odds ratio (the probability of an event occurring divided by its compliment), then applying a logarithmic transformation gives us a model of a constant, alpha, followed by independent variables 1 through n, each supported by a coefficient, beta. Volleyball is a good resource for this project due to the numerous variables that are factored into a team's outcome. A chi-squared test has been the analysis used to determine which factors of the game are most influential and should remain in the model. In application to this project, we can use this model to decipher the maximum likelihood of a dichotomous result: winning or losing.

Presentation Index: R24 **Time:** 3:00
Department: Statistics

Student Presenter(s)
Bartolic, Cara

Faculty Sponsor(s)
Lu, Jiang

Dietary Composition of Native and Invasive Hawaiian Mullet Species

Species invasive to an area often have adverse effects on native species in terms of competition for resources. The kanda mullet, *Valamugil engeli*, was unintentionally introduced to Hilo, Hawaii and is thought to be sharing the same feeding niche as the native mullet, *Mugil cephalus*. Competition between the two could result in the extirpation of the native species from the area. This would not only decrease biodiversity but also eliminate an important source of food for other organisms in the ecosystem. The gut contents of both mullet species were treated with nitric acid to extract the dietary elements. Similarities in feeding were observed under the microscope and counts of diatoms were made. Preliminary results show that although the Valamugil engeli feed on the same diatoms as the native Mugil cephalus, their feeding habits are more diverse, which could allow them to thrive after the native species has gone extinct.

Presentation Index: R25 **Time:** 3:00
Department: Biological Sciences

Student Presenter(s)
Engelhart, Kristie
Timperley, Jess

Faculty Sponsor(s)
Julius, Matthew

HCN and CO Emission in Two Bright Comets

Current models of solar system formation predict that the chemical composition of comets should reflect their formation environment. One of our goals is to test the hypothesis that long period comets (those which formed in the Jupiter-Neptune region and later scattered to the Oort Cloud) should have less CO than short period comets. In May 2004, we obtained millimeter wave spectra of two bright long period comets, C/2001 Q4(NEAT) and C/2002 T7(LINEAR) using the Arizona Radio Observatory 12-m telescope. Among the molecular species identified in our spectra are CO, HCN, CH3OH and H2S. The spectral line profiles of the molecular emission were used to derive production rate and column densities. Relative abundances of CO and HCN are presented and discussed.

Presentation Index: R26 **Time:** 3:00
Department: Physics, Astronomy and Engineering Science

Student Presenter(s)
Choi, Sung Yeol

Faculty Sponsor(s)
Womack, Maria

Robots versus Humans: Who Should Explore Space?

There is some controversy over the United States space program. The debate is whether or not to send humans into space or to rely solely on robots. The purpose of this investigation was to find out what students in Astronomy 107 at Saint Cloud State University know and think about different elements of space exploration. To what extent are Astronomy 107 students knowledgeable about the difference in monetary cost of humans versus robots in space travel? To what extent do Astronomy 107 students believe the science gained is worth the risk of human life? To what extent do Astronomy 107 students believe full space investigation requires

Presentation Index: R27 **Time:** 3:00
Department: Biological Sciences

Student Presenter(s)
Fults, Jon

Faculty Sponsor(s)
Simpson, Patricia

Research to Practice: Comparing Chemical Dependency Treatment Protocols

This study will compare multiple protocols for the treatment of chemical dependency focusing on harm reduction, moderation management, motivational interviewing and self-help options. Research sources on this topic were collected from current, scholarly literature from within the field of chemical dependency. This study was designed to provide professionals, clients and families with information regarding treatment protocols. It will to assist clients in finding appropriate and individualized treatment options for chemical dependency treatment and aftercare. It will enable clients make informed decisions regarding their treatment options.

Presentation Index: R28 **Time:** 3:00
Department: Educational Leadership and Community Psychology

Student Presenter(s)
Couch, Nikki
Aeshliman, Kari
Etzler, Mara
Glazer, Maggie

Faculty Sponsor(s)
Jorgensen, Leeann

Anti-cancer and Teratogenic Activities of Two Vanadium Complexes $VO(TMH)_2$ and $VO(HD)_2$

Recent studies have demonstrated that vanadium metal complexes exhibit significant antidiabetic and anticancer properties. Our research group has previously synthesized several oxo-vanadium metal complexes and chemically characterized them. Their biological and biochemical properties are not yet fully investigated, accordingly the objective in this study is to investigate the teratogenic and anticancer properties of two oxo-vanadium complexes, namely, $VO(TMH)_2$ and $VO(HD)_2$- and their corresponding ligands TMH (2,2,6,6 – tetramethyl-3,5-heptanedione) and HD (3,5-heptanedione). Teratogenic effects of the above two compounds were tested using tadpole embryos of Xenopus. Each of the complexes produced growth deformities in tadpoles; $VO(TMH)_2$ was a more proficient teratogen as compared to $VO(HD)_2$. Anticancer properties of these two compounds are being determined using a human breast carcinoma MCF-7/0 cell line. The cells will be treated with different concentrations of the two above compounds and subjected to a colony formation assay. Based on these tests surviving fractions are determined and efficacy (LC_{50} and LC_{90}) of the compounds as anticancer agents will be estimated.

Presentation Index: R29 **Time:** 3:00
Department: Chemistry

Student Presenter(s)
Petersen, David
Corrigan, Ross

Faculty Sponsor(s)
Mahroof-Tahir, Mohammad
Schuh, Timothy
Sreerama, Lakshmaiah

Effectiveness of 28-day Treatment for Methamphetamine Addiction

Relapse rates suggest 28-day methamphetamine treatment effectiveness must be reviewed. This study explains and explores the opinions of professional counselors and persons in 28-day treatment for methamphetamine. Using a case study and a structured survey to 50 persons in treatment for methamphetamine addiction and 20 professional counselors. The same questionnaire will be administered to both groups. We then compared the surveys to statistical information attained from the DAANES report. Information will be presented with power point and followed by questions and answers.

Presentation Index: R30 **Time:** 3:00
Department: Educational Leadership and Community Psychology

Student Presenter(s)
Redding, Melissa
Hanson, Jenny
Thompson, Sara
Steffen, Sara
Sanderson, David
Bruns, James

Faculty Sponsor(s)
Jorgensen, Leeann

Roadless Area Conservation

On January 12, 2001 the U.S. Forest Service adopted the Roadless Area Conservation Rule. The purpose of this rule was to conserve a large portion of unprotected wildland in National Forests through a national policy. On July 12, 2004 the Secretary of Agriculture announced an amendment that would replace the 2001 roadless rule with a petitioning process that would allow State Governors an opportunity to seek establishment of management requirements for National Forest System inventoried roadless areas within their States. This is a concern because many controversial logging, road construction and oil and gas drilling projects, are threatening environmentally sensitive wildlands. The issue addressed was how the roadless areas should be managed with ecological concern and regard to society's consumption of the resources contained on these lands. The purpose of this study was to poll Saint Cloud State University Biology 152 students regarding their use, knowledge, and beliefs about the use of National Forest Lands and the Roadless Area Conservation Rule. Overall this is a complex issue with the ultimate decision weighing on the knowledge and beliefs of all citizens to influence the management policies of National Lands.

Presentation Index: R31 **Time:** 3:00
Department: Biological Sciences

Student Presenter(s)
Casper, Kyle

Faculty Sponsor(s)
Simpson, Patricia

Alpha-cyano-4-hydroxycinnamic Acid-tributylamine Room Temperature Ionic Liquid Matrix: Quantification Trials of Angiotensin II

The use of Room Temperature Ionic Liquids (RTILs)as matrixes for matrix-assisted Laser Desorption Ionization Mass Spectrometry was first reported in 2001. Conventional crystalline matrixes, such as a-cyano-4-hydroxycinnamic acid (CHCA), are well-known for their ease of use and reliability in terms of accurate mass measurement for the qualitative identification of peptides and proteins. However, RTILs derived from these matrixes appear to offer greater potential for reproducibility in signal intensity for MALDI analysis, opening the door to simple and straightforward quantification of peptides and proteins by MALDI. As a result of the liquid state of RTIL matrixes, analyte distribution is much more uniform, leading to much greater reproducibility from shot to shot. Spectral analysis of Angiotensin II peptide using alpha-cyano-4-hydroxycinnamic acid tributylamine RTIL showed comparable mass spectral resolution with crystalline CHCA matrix. However, comparable deviations in peak intensities at varying concentration of both matrix and analyte were observed. An attempt was made to develop[a calibration curve of peak intensity vs. analyte concentration. Addition of a surfactant improved the shot to shot reproducibility, but increasing analyte concentrations gave nonlinear relationship with peak intensity. It is speculated that addition of an internal standard in the samples may improve the shot-to-shot reproducibility.

Preliminary studies have begun to identify various dyes in lipstick samples as a possible forensic application of MALDI-MS.

Presentation Index: R32 **Time:** 3:00
Department: Chemistry

Student Presenter(s)
Nyaga, Carol

Faculty Sponsor(s)
Jeannot, Michael

Coping Styles of Perfectionists

The purpose of our study is to determine the relationship between two types of perfectionism and procrastination in undergraduate psychology students enrolled in an introductory class. Previous studies have examined the relationship between perfectionism and procrastination. However, these studies have defined perfectionism as a single, undesirable construct. For the purposes of this study we examine two types of perfectionism (adaptive and maladaptive). We hypothesize that maladaptive perfectionism will promote procrastination more than adaptive perfectionism. Our independent variable is the type of perfectionism, as measured by the Almost Perfect Scale, Revised (Slaney et al., 2001). Our dependent variable is procrastination as measured by The Procrastination Assessment Scale-Students (Soloman & Rothblum, 1984). A correlation will compare the two groups of perfectionists (adaptive and maladaptive) on the procrastination measure.

Presentation Index: R33 **Time:** 3:00
Department: Biological Sciences

Student Presenter(s)
Stachowski, Alicia
Perry, Kimberly

Faculty Sponsor(s)
Hauslein, Patricia
Rockenstein, Zoa

Mutagenicity and Carcinogenicity of 2-Propoxyethanal (2-PAL) and 2-Butoxyethanal (2-BAL)

2-butoxyethanol (2-BE) and 2-propoxyethanol (2-PE) are organic solvents belonging to a class of chemicals called ethylene glycol ethers (EGE). The metabolism of 2-BE and 2-PE are believed to be parallel the metabolism of alcohol. The intermediates, 2-butoxyethanal (2-BAL)and 2-propoxyethanal (2-PAL), are believed to be harmful. The formation of 2-BAL and 2-PAL is the rate determining step in their metabolism. 2-BAL and 2-PAL are not available commercially, therefore, they were synthesized via Swern Oxidation. Moreover, these aldehydes are also believed to cause tumor formation in animal studies. Thus, we are examining the mutagenicity of both 2-BAL and 2-PAL on Salmonella choleraesuis using Ames Test. If the test compounds were mutagenic, we would anticipate at least twice the amount of revertant colonies as compared to

Presentation Index: R34 **Time:** 3:00
Department: Biological Sciences

Student Presenter(s)
Chieh, Wei-Jiun
Grant, Rainer

Faculty Sponsor(s)
Kvaal, Christopher
Schoenfuss, Heiko
Sreerama, Lakshmaiah

The Synthesis of Chaetomellic Acid A and Analogues

Farnesyl protein transferase catalyzes the reaction of RAS proteins to bind with farnesyl pyrophosphate. The addition of a farnesyl group to RAS allows the proteins to become membrane bound, resulting in an on/off switch for cell growth. Mutant RAS proteins act as a broken switch, which in turn links them to cancer. Competitive inhibitors of farnesyl protein transferase are being designed to mimic farnesyl pyrophosphate. These compounds are anticipated to lead to new anticancer drugs by preventing mutant RAS proteins from ever becoming membrane bound.

Presentation Index: R35 **Time:** 3:00
Department: Chemistry

Student Presenter(s)
Johnson, Jessica

Faculty Sponsor(s)
Mechelke, Mark

Histological Investigations into the Effects of Alkylphenols on Male Fathead Minnows

Alkylphenolic compounds have been found ubiquitously in US waterways and aquatic ecosystems. Their estrogenic effect has been well established in cell- and tissue culture experiments, however, the anatomical effect of these compounds on the hypothalamus–pituitary–gonadal axis remains yet to be investigated. In this study, we exposed male fathead minnows to a mixture of alkylphenolic compounds in concentrations resembling those reported from a major metropolitan sewage treatment plant effluent on the Upper Mississippi River. Fish were exposed for 28 days and their reproductive potential was assessed following the exposure period. At the end of the reproductive tests, fish were sacrificed and prepared for histopathological investigation. We developed an experimental protocol to histologically process gonadal and liver tissue from exposed and control males. Briefly, tissues were fixed in Bouin's solution for 24 hours, washed and dehydrated in a series of progressively stronger ethanol baths. After a toluene treatment, tissues were embedded in paraffin, sectioned, and then stained using a well established hematoxylin/eosin counter stain. Finally, sections were cover-slipped and dried for viewing. Tissues are currently being evaluated for pathological changes correlated with exposure to alkylphenolic compounds. Detailed results will be presented at the colloquium. This study was funded in part by the US Geological Survey, the Minnesota Pollution Control Agency, and the US Environmental Protection Agency.

Presentation Index: R36 **Time:** 3:00
Department: Biological Sciences

Student Presenter(s)
Grand, Anthony

Faculty Sponsor(s)
Schoenfuss, Heiko

Dose-dependent Effects of 4-Nonylphenol on Mature Male Fathead Minnows

Alkylphenols, including 4-nonylphenol, are surfactants used in large quantities in the United States as cleaning agents. Alkylphenols have been found ubiquitously in the aquatic environment and are known to adhere to the estrogen receptors of vertebrate cells. In this experiment, we exposed mature male fathead minnows (Pimephales promelas) to one of four graded concentrations of 4-nonylphenol for 28 days. After the exposure, males were allowed to compete with control males for access to females and spawning sites. Exposure concentrations were 0.3 µg/L; 5 µg/L; 11 µg/L; and 15 µg/L nonylphenol. The entire exposure apparatus was optimized to minimize contamination and loss of 4-nonylphenol. Each treatment consisted of four aquaria housing 8 fish (32 total/treatment). Endpoints were measured in sub samples after 1, 4, 7, 14, and 35 days and included weight, length, secondary sexual characters, gonad size, liver size, vitellogenin induction, vitellogenin mRNA expression, and nest holding ability. In addition, water samples were analyzed weekly by the US EPA, Chicago. Survival was excellent and water chemistry confirmed a close match of 4-nonylphenol concentrations with the desired nominal concentrations. Preliminary results indicate no adverse effects of the two lower concentrations (0.3 and 5 µg/L) of 4-nonylphenol. Male fathead minnows exposed to the two higher concentrations (11 and 15 µg/L) of 4-nonylphenol were less likely to hold a nest site successfully. The three higher 4-nonylphenol treatments also resulted in varying amounts of vitellogenin mRNA expression within the first 14 days of exposure. Results of this study are consistent with our previous experiments and demonstrate effects of 4-nonylphenol at concentrations approximating 5 µg/L. These observations indicate adverse effects for exposed fishes below the 4-nonylphenol draft criterion proposed by the US Environmental Protection Agency. We acknowledge financial support from the MN Pollution Control Agency, the US Geological Survey, and the US Environmental Protection Agency.

Presentation Index: R37 **Time:** 3:00
Department: Biological Sciences

Student Presenter(s)
Cediel, Roberto
Grove, Kent

Faculty Sponsor(s)
Schoenfuss, Heiko

Characterization of Aldehyde Dehydrogenase in Fathead Minnows

Aldehyde dehydrogenase (ALDHs) are important for cellular detoxification of aldehydes in all living organisms, including plants, animals, and prokaryotes. While studies show ALDH activity in most tissues and organs, the highest levels of ALDHs are localized in the liver. Ethylene glycol ethers (EGEs) are a group of chemicals that generate aldehydes. The importance of ALDHs with respect to EGEs is relatively unexplored in mammalian of sub-mammalian vertebrates. EGEs are organic solvents widely used in household and industrial products that end up in the environment. Fathead minnows come into contact with EGEs due to their presence in small ponds, streams, and drainage ditches. The role of fathead minnow ALDHs in oxidation of EGEs is the main focus of this research. Livers were harvested from 20 fathead minnows and homogenized with a tissue terror in 0.1 M Sodium Phosphate buffer pH 7.0. The extracts were tested spectrophotometrically for ALDH activity using acetaldehyde or benzaldehyde as substrates. The samples analyzed showed the presence of ALDH enzymes in fathead minnow livers. Isoelectric focusing was also performed on the tissue extract using Ampholin PAG plates. The gel stained for ALDHs indicated the presence of multiple ALDHs. In situ visualization and semiquantification of ALDHs is also currently underway by obtaining microtome tissue sections of a fathead minnow suspended in permount. The tissue sections will be prepared and fixed on APES-coated slides. The slides will be stained for the presence of ALDHs. ALDH activity for the fathead minnow tissues will then be quantified based on the intensity of brown color observed in the slides.

Presentation Index: R38 **Time:** 3:00
Department: Chemistry

Student Presenter(s)
Sogge, Johan

Faculty Sponsor(s)
Sreerama, Lakshmaiah

Paleoecology of Mango Creek, Belize

Recently, St. Cloud State University established a research station in a small village in Belize named Mango Creek. SCSU hopes to establish a long term presence with an active environmental monitoring component. In order to complete this task, there is much preliminary work that needs to be completed; including the construction of paleo-ecological history. Organic Carbon, chlorophyll A and phosphorus were all tests constructed on the two mangrove cores that were obtained last spring, in Belize. Both natural and anthropogenic evidences are present within the test results. It is extremely important to form an environmental baseline to guide and interpret future research. In order to maintain or improve ecosystem

Presentation Index: R39 **Time:** 3:00
Department: Biological Sciences

Student Presenter(s)
Kotschevar, Katie

Faculty Sponsor(s)
Julius, Matthew

Managerial Perceptions of Creativity and Organizational Commitment in Relation to Financial

Creativity has long been viewed as financially beneficial for organizations as a whole. But how does creativity affect the financial success of employees at the individual level? The present study explores the ways that which managerial perception of creativity, along with organizational commitment, affects the likelihood of gaining financial rewards (bonuses). The participants consist of undergraduate psychology students at a Midwest university. In this between subject experiment, participants are asked to review four scenarios and allocate bonuses based on their perceptions of employee performance. Bonuses are distributed from a pre-determined resource pool.

Presentation Index: R40 **Time:** 3:00
Department: Psychology

Student Presenter(s)
Paquette, Adam S

Faculty Sponsor(s)
Kulas, John

Internal Combustion Engine Intake Manifold Design

Design theories for internal combustion engine manifolds have been around since the early 1950's. Surprisingly these same theories are still used today even with the new age multi-point fuel injection technology. The theories help design intake and exhaust manifolds by tuning a systems lengths and diameters for the manifold piping showing the optimized operation ranges in revolutions per minute (rpm). This is accomplished one way by calculating a systems inductance and capacitance and modeling it in an analog circuit created by the manifolds components. Results gained from these calculations are used to create a design for an intake manifold for a formula style race car. The car is to be competed with in the Society of Automotive Engineers (SAE) collegiate competition Formula SAE.

Presentation Index: R41 **Time:** 3:00
Department: Mechanical and Manufacturing Engineering

Student Presenter(s)
Ries, Michael

Faculty Sponsor(s)
Miller, Kenneth

Personality and Political Party Affiliation

The present study investigates the relationship between personality characteristics, religiousness, and political attitudes in a sample population of university students. These variables are measured through a questionnaire. Covariates measured include background, education, and parental political stance. The purpose of the study is to find out how personality and religiosity affects a person's political attitudes. Results of this study may be beneficial in further understanding of voting behavior and election outcomes.

Presentation Index: R42 **Time:** 3:00
Department: Psychology

Student Presenter(s)
McLaughlin, Carrie

Faculty Sponsor(s)
Kulas, John

Location of Mad1 and Mad2 Protein in Breast Cancer Cells

Ottelione A (OttA) is a very toxic anti-cancer drug, able to inhibit tumor growth in nanamolar concentrations by inhibiting tubulin polymerization. OttA blocks cells at the metaphase/anaphase junction of mitosis and triggers the cell signal cascade, prompting apoptosis. The mechanism by which OttA inhibits tubulin polymerization is not known, and as with other cytotoxic drugs, cancer cells become resistant to OttA over time. This presents a significant problem and much research has been dedicated to studying this phenomenon. Since the nucleus proteins MAD1 and MAD2 aid in the transport and polymerization of tubulin, one hypothesis explaining anti-cancer drug resistance is that the MAD proteins are either not expressed in the nucleus or are over-expressed outside of the nucleus. To test if altered localization of MAD1 and MAD2 proteins correlated with OttA resistance, an OttA-resistant human breast carcinoma cell line (MCF 7/OttA) was developed that was relatively insensitive to OttA as compared to the parent cell line (MCF 7/O). Both cell lines were cultured and subsequently lysed, which allowed for the separation of the nuclei from the cytoplasm. These cellular components were isolated by differential centrifugation and then the proteins were separated on polyacrylamide gels and transferred to a membrane. The proteins were probed with antiMAD1 and antiMAD2 antibodies, as the immunoreacted proteins revealed whether MAD1 and MAD2 were mislocalized and whether their expression levels were different. These studies are ongoing.

Presentation Index: R43 **Time:** 3:00
Department: Chemistry

Student Presenter(s)
Marine, Sasha

Faculty Sponsor(s)
Sreerama, Lakshmaiah

Effective Leadership Styles for Males and Females in Career Promotions

In the Following study I will be measuring the different leadership styles of males and females and their promotibilty based on gender stereotypes in an organizational setting. In the study participants will read a job description for an upper level management position, select the best candidate for the position based on the provided qualifications of the applicant, and complete the BEM inventory. The participant will also complete a short questionnaire explaining the bases for his or her decision. The participants will chose from an effective or ineffective, male or female applicant based on the information provided in resumes. The gender of the participant will be revealed to be used for measuring if males and females have any similarities in the candidate they select. In this study I hope to provide an understanding to the problems with gender stereotypes in selection for promotions. The positions of upper management is dominated by males and only in certain careers are females comparable. The dependent variable is promotibilty and the independent variables are leadership styles, gender, and stereotypes. The BEM inventory will help measure if the participants in the study had any stereotypes about gender roles prior to completing the study. After the participants have complete the study the data will be collected and enter in to the SPSS system and calculated to measure the gender roles in leadership styles in upper level management.

Presentation Index: R44 **Time:** 3:00
Department: Psychology

Student Presenter(s)
Anderson, Jennifer

Faculty Sponsor(s)
Kulas, John

Nutritional Access in an Independent Senior Living Community

As future nurses, one goal for our aging population is to promote independent living in the community. In order to support this objective, advocate for clients in this population, and allocate resources effectively an assessment of the needs of older adults must first be conducted. This research project explores the needs of older adults living in the community relative to access to nutrition. A community assessment was performed with residents of a senior town home community in the St. Cloud area via individual interviews using a standard questionnaire. The data obtained suggested minimal barriers to nutrition. However, the results of this study imply a need for resource stewardship regarding services in the community related to transportation and possible food preparation. The implications of this study will enable us as nurses; to direct our efforts more effectively in areas of recognized need allowing us to utilize our time efficiently.

Presentation Index: R45 **Time:** 3:00
Department: Nursing Science

Student Presenter(s)
Erdahl, Melissa
Hulett, Jennifer
Kemp, Sarah
Brezinka, Heather

Faculty Sponsor(s)
Lenz, Brenda

Role of ALDH1A1, ALDH2, and ALDH3A1 in the Metabolism of Benzyloxyacetaldehyde

Ethylene glycol ethers (EGEs) are commonly used in many industrial and household products in the United States due to their excellent solvent properties. It has been estimated that approximately 200 million Americans are exposed to EGEs annually, and while there has been extensive research in the toxicology of EGEs, their metabolic fate in humans is currently not well understood. Ethylene glycol ethers undergo oxidation by alcohol dehydrogenases (ADHs) to yield aldehyde metabolites, which are subsequently oxidized by aldehyde dehydrogenases (ALDHs) into carboxylic acids. Reactions catalyzed by ALDHs are considered the bioactivation step since carboxylic acid metabolite formation corresponds to increased toxicity. In this study, the EGE metabolite benzyloxyacetaldehyde is investigated. Benzyloxyacetaldehyde has been previously used in synthetic reactions for anticancer and HIV drugs, antibodies, and cosmetics. This demonstrates unique chemical properties intrinsic to benzyloxyacetaldehyde, while its aldehyde moiety should make it a substrate for aldehyde dehydrogenases (ALDHs). The total organic synthesis of benzyloxyacetaldehyde was completed via a modified Williamson Ether Synthesis followed by a Swern Oxidation. All products were purified by silica gel column chromatography and characterized by GC/MS (gas chromatography/mass spectrometry) and NMR (nuclear magnetic resonance spectrometry). We have addressed the development of an appropriate bioanalytical method for benzyloxyacetaldehyde and its metabolites produced from reactions catalyzed by ALDH1A1, ALDH2, and ALDH3A1. Nuclear Magnetic Resonance Spectroscopy (NMR) was found to be the most effective method when employed with a water peak suppression technique for non-deuterium solvents. Concomitant analysis of the conventionally used Varian™ UV/Vis Spectrophotometric Kinetic data with the NMR measurements of benzyloxyacetaldehyde and its metabolites will demonstrate the precision power of the NMR in regard to ALDH catalyzed reactions. NMR will also reveal any potential ALDH reaction products that would normally be undetected in the conventional methodology.

Presentation Index: R46 **Time:** 3:00
Department: Chemistry

Student Presenter(s)
Wessel, Emily

Faculty Sponsor(s)
Sreerama, Lakshmaiah

Diabetes

Diabetes is a metabolic disease that is characterized by either the inability to produce insulin or the inability of a cell to uptake glucose. Vandium has been targeted as a possible biometallic medication for its ability to lower blood glucose levels through normalizing body carbohydrate and lipid metabolism. Diabetes creates an increased amount of reactive oxygen species that can create diabetic complications that may be treated with an antioxidant, such as flavonoids. By creating a vanadium-flavonoid complex, there is hope for an oral treatment of glucose lowering medications instead of the tedious daily injections. A green complex, VO(5-fl)2 was synthesized by a 1.1:1 molar ratio of 5-ydroxyflavone (5-fl) to VOSO4, refluxed for 18 hours. A black complex, VO2(3-fl) was synthesized by a 1.1:1 molar ration of 3-hydroxyflavone to NH4VO3, refluxed. IR spectroscopy of VO2(3-fl) shows a shift of peaks from the ligand to complex and also a strong vanadium oxygen bond peak at 968 cm-1 and a less intense peak at 906 cm-1. Analysis of UV-Vis spectroscopy in DMSO shows a shift in peaks and formation of new peaks with VO2(3-fl) showing bands at 260, 324, 398, and 492 cm-1 and 3-hydroxyflavone showing bands at 258, 308, 346, and 362 cm-1. This suggests that vanadium was successfully coordinated to the flavonol ligand. Details of the synthesis and solution speciation studies will be presented.

Presentation Index: R47 **Time:** 3:00
Department: Chemistry

Student Presenter(s)
Bushkofsky, Justin

Faculty Sponsor(s)
Mahroof-Tahir, Mohammad

The Effect of Caregiver Training on the Ability of a Person with Aphasia to Learn Scripts

Broadly defined, aphasia is a communication disorder which results from damage to the language dominant half of the brain. This damage may result from a stroke, aneurysm, or other brain injury. Communication treatment based on a social model of practice addresses the client's ability to function and participate in their daily lives. Caregiver training, an approach used under the social model umbrella, offers conversational partners the ability to provide strategies for repair when a communicative attempt has failed for a person with aphasia. Script training, also a social model approach, is a relatively new type of treatment that also addresses the functional communication skills of a person with aphasia. For this study, two adult male subjects with a diagnosed aphasia were asked to memorize a set of six scripts. The wife of one of the subjects received caregiver training before working with her husband. The subjects answered six scenario questions and repeated the same scripts after a clinician model. Data was analyzed for the scenario questions, script repetitions, scripts practiced at home and scripts practiced in therapy. Time was a significant factor for the subject whose wife had caregiver training in learning the modeled scripts, the scripts practiced at home and the scripts practiced in therapy. Time was a significant factor for the subject who practiced alone with learning the therapy scripts. Time was not a significant factor for either subject for the scenario questions. These findings indicate that caregiver training affected the ability of a person with aphasia to learn predetermined scripts. As time progressed, the participant who had help from his wife was able to produce more of the scripts correctly than the participant who practiced alone. The results of this study will add to the evidence base already in place for both caregiver training and script training.

Presentation Index: R48 **Time:** 3:00
Department: Communication Disorders

Student Presenter(s)
Schultz, Bernie H.

Faculty Sponsor(s)
Rangamani, Grama

Similarity of Behavior of Persons with Methamphetamine Addiction to Behaviors of Schizotypal Personality Disorder

This project reviews evidence that correlates schizotypal personality and methamphetamine addicted person. There are similarities between a person with a methamphetamine addiction and a person with schizotypal personality disorder. Information will be gathered from journal and professional references. In the DSM-IV, the diagnostic criteria of a person with a schizotypal personality disorder are as follows: a pattern of social deficits marked by an acute discomfort of close relationships; cognitive/perceptual distortions; and eccentricities of behavior, speech, and/or appearance. This disorder could also include abnormal visual or auditory experiences; suspiciousness; and excessive social anxiety that are associated with paranoid fears. The National Institute on Drug Abuse finds methamphetamines effect on the central nervous system to increase euphoria, irritability, confusion, anxiety, paranoia, and aggressiveness. Conclusions and sources will be presented on poster board at time of Colloquium.

Presentation Index: R49 **Time:** 3:00
Department: Educational Leadership and Community Psychology

Student Presenter(s)
Jadwinski, Heather
Hartmann, Michelle

Faculty Sponsor(s)
Jorgensen, Leeann

Effects of Recovery Environment on Animal Patients After Surgery

The purpose of this study is to determine if stimuli such as noise, light, movement, and other environmental variables have an effect on the recovery time of an animal after anesthesia and a surgical procedure. Multiple veterinary clinics were surveyed for this study to compare and contrast specific recovery techniques. Felines and canines were the focused animal species. A variety of surgeries were included, with an emphasis on overiohysterectomy and testectomy procedures due to the prevalence in small animal veterinary medicine. It is thought that any animal will recover from an invasive procedure more quickly if placed in a quiet, low lit, low traffic area, versus a noisy chaotic environment. The information retrieved from this study will hopefully be of value to various professionals in veterinary medicine, as well as the facilities and clientele they serve.

Presentation Index: R50 **Time:** 3:00
Department: Biological Sciences

Student Presenter(s)
McArdell, Kara

Faculty Sponsor(s)
Marcattilio, Anthony

Clearwater Shoreland Management Ordinance

To assure intelligent development practices and preserve economic, environmental, and aesthetic values of our lands surrounding lakes and rivers, the Minnesota Legislature has given responsibility of protecting the state's shorelines to local governments. In response to the tremendous growth of development within the city of Clearwater, Minnesota, the Department of Natural Resources has implored the city to develop and maintain healthy shoreline management. Appropriate zoning and regulations set forth within a shoreland management ordinance will ensure healthy environmental conditions and retain valuable economic and aesthetic values for the shoreland within the city. Due to the local government's inability to finance this project, I have been approached as a creative solution to their problems. In a win-win situation, the government will be able to adopt a shoreline management ordinance tailored to their needs, and I will have a tremendous learning opportunity by writing the ordinance for them. I hope to gain much experience working with a municipality, coordinating the project by communicating with the city and the Department of Natural Resources, developing an understanding of civic operation and terminology, writing legal code, and establishing effective environmental protection regulation. Sustaining the quality of shoreland within the city will be important to preserve Clearwater's unique character, as well as its allure and environmental quality.

Presentation Index: R51 **Time:** 3:00
Department: Environmental and Technological Studies

Student Presenter(s)
Storlien, Joseph

Faculty Sponsor(s)
Bender, Michner

Traversing Ontogenetic Constraints: Climbing Performance of Hawaiian Freshwater Fishes

The Hawaiian freshwater ecosystem is comprised of only five species of native fishes. Larvae of three of these species are capable of climbing waterfalls ranging up to 600m (Schoenfuss & Blob 2003. J Zool 261:191-205). However, anecdotal evidence suggests that adults of at least some of these species also are capable of climbing. At least for larvae, two differing climbing styles have been described. Sicyopterus stimpsoni climbs by inching up the surface of the substrate alternately attaching itself with its pelvic sucking disk or sucker mouth. In contrast, powerburst climbing advances larvae of Awaous guamensis and Lentipes concolor through rapid bursts of swimming against the falling water. Previously, we hypothesized that powerburst climbing is limited to young individuals with low body mass and less drag than adults. In this study, we collected adults of all three species, and filmed their climbing on a 56º degree inclined ramp. The locomotor style of adult S. stimpsoni exhibited no change from the previously described larval climbing style. Adult A. guamensis did not climb. Adult L. concolor did climb readily, however, their locomotor style differed dramatically from that described for juveniles. The climbing style more closely resembled that of adult S. stimpsoni, retaining near constant contact with the climbing substrate. These results corroborate the hypothesis that powerburst climbing is not sustainable with increased body mass and drag. In addition, this transformation in locomotor style implies substantial anatomical and physiological restructuring of juvenile L. concolor. We acknowledge funding from the State of Hawaii's, Division of Aquatic Resources.

Presentation Index: R52 **Time:** 3:00
Department: Biological Sciences

Student Presenter(s)
Becker, Marc

Faculty Sponsor(s)
Schoenfuss, Heiko

Molecular Spectroscopy of Comet Machholz

Comets are among the best preserved residual material from the formation of our solar system. Observations of active comets (those which come near the Sun) and the material they eject can reveal important clues to their composition and formation. In January 2005, we obtained optical spectra of a bright comet, C/2004 Q2 Machholz (discovered in August 2004), which was easily seen with binoculars in the constellation Orion. The spectra were obtained using an Orion eight inch reflecting telescope with a SBIG ST-8 CCD camera and SGS spectrograph at a location in Buffalo, MN. Among the molecular species identified in our spectra are CN, C2, C3, and NH2. These spectra were analyzed to derive relative flux emission ratios for the different species. Also, measurements of intensity versus distance from coma of molecular emission were obtained in order to constrain models of formation and destruction of the molecules, which may show us whether they are from the nucleus or formed from parent material in the solar radiation field. These data will be helpful in constraining models of molecular parameters and species lifetimes in the solar radiation field.

Presentation Index: R53 **Time:** 3:00
Department: Physics, Astronomy and Engineering Science

Student Presenter(s)
Gesmundo, Matthew

Faculty Sponsor(s)
Womack, Maria

Comparing Male and Female Treatment Protocols for Methamphetamine Addiction

Methamphetamine abuse/addiction is drastically on the rise. Since 2002, 5.3 percent of people in the United States have tried methamphetamines at least once in their lifetime. This study compares treatment protocols of methamphetamine treatment between male and female subjects. This study also compares and contrasts the effectiveness of this type of treatment within each gender. Data was collected using professional journals, the SAHMSA Website and interviews with various treatment centers within Central Minnesota. Some of these centers include: New Beginnings in Waverly, Recovery in the Pines in Staples and Little Falls, Recovery Plus in St. Cloud, Minnesota Health Center in St. Cloud, Maple Lake Recovery Center in Maple Lake, and Hazelden in Chisago City, etc. The focus of this study is to inform Chemical Dependency professionals of treatment outcomes of methamphetamine and to study how these treatments affect genders differently. Although, methamphetamine abuse/addiction is on the rise, treatment protocols suggest more work, research and study needs to be done to properly assess or treat the degree of the methamphetamine problem in Central Minnesota.

Presentation Index: R54 **Time:** 3:00
Department: Educational Leadership and Community Psychology

Student Presenter(s)
Paumen, Rebecca
Hanson, Cynda
Seiler, Kathy

Faculty Sponsor(s)
Jorgensen, Leeann

A Study of Soil Amino-sugar Nitrogen in Homeowner Lawns

Lawn fertilization by homeowners is one of the most common lawn maintenance practices performed; however, few homeowners are aware of the quantity of fertilizer they apply or the environmental consequences of over application. One area of lawn fertility which has not been thoroughly investigated is the response lawn soils have to additional fertilizer applications. In an attempt to address this issue, this study adapts a corn fertility test developed by the University of Illinois, in order to determine the amino sugar nitrogen concentration in lawn soil. Amino sugar nitrogen is a type of nitrogen stored in the cell walls of soil microorganisms. If amino sugar nitrogen concentration is high within a lawn soil, it is thought that lawn response to additional nitrogen fertilizers applications will be slight. This study will inventory the amino sugar nitrogen concentration of 77 homeowner lawns in the St. Cloud Metro area. Further investigation will be needed to correlate amino sugar nitrogen concentration to application rate and lawn response.

Presentation Index: R55 **Time:** 3:00
Department: Environmental and Technological Studies

Student Presenter(s)
Kotschevar, Katie
Storlien, Joseph

Faculty Sponsor(s)
Bender, Michner

The Design and Synthesis of Novel RAS Farnesyl Protein Transferase Inhibitors

Developing chemotherapeutic agents that are more specific and less toxic than those in current use is a major goal in cancer research. While traditional approaches to cancer management have involved cytotoxic compounds of limited selectivity, new ideas are focusing more on the primary disease mechanisms that underlie the development and maintenance of cancer. One such target is a guanosine triphosphate – binding protein known as RAS, which is responsible for a variety of cell transduction pathways including cell proliferation. Much attention has been focused on the RAS signaling pathway as a cancer therapy since 30% of all human cancers contain mutant RAS proteins which lead to unregulated cell growth. One method to target RAS oncogenes is the design of farnesyl pyrophosphate mimetics that serve as competitive inhibitors of the enzyme farnesyl protein transferase (FPTase). Inhibition of FPTase has been shown to prevent RAS proteins from ever performing their function as a switch for cell growth. Farnesyl pyrophosphate is composed of two structural units, a hydrophobic farnesyl “tail” and a polar diphosphate “head.” While drug companies have focused primarily on the design of novel ‘head” mimetics of farnesyl pyrophosphate, our research focuses on modification of the farnesyl “tail”. Through an eight step synthetic sequence, “tails” are currently being prepared that incorporate two aromatic rings. It is anticipated that these farnesyl analogues will bind tighter to the FPTase active site due to intermolecular

interactions between the “tail” and the aromatic amino acid residues that have been shown to line the enzyme pocket. Polar “heads” will be attached to these modified “tails” to prepare potentially potent, competitive inhibitors of FPTase.

Presentation Index: R56 **Time:** 3:00
Department: Chemistry

Student Presenter(s)
Gahlon, Hailey

Faculty Sponsor(s)
Mechelke, Mark

***Piper sanctum* Natural Product Synthesis**

Natural products isolated from *Piper sanctum* have been a subject of study in antimycobacterial activity. This work attempts to synthesize one of these natural products displaying activity against Mycobacteriaum tuberculosis. The goal of this research is to create a sequence of reactions which can be developed into an undergraduate organic laboratory. This molecule is a good target for synthesis because it can be prepared using cheap, fast, and clean reactions, which are ideal for use in an undergraduate laboratory setting.

Presentation Index: R57 **Time:** 3:00
Department: Chemistry

Student Presenter(s)
Terry, Jay

Faculty Sponsor(s)
Mechelke, Mark

Employee Selection

The purpose of our project was to design a selection plan for an Executive Team Lead-Team Relations position at Target. The objective was to develop a plan that would lead to hiring the top candidate for this position. The first step of our research project was to design a job analysis and job description. We conducted the job analysis by interviewing an Executive Team Lead-Team Relations of a Target store. Based off of the job analysis we formed a job description which consisted of a job summary, the main duties of the position and job requirements. The second step was to structure a recruitment plan. Our budget consisted of $1500 and we had to find the most cost efficient and creative way to reach a specific pool of applicants. We designed job postings, brochures and also made use of free state services. The final step was to develop a selection method to choose the most qualified candidate. Again, we had a budget of $1500 and we also allowed to use any left over money from the recruitment plan. We selected from many pre-employment tests, designed relevant job interview questions, and implemented many other hurdles applicants would have to overcome in order to obtain the relevant position. From this project we learned how a recruitment and selection plan are fundamental to the hiring process and hiring the right candidate.

Presentation Index: R58 **Time:** 3:00
Department: Management

Student Presenter(s)
Mallon, Cassie
Skumautz, Erin

Faculty Sponsor(s)
Davis, Elaine

Face Recognition: Impact of Emotional Expressions

Eastwood, Smilek, and Merikle, (2001) found negative facial expressions capture attention. Participants took longer to count arcs in cases where upright faces had negative expression as compared with the faces with positive expression; while inverted faces showed a negligible difference in response latency. In this study, effects of distracters' valence in a selection flanker task (e.g., Eriksen & Eriksen, 1974) was investigated. It was hypothesized that irrelevant flanking sad faces interfere more with responding than happy faces because sad faces would be harder to ignore. Students had to identify a middle face, that was upright or inverted, as happy or sad. The target face could be surrounded by either: sad, happy, angry, embarrassed, or neutral faces. There were four different types of stimulus sets: 1) all three faces were the same or congruent; 2) the flanking faces were from the opposite response or incongruent; 3) the flanking faces had an emotional expression not assigned a response; and 4) the flanking faces had a neutral expression. Implications for interaction between attention and emotion are discussed.

Presentation Index: R59 **Time:** 3:00
Department: Psychology

Student Presenter(s)
Motschke, Lisa
Olah, Shannon

Faculty Sponsor(s)
Valdes, Leslie

Verbalization within the Stream of Consciousness

This study was designed to explore the effect of verbalization on memory for the stream of consciousness. During a 15-minute period, participants were left alone in a room and asked to think about anything that came to their minds under one of two conditions. In the intermittent reporting condition, the participants thought silently except for briefly writing their current thought at five prompted intervals. Participants in the continuous reporting condition spoke all thoughts aloud to a tape recorder. At the end of the free association session, the participants were asked to recall as many thoughts as possible that they had had during the 15 minutes. We predicted that verbalization would improve recall for the stream of consciousness. We also predicted that silent thinking would be associated with less-organized patterns of thought, whereas thinking out loud will produce more organized and linear patterns of thought that may make recall easier.

Presentation Index: R60 **Time:** 3:00
Department: Psychology

Student Presenter(s)
Trisko, Jenna
Stambaugh, Morgan

Faculty Sponsor(s)
Melcher, Joseph

Photolysis of Phenethyl Isothiocyanate

Isothiocyanates are interesting structures characterized by the R-NCS bond, where R is any alkyl group. The photochemistry on such structures has been not been studied in great detail. Previous photochemical research of short-chained isothiocyanates showed that a reaction occurred that resulted cleaving of the C-S bond resulting in an isocyanide product. Other studies have showed that for longer chains, such as benzyl isothiocyanate, that isomerization of the isothiocyanate to the thiocyanate form was the dominant form. It was suspected that the formation of this product was due in part to a triplet sulfur atom intermediate state, produced during photolysis. This work deals with the photochemistry of phenyl isothiocyanate and phenethylisothiocyanate. The main goal behind this work was to investigate the isomerization of these compounds. It was thought that if the mechanism behind isomerization of the isothiocyanate to the thiocyanate formed through a triplet sulfur intermediate it could be trapped and the isomerization would not occur. This would support a mechanism, which included the formation of a triplet sulfur intermediate. Preliminary results on phenyl and phenethyl isothiocyanate show that isomerization does not occur. This is shown by the lack of products seen in GC-MS spectra of both before and after photolysis of the isothiocyanates.

Presentation Index: R61 **Time:** 3:00
Department: Chemistry

Student Presenter(s)
Roering, Andrew

Faculty Sponsor(s)
Gregory, Daniel

Random Extinction of Population Patches

A meta-population model was developed, that allows dispersal among discrete patches, which are subject to random extinction events, leaving the patch open to further colonization from other patches. I analyzed the geometrical effects of a square, linear, circular, and a tourus model. The long-term population is affected by dispersal and random extinction and has an average long-term behavior that is different than the expected carrying capacity. To find out this out, markov-chains are used to predict the long-term behavior. Dispersal amount has a profound impact on population longevity, and there exists an optimal dispersal rate. The optimal dispersal rates for all geometries are found to differ very little. It is confirmed that too much dispersal is detrimental, as well as little or none at all. It is also found that geometry also has little effect on dispersal sensitivity to initial growth. In this two dimensional discrete dispersal model, the geometry has little effect on

Presentation Index: T1 **Time:** 5:30
Department: Mathematics

Student Presenter(s)
McClure, Nicholas

Faculty Sponsor(s)
Sibley, Thomas

Evaluation of Control Methods for Invasive Plants at Military Training Sites in Minnesota

The vegetation of two military training sites in Minnesota has been dramatically affected by the introduction of invasive plants. The two training sites include Camp Ripley with an area covering 52,847 acres and Arden Hills Army Training Site (AHATS) with an area covering 1,520 acres. Since the invasion of these plants, biodiversity within these military sites have decreased drastically. Previous research indicates that plants within these two training sites have adapted and thrived in new locations very rapidly. Unsuccessful attempts have been made to eradicate or control these invasive species due to the lack of a comprehensive approach including a well scheduled plan to control invasive plants in specific situations. Recent research provides a complete mapping and future distribution of all invasive plants within these two military training sites. The main goal of this study is to evaluate control methods on invasive plants for a long-term integrated management program. In order to produce an efficient program for invasive plant species, it is critical to determine the most effective control method or (combination of) for each one of the target species. The timing of these control methods is critical and during three growing seasons target plants will be treated with mechanical procedures, biological, and chemical agents. These control methods if effective should show a decrease in invasive plant density within their test plots. A statistical analysis will be conducted using an analysis of variance comparing the plots and control techniques used. The following plants were selected for control based on their distribution throughout both training sites: spotted knapweed *Centaurea maculosa*, leafy spurge *Euphorbia esula*, common tansy *Tanacetum vulgare*, and cypress spurge *Euphorbia cyparissias*. The experimental design includes three sets of permanent plots for each species on the basis of the distribution of the invasive plant and its successional stage.

Presentation Index: T2 **Time:** 5:45
Department: Biological Sciences

Student Presenter(s)
Eisterhold, Joe

Faculty Sponsor(s)
Arriagada, Jorge

Effects of Post-Fire Fuels Treatments on Vertebrate Communities in Southeastern Montana

Coarse woody debris (CWD) provides cover, foraging habitat and breeding sites for a number of small mammal and cavity nesting bird species. Removal of CWD following forest wildfires, in an attempt to reduce subsequent fire hazard, may have negative consequences for small vertebrate species. We investigated how the removal of CWD following a wildfire in a southeastern Montana ponderosa pine (*Pinus ponderosa*) forest affected hairy woodpecker (*Picoides villosus*), red-headed woodpecker (*Melanerpes erythrocephalus*), northern flicker (*Colaptes chrysoides*), eastern bluebird (*Sialia sialia*), mountain bluebird (*Sialia currucoides*) and deer mouse (*Peromyscus maniculatus*). We estimated densities of deer mouse and cavity nesting birds among five treatments in 2004: post-fire commercial logging (C), post-fire commercial logging followed by tree planting (PC), non-commercial fuels reduction (NC), and no treatment (NT). We also compared nest survival of cavity nesting birds among NT, NC, and C treatments using Mayfield estimates. Deer mouse density was significantly higher in commercially logged treatments (C & PC) than in treatments NC or T. Deer mouse may benefit from higher volume of ground CWD resulting from slash created by harvest operations. Nest survival estimates were similar across treatments. We interpret our estimates with caution due to a higher occurrence of nest predation and nest take-over events by red-headed woodpeckers in treatment C. Removal of standing CWD may not impact nest survival of cavity nesters as a whole, but may give rise to a shift toward species that favor savannah. We will continue gathering field data in summer 2005 and combine them with 2004 results to determine how CWD removal impacts small vertebrate density and cavity nest survival.

Presentation Index: T3 **Time:** 6:00
Department: Biological Sciences

Student Presenter(s)
Kronland, William

Faculty Sponsor(s)
Restani, Marco

Pollution Diffusion at SCSU

The heating plant at SCSU exudes 100 tons of NOx and SO2 every year. Is this a harmful level of pollutants for students in dorms at SCSU? We will derive and study partial differential equations that estimate the concentrations of these chemicals in the ambient air. Beginning with a simple model for dispersion, we generate a more complex equation that takes account of advection (wind conditions) and diffusion and turbulence, the latter two of which we model as a random walk.

Presentation Index: T4 **Time:** 6:15
Department: Mathematics

Student Presenter(s)
Khan, Tahir

Faculty Sponsor(s)
Keith, Sandra

Effects of Oxovanadium Complexes (possible anti-cancer compounds) on the Early Development of *Xenopus laevis*

Oxovanadium complexes are known to have many biological effects, including possible anti-cancer and anti-diabetic properties. Three oxovanadium complexes (VO(dbm)2, VO(pbd)2, and VO(tmh)2) were tested for any possible effects on the early development of Xenopus laevis. The compounds were tested by exposing Xenopus laevis embryos to one of the oxovanadium complexes and allowing the tadpoles to develop for a minimum of 96 hours. The complexes were tested at three different levels of concentration: 10 ?M, 1 ?M, and 0.1 ?M. Tadpoles were closely monitored for developmental problems.

Presentation Index: T5 **Time:** 6:30
Department: Biological Sciences

Student Presenter(s)
Piotrowski, Aaron

Faculty Sponsor(s)
Schuh, Timothy

Crisis Pregnancy Centers: Are Women Being Misled?

Crisis Pregnancy Centers like the Pregnancy Resource Center of St. Cloud, MN often choose names that suggest impartiality in order to confuse unsuspecting clients seeking legitimate clinics. Crisis Pregnancy Centers offer free over-the-counter pregnancy tests to lure women experiencing an unplanned pregnancy to their facilities under false pretenses, deprive them of accurate information needed to make a fully informed choice, and use fear tactics to dissuade them from choosing legal abortions.

Presentation Index: U1 **Time:** 5:30
Department: Human Relations and Multicultural Education

Student Presenter(s)
Ingmire Seminitis, Julie

Faculty Sponsor(s)
Andrzejewski, Julie

Leading Ladies: Modeling the Ideal Woman in 1937-1941 Hollywood Women's Films

Women's films centralized women during an era which lauded "the forgotten man." The films depicted the horrors and successes of female independence and the problems and happiness of marriage. They dealt with conflicts women faced while working outside the home and strengthening their authority within the home. Every heroine portrayed a woman that audiences could aspire to be or chastise for her mistakes. Women's films provided a model for female behavior at a time when women were uncertain about their own roles.
I examined some of the most popular films of all time - including classics such as *Bringing up Baby*, *His Girl Friday*, *Gone with the Wind*, and *Rebecca* - and studied smart-talking characters played by revered actresses like Katharine Hepburn, Bette Davis, and Ginger Rogers. I considered how the heroines of 1937-1941 Hollywood women's films reflected concepts of female behavior and femininity and discovered their mysterious and often conflicting message on the ideal role of women. Heroines in women's film were feminine yet strong, witty yet gorgeous, in control of their own lives yet happy to choose the socially acceptable path of wife and mother.

Presentation Index: U2 **Time:** 5:45
Department: History

Student Presenter(s)
Enger, Kathryn

Faculty Sponsor(s)
Atkins, Annette
Jones, Kenneth
Tomhave Blauvelt, Martha

The Negative Portrayal of Women in the Media

Has media perpetuated women in a negative light? Through a project called Outrageous Acts, our women's studies group researched, raised consciousness to, and challenged the norms and images of women in the advertising industry. An outrageous act is an unusual and unexpected act that raises awareness about feminism and empowers women. We chose our topic, because we noticed how we'd become numb to these offensive images that clearly showed women in a negative light. We started with a series of letter writing, surveys, and in depth analysis. Through our analysis we found disturbing evidence to prove that this is, in fact, an issue in today's media. Once we began the project, we learned we not only wanted to create awareness, but wanted to empower women. We presented this issue to the campus by organizing a booth in the Atwood Memorial Center. It encompassed images of women, video, facts, pamphlets, posters, and pins to support our campaign and to help others keep an eye out for the negative portrayals of women in advertising. Through our surveys we found that 70% of women weren't comfortable with their bodies and had been on a diet, while 70% of men said they were comfortable with their bodies and hadn't used a diet. What does this say about our society or even about campus? It proves that there is a gap between men and women in body image. Is it because the media portrays women so poorly? In this presentation, we will discuss our research, experiences, findings and journey towards the empowerment of women. We will show a series of images, facts, video, advertisements, etc. that will not only make us consciously aware of this issue, but will "keep an eye out for the negative portrayals of women in advertising" that we have become numb to.

Presentation Index: U3 **Time:** 6:00
Department: Women's Studies

Student Presenter(s)
Steinleitner, Beth
Chesborough, Sarah
Brehmer, Kathleen
Azadi, Parivash

Faculty Sponsor(s)
Mwangi, Mumbi

An Investigation into the Murders of Women in Juarez and Chihuahua, Mexico

This research thesis is a descriptive study focusing on the murders of 300 women in the border-town of Juarez, Mexico over the last 12 years. Questions addressed include: What are the characteristics of the murders? What internal and external factors may be contributing to the murders? Why have the murders continued? And then, what is the role of the police? Investigation and interviews suggest that a combination of several factors contributes to the environment that allows these crimes to continue.

Presentation Index: U4 **Time:** 6:15
Department: Criminal Justice

Student Presenter(s)
Harris, Sara

Faculty Sponsor(s)
Gilbertson, Douglas Lee

The Economic Characteristics of the Airline Industry

The bigger airlines attain economies of scope through the formation of alliances with other airlines. Although the US passenger airline system has been traditionally dominated by American Airlines; Continental Airlines, Delta, North and Southwest, United Airlines, and US Airways generating annual revenues exceeding one billion dollars. This strict control inhibited the growth of the airline industry. An article about the ATSB's rejection of a $1.1 billion loan guarantee for United Airlines outlines the problems in the airline industry. Some factors like high prices and low public confidence result in low load factor on airline flights. The largest profit airlines make is from regular and business passengers that fly frequently. One airline that took advantage of price strategy was Southwest. Airlines have a high fixed cost and a low variable cost. This means no matter how many passengers travel, the airline has a high fixed cost. The airline industry is very competitive. Labor makes up approximately 40% of airline expenses. Airlines have to pay commission to the outside firms, which book customers on their airline. West Jet and Air Canada are Canada's two largest airlines. Both airlines have actually increased passenger load factor since last year (Wong, 2004). Load factor is an important role for airlines to profit because without passengers there would be no airlines.

Presentation Index: V1 **Time:** 5:30
Department: Aviation

Student Presenter(s)
Melsness, Paul
Kasprzak, Josh
Smith, Justin T.

Faculty Sponsor(s)
Aceves, Robert

Siemens' Internship

Spring semester 2004 I participated in SCSU's business study abroad program in Ingolstadt Germany. After completing the program I had the opportunity to stay in Germany and intern for Siemens AG in Munich. Within Siemens I worked for Information and Communication Networks (ICN). ICN has 33,000 employees who work in over 160 different countries. Within ICN there are separate companies, referred to as Local Companies, normally in different countries or certain geographic regions. Inside these Local Companies there can be up to three business units; Enterprise Networks, Carrier Networks, and Carrier Service. Within ICN I worked for Strategic Procurement, which oversees procurement operations for all Local Companies in ICN. My duties involved conducting financial analysis and development of procurement reports for local companies.

Presentation Index: V2 **Time:** 5:45
Department: Management

Student Presenter(s)
Gehrmann, Tyler

Faculty Sponsor(s)
Davis, Elaine

Airbus und europaeische Zusammenarbeit. (Airbus and European Cooperation)

This paper is an examination of the Airbus success story. Airbus is a multinational European company founded in the 1970's which has grown into, some may argue, the leader in airplane manufacturing. Germany, France, Great Britain, and Spain found it better to quit competing among one another and to join forces to compete with American rival, Boeing. They have done this amidst much skepticism about the possibility of European cooperation and have proven that individual countries can work together to compete in the global market. Their teamwork proves that different cultures can bring differing viewpoints to the drawing board and succeed on the basis of innovation. The latest accomplishment of the joint venture is the introduction of the record breaking A380, which is sure to change the air travel industry.

Presentation Index: V3 **Time:** 6:00
Department: Foreign Languages and Literature

Student Presenter(s)
Notsch, Shana

Faculty Sponsor(s)
Mueller, Isolde

DaimlerCrysler

The project is an analysis of the DaimlerChrysler merger. The primary area of focus is the cultural implications that have caused the merged company to not fulfill expectations. The project will begin with a summary of the merger including its beginning, the early years, and its present state. The summary will show trends that occurred within the merger mostly due to cultural differences. A cultural analysis will be conducted based on each firm's home culture, Chrysler Corporation being American and Daimler-Benz being German. The differences will be examined using Hofstede's cultural analysis. Once an understanding of each culture is apparent, then conclusions will follow as to how cultural differences affected the success of the international merger of two automobile companies. Differences in business of the two countries will be illustrated and examined to form conclusions on how to decrease cultural implications in global mergers.

Presentation Index: V4 **Time:** 6:15
Department: Foreign Languages and Literature

Student Presenter(s)
Fuchsteiner, Adam

Faculty Sponsor(s)
Mueller, Isolde

Vacuum Cup Refinement for Park Industries, Inc.

The presentation will show how we took an existing product of a vacuum cup that Park Ind. manufactures for their granite milling machines, and how we are going to reverse engineer this product and make it perform better than the current cup design. We will cover the analysis that we did to judge the inconsistencies that were addressed in the current design. We will show our design criteria that we put together in order to make a better cup design. We will show the tests that we performed to learn the coefficient of friction. We will also show products and steps it took to arrive at a finished product. Finally, we will talk about the final product that we created and how it meets our design criteria for the project, as well as show the finished project along with its

Presentation Index: W1 **Time:** 5:30
Department: Mechanical and Manufacturing Engineering

Student Presenter(s)	**Faculty Sponsor(s)**
Pfeffer, Derek	Covey, Steve
Karls, Vince	Reker, Kevin

A Study of the Effect of Bit Torrent on Network Performance

Peer-to-Peer (P2P) networks are a popular way of distributing files between multiple, remote users. Network administrators complain P2P traffics causes high network delay and over utilization, however, Cohen, a P2P developer claims that his application, Bit Torrent (BT), does not negatively impact network performance even though it leads to high utilization. However, not many studies have been done to verify this assumption. The aim of this study is to measure how BT affects the network performance. In order to measure the BT traffic, a network is built and BT traffic generated by multiple BT clients. The transactions are then collected and analyzed.

Presentation Index: W2 **Time:** 5:45
Department: Statistics

Student Presenter(s)	**Faculty Sponsor(s)**
Lo, Siu-Cheong	Lawal, Banji

Cloning and Characterization of a Polymorphic Class 3 Aldehyde Dehydrogenase

There are 17 enzymes that belong to the super family of the human Aldehyde Dehydrogenase (ALDH). Each of them catalyzes the oxidation of aldehydes in the presence of NAD or NADH and exhibit broad substrate specificity. Human ALDH exhibits allelic and non-allelic polymorphisms. Class-3ALDH (ALDH3A1) in particular is known to have allelic polymorphisms and the phenotypes are known to protest cells from the toxic effects of aldehydes generated in vivo. To study the chemical reactions catalyzed by these polymorphic forms and to compare them, large quantities of these enzymes are required. This can be achieved through recombinant DNA techniques. We have recently acquired cDNA coding for ALDH3A1 polymorphs. In this study we will subclone the cDNA into an expression vector that will not only overproduce the protein but will also allow affinity purification of the enzyme via the addition of a protein tag (His-tag).

Presentation Index: W3 **Time:** 6:00
Department: Chemistry

Student Presenter(s)	**Faculty Sponsor(s)**
Kallarackal, Jennifer	Sreerama, Lakshmaiah

The Physiological Effects of Reiki on the Chakra System

Chakra is one of the alternative and complementary medial techniques that is increasingly being used in America. It involves the manipulation of energy fields surrounding an individual to achieve therapy for a growing number of ailments. Currently, few systematic studies have evaluated the physiological basis of the alleged therapeutic benefits of this process. A collaborative research pilot study between the biology and nursing departments was conducted spring 2004. The objectives of this pilot study were to determine the effects of Chakra on several physiological indices and secondly to determine if the effect, if any, is independent on gender. Eleven healthy subjects were used in the study. The variables monitored included body temperature, systolic and diastolic blood pressures, pulse rate, and salivary cortisol levels. These variables were measured before, at onset, immediately after, and 24 hours after the completion of either a sham or a Chakra session performed by a professional Chakra therapist. The results of the pilot study were inconclusive as to the effects of Chakra on this small sample.

Presentation Index: W4 **Time:** 6:15
Department: Biological Sciences

Student Presenter(s)
Kokula, Mary

Faculty Sponsor(s)
Gazal, Oladele
Simones, Joyce
Tubbiola, Maureen

English with an Attitude

This paper addresses the issue of attitudes that some Latino(a) high school students have about learning English. It also suggests how these attitudes can influence academic success. To investigate positive or negative attitudes about these phenomena, I used audio-taped interviews to gather the data in a semi-structured environment. Results suggests that Latino(a) students have experienced negative and/or positive situations when first learning the English language and those experiences affected their attitudes toward learning the language and indirectly affected their school success. Implications of the study are the need to understand each individual student's initial experience with the target language; whether it was positive or negative. Being knowledgeable about the student's experience will help us better understand and serve the growing Latino population. In addition, teachers should be mindful of the great influence that their comments can have on a person's academic career.

Presentation Index: X1 **Time:** 5:30
Department: English

Student Presenter(s)
Cordes, Nancy

Faculty Sponsor(s)
Robinson, James

The Diary of an ESL Learner Teaching Freshman Composition

The purpose of this presentation is to share with other American and international students who plan to teach English as a second, foreign or as a first language my reflections about some of the myths and realities related to the teaching of freshman composition. By sharing my reflections, I wish to encourage international graduate students, with a good grasp of English of course, to envisage choosing this program for an assistantship. As a teaching assistant, my short experience with the 191 students helped me recognize some difficulties that students have in academic English in particular. It did also boost my self confidence as a teacher who can meet not just the needs of international students but the ones of native speakers of English as well. It also taught me that as long as I prepare my course seriously; as long as I keep a positive and open attitude towards my students, and I am willing to share my own views of the world; as long as I view my difference as an advantage rather than a handicap; and as long as I am not afraid to reconsider my decisions when I don't make the best choice, there is no reason why I can't teach this class. Of course I will try to systematize my presentation by being more specific about my strengths and challenges. At the end of the presentation, I will include some recommendations about what I consider as tips for leading a 191 class successfully.

Presentation Index: X2 **Time:** 5:50
Department: English

Student Presenter(s)
Elmeski, Mohammed

Faculty Sponsor(s)
Philippot, Raymond

Sing a Song o' Syntax

Can music be an effective tool for teaching grammar to ESL students? What qualities should music incorporate to enhance effectiveness? How quickly can results be expected? I attempted to answer these questions through the research for my Master's thesis in TESL. My project included choosing grammatical structures that challenge the English Language Learner; writing songs to incorporate the structures; teaching those structures to elementary age ESL students, with music for the test group and without music for the control group; and analyzing the findings. This presentation includes an explanation of how the music was written, a demonstration of how it was used, and a discussion of the results.

Presentation Index: X3 **Time:** 6:10
Department: English

Student Presenter(s)
Fagerland, Rhoda

Faculty Sponsor(s)
Teutsch-Dwyer, Marya

Renaissance Musical Influence in Alan Hovhaness's *Magnificat*

Modern composer Alan Hovhaness (1911–2000) was highly informed of Renaissance musical practices and aesthetics when he composed his Magnificat. The presence of polyphony, the simultaneous harmonious performance of two or more melodies, indicates a keen interest in Renaissance musical developments. Other considerations, such as decisions regarding orchestration, adjustments in intonation, and use of particular scales also demonstrate the composer's familiarity with early music. Most importantly, however, is the overall aesthetic of the piece: its structure, beauty, and simplicity in the modern musical language. Yet it does not quote any Renaissance music directly; all of the influence lies within the music. In Magnificat, Hovhaness succeeded in his attempt to "suggest the mystery, inspiration, and mysticism of early Christianity."

Presentation Index: Y1 **Time:** 5:30
Department: Foreign Languages and Literature

Student Presenter(s)
Braun, Noah

Faculty Sponsor(s)
Splittgerber, Lisa

Italian Renaissance Villas and Gardens

The Italian Renaissance was a birth of new culture that had a major impact on all aspects of life and continues to impact our lives today. Two fortunate structures that experienced positive influences from the revival of old ideas and new creation were the villas and gardens of Italy. Unlike earlier periods, the Renaissance produced a world view that was safer and lighter and villas reflected this security. Humans and nature were to exist in harmony; hence the open structure of the Italian Renaissance villa. With the improvements made to the villa, the gardens also experienced change. The gardens took on many different forms, which included: water gardens, pleasure gardens, and kitchen gardens, all serving their own purpose. People with enough money were able to enjoy leisure activities and the gardens of the Renaissance reveal this pattern which has lasted until our present

Presentation Index: Y2 **Time:** 5:45
Department: Foreign Languages and Literature

Student Presenter(s)
Nguyen, Emily

Faculty Sponsor(s)
Splittgerber, Lisa

Swaying in the Wind: Galileo

Galileo Galilei, an extraordinary mathematician, astronomer and physicist, discovered many physical and natural concepts of our world, and helped frame our scientific world view. First desiring to become part of the Calmaldose Order while enrolled in medical school, he quickly left the idea of these vocations after discovering his passion for mathematics. Galileo taught Euclidean Geometry and Astronomy at universities, such as the University of Padua, but his true interest lay in the natural and physical world, leading him to conduct many experiments in order to test his formulated theories. This led to the Scientific Method of Experimentation, a truly revolutionary idea at the time. Galileo aided physics through his discoveries on motion regarding free fall and his principle of relativity. After the Dutch discovered the telescope, Galileo was able to create the refracting telescope, greatly magnifying the celestial bodies, and was thus able to discover the satellites of Jupiter, the many tiny stars that compose the Milky Way, and craters and "mountains" on the Earth's moon. Galileo's astronomical discoveries helped him reaffirm and accept Copernicus' heliocentric theory. Put on trial for his views, the Council of Trent found him guilty of heresy. So, the ingenious discoverer of so many natural and physical truths in our universe was sentenced to house arrest for the remainder of life, because the majority of the population, including people in high positions, was not yet ready to accept the paradigm shift proposed by the heliocentric theory.

Presentation Index: Y3 **Time:** 6:00
Department: Foreign Languages and Literature

Student Presenter(s)
Huttes, Corinn

Faculty Sponsor(s)
Splittgerber, Lisa

Beauties with Brains: The Courtesans of the Renaissance

During the Renaissance, women had very few career choices. One of the most liberal was that of a courtesan. These women were allowed very much the same freedoms as men; however they also came with high risks.

Presentation Index: Y4 **Time:** 6:15
Department: Foreign Languages and Literature

Student Presenter(s)
Laingen, Kristina

Faculty Sponsor(s)
Splittgerber, Lisa

Leonardo da Vinci

This paper is a look into the life of Leonardo Da Vinci. It explores his personal life, as well as his life as an artist. The paper covers some of his major works including the Mona Lisa, The Last Supper, and The Virgin and Child with Saint Anne. The paper also discusses his work done in Science and Engineering. Da Vinci contributed a great deal to human biology with his work on cadavers, and also the destruction of humans with his work on war machines. Leonardo Da Vinci was a "Renaissance Man" whose contributions continue to impact our world today.

Presentation Index: Y5 **Time:** 6:30
Department: Foreign Languages and Literature

Student Presenter(s)
Fink, Celia
Wiant, Molly

Faculty Sponsor(s)
Splittgerber, Lisa

The Fall of the Roman Catholic Church During the Italian Renaissance

Many changes occurred during the Italian Renaissance, especially throughout the Church. The drastic life changes occurring to normal citizens can also be seen to the popes and clergy of the Italian Renaissance. Sexual escapades, family scandals, and the abuse of power and wealth invoked the fall of the Church from its supreme position at the heart of every layperson's life. As the Church was left not to be trusted, other sects of Christianity emerged. This paper encompasses many reasons why the Church lost so much of its power, including how it affected the changes taken place during the Italian Renaissance.

Presentation Index: Y6 **Time:** 6:45
Department: Foreign Languages and Literature

Student Presenter(s)
Peterson, Jaclyn

Faculty Sponsor(s)
Splittgerber, Lisa

Hands-on Earth Science

Learning science through reading, while important, does not immediately translate into understanding. Many students learn best by seeing and touching, in other words hands-on. In developing activities for science keeping the activity relevant to something the student knows was key. All activities are relevant to Minnesota or the school in which they are taught in. The developed activities are appropriate for 9th grade Earth Science in the units of astronomy, meteorology, and geology.

Presentation Index: Z1 **Time:** 6:30
Department: Earth and Atmospheric Science

Student Presenter(s)
Pelot, Adam

Faculty Sponsor(s)
Pound, Kate

Decision Support Tool for Wetlands Restoration

It has been well known that a vast majority of wetlands in Minnesota have been drained or altered, causing a significant loss of wildlife habitat, increased downstream flooding and water quality problems. Substantial efforts are underway to restore wetlands and regain those losses. A Restorable Wetlands Working Group (RWWG), with representatives from more than a dozen federal, state, local and non-government organizations, has developed a database of more than 350,000 candidate wetland restoration sites, located in an eight-county region in west-central Minnesota. Through RWWG sponsorship, a South Dakota State University team has identified these sites, using an aerial photo-interpretation protocol. However, in using this extensive database, it has been assumed that field assessment will be required to select successful candidates. An obvious next question arises: Can this field assessment be directed to a more limited number of candidate sites? In particular, can sites be selected to provide the greatest potential public benefit, if restored to wetland? Under a grant from the U.S. Fish and Wildlife Service, we have developed a GIS-based "decision support tool" for scoring all of these candidate sites through an analysis of nearby landscape features. We analyzed existing digital representations of land cover, soil types, topography, and drainage patterns in each drainage basin throughout the eight-county region. Then we created an updateable geographic information system (GIS) database to "score" and display all candidate restorable wetland sites. This initial effort is directed toward estimating potential water quality benefits. Future development will also be directed toward wildlife habitat and flood abatement benefits.

Presentation Index: Z2 **Time:** 6:30
Department: Environmental and Technological Studies

Student Presenter(s)
Ellickson, Jim

Faculty Sponsor(s)
Rose, Charles

Methademic

The number of individuals seeking treatment for methamphetamine dependence has drastically increased in the past five years and continues to grow each year. Currently methamphetamine dependence is considered an epidemic by many professionals in the field of chemical dependency treatment. This study looks at when and where the epidemic originated, and who was involved. It contains historical data from several sources in order to provide chemical dependency professionals with a more complete understanding of how to effectively anticipate, treat, and curb its growth.

Presentation Index: Z3 **Time:** 6:30
Department: Educational Leadership and Community Psychology

Student Presenter(s)
Caris, Jeffrey

Faculty Sponsor(s)
Jorgensen, Leeann

Multiple Child Monitoring System

Many children of age 2-5 years have drowned in swimming pools or wandered away too far from their parent's sight. Parents find it very difficult to look after their children because of their daily activities. This is true even when both parents are home. The objective of our senior design project is to design a user friendly multiple child monitoring system that will help parents keep an extra eye on their children. The system consists of one parent unit and two child units. The parent unit consists of a microcontroller, decoder chip, display unit (Liquid Crystal Display), soft touch keypad, alarm, LEDs (Light Emitting Diodes), receiver module and an antenna. It can be powered by AC (Alternating Current) outlet or DC (Direct Current) batteries. The child unit consists of a microcontroller, water sensor circuit, transmitter module, internal antenna and low battery indicator. It alerts the parent unit if the child unit is out of range or if it detects water. The range of this system is approximately 500 feet in an open ground. It is designed to be used at house backyard. The user can enter the name of two children whom they want to monitor. The LEDs in the system indicates the distance between the parent unit and the child units. The two green LEDs symbolizes the safe range, the yellow LED symbolizes the alert range, and the red LED symbolizes the out of range.

Presentation Index: Z4 **Time:** 6:30
Department: Electrical and Computer Engineering

Student Presenter(s)
Sherchan, Sudip
Upadhyaya, Prakash

Faculty Sponsor(s)
Petzold, Mark

Wireless Baby Music Mobile

Currently baby monitors and music mobiles are sold separately on the market. Our objective is to design a wireless baby music mobile system which combines features of baby monitoring systems and music mobiles. Our design consists of two units, a child unit and a parent unit. The child unit houses the music mobile, which also serves as a monitor by alerting the parent unit when the baby makes noise. The parent unit receives the sound wirelessly and can remotely control the child unit to play/stop a song, and/or turn on/off a small motor with lights on top of the baby's crib to distract and comfort the baby as a temporary solution until someone can get to the baby. Another characteristic of the child unit is the noise sensitivity control which detects comparatively high frequency sound which eliminates the possibility of picking every sound that baby makes. Unlike other music mobile systems, we can download audio files into the MMC (Multimedia Card) and the LCD displays what song is being played. This added feature makes it possible to play parents' recording on the music mobile.

Presentation Index: Z5 **Time:** 6:30
Department: Electrical and Computer Engineering

Student Presenter(s)
Sedhain, Anita
Karki, Pradyumna

Faculty Sponsor(s)
Hou, Ling

What Are Students Conceptions about Atoms?

This investigation was conducted to learn what conceptions college students have about atoms. A content analysis was performed on textbooks and published journal articles in order to determine the different ways atoms are taught and in what sequence students learn about atoms. Student surveys were given to prep, general, and organic chemistry students to determine their knowledge about atoms. A set of students used the think-aloud method to describe what they were thinking about while drawing an atom. The content analysis, student surveys, and data from the think-alouds provide the information needed to become aware of a student's conceptions and misconceptions while going through the learning process of atoms.

Presentation Index: Z6 **Time:** 6:30
Department: Chemistry

Student Presenter(s)
Marston, Jessica

Faculty Sponsor(s)
Krystyniak, Rebecca

Toxicity of Synthesized Ruthenium Complexes That Show Anti-tumor Properties

With cancer now being one of the main causes of death in the United States, the research for this area has grown significantly in the last couple decades. Platinum coordination compounds are widely used as anti-tumor drugs to fight cancer, with the main front runner being cisplatin. The clinical efficacy of these anticancer drugs is diminished by acquired tumor resistance. In order to overcome these limitations, there is an intense effort to design new transition-metal-based compounds that are capable of overcoming problems associated with cisplatin chemotherapy while delivering the therapeutic effect. This research focuses on particular metal complexes, vanadium, titanium, and ruthenium metals with EDTA-type ligands, their anti-tumor activities, their interactions with DNA, and their toxicity. Five different ruthenium complexes with EDTA-type ligands have been synthesized and are currently being tested. The toxicity of the metal complexes on particular cancer cells is not known. Therefore, one of the objectives is not only to determine the toxicity of the metal complexes on human breast MCF 7/0 cells, but to also determine what the toxic effects are due to, whether it is the ligands, the metal center, or the entire complex.

Presentation Index: Z7 **Time:** 6:30
Department: Chemistry

Student Presenter(s)
Peterson, Amanda

Faculty Sponsor(s)
Sreerama, Lakshmaiah

Should Gray Wolves be Protected?

The question researched was whether or not the gray wolf should be protected. The first section of the study focused on the history and protection of the gray wolf, and the past attitudes held about their protection. Then, being a prospective teacher, I wanted to know what a selective group of students knew about the subject of gray wolves and how they are being protected now, how they have been protected, and what they thought should be done about the issue. I composed four basic research questions and seven additional questions, and compiled them into a survey which I then administered to the students. After collecting the surveys and combining all of the student's responses, I was then able to determine what information the students were lacking on the topic, and what they were informed of. Finally, I took this information and created a unit lesson plan on the subject of protecting gray wolves. I then focused the unit on how we as teachers and our students can bring more awareness of this topic to our own community.

Presentation Index: Z8 **Time:** 6:30
Department: Biological Sciences

Student Presenter(s)
Walker, Katie

Faculty Sponsor(s)
Minger, Mark

Peak to Average Power Reduction in OFDM

OFDM or orthogonal frequency division multiplexing is multi-carrier communication system. Using OFDM we can increase the transmission rate by splitting the serial data to be transmitted on to number of sub-carriers but OFDM signals suffer from large envelope fluctuations resulting in large PAPR. This large PAPR causes performance degradation of transmitting power amplifier. The paper I have chosen tries to reduce PAPR by introducing a new method. This new method reduces the PAPR in OFDM signals using companding transform. Unlike other methods this one has reduced complexity and improved BER. This method works by compressing large signals and enlarging small signals.

Presentation Index: Z9 **Time:** 6:30
Department: Electrical and Computer Engineering

Student Presenter(s)
Konduri, Balaji

Faculty Sponsor(s)
Yao, Aiping

Oxidation of Ethylene Glycol Ether Aldehydes by Aldehyde Dehydrogenases of Xenopus

Aldehyde dehydrogenases (ALDHs) are important catalysts in detoxification of aldehydes of invivo and invitro origin. Ethylene glycol ethers (EGEs) are primary alcohols commonly used in industrial and household products. Exposure to EGEs leads to various toxicities including metabolic acidosis and carcinogenesis. EGE derived carboxylic acids are responsible for these toxicities. Invivo EGE derived carboxylic acids are produced by ALDH-catalyzed reactions. EGEs are routinely discharged into waterways, accordingly. The first sets of organisms exposed to EGEs are Xenopus and Fathead Minnows. Whether Xenopus metabolize EGEs is not known. Therefore, the goal of this study is to identify the presence of ALDHs in Xenopus tissues, isolate the enzymes and determine their ability to oxidize EGE aldehydes to their acids. Studies utilizing histochemical staining of Xenopus tissues and EGE aldehydes as substrates for ALDHs are being developed. The ongoing study is expected to identify the presence of ALDHs in Xenopus tissues.

Presentation Index: Z10 **Time:** 6:30
Department: Biological Sciences

Student Presenter(s)
Peterson, Cassandra

Faculty Sponsor(s)
Schuh, Timothy
Sreerama, Lakshmaiah

Meeker County Emergency Preparedness

Federal and state agencies are requesting emergency preparedness at the county level. Meeker County Public Health, as apart of this planning effort, is contacting all licensed RN's and LPN's who reside in this county to ask if they would be willing to volunteer in the event in an emergency situation. The project of developing a volunteer list of RN's and LPN's fits the overall need of Meeker County Public Health to allow them to more fully prepare for an emergency situation.

Presentation Index: Z11 **Time:** 6:30
Department: Nursing Science

Student Presenter(s)
Blonigen, Janelle
Gebhardt, Angie
Hoffman, Janell
Illies, Angie
Kotaska, Carolyn
Lieser, Tanya
Loch, Jim
Keller, Cathy
Vereen, Shalei

Faculty Sponsor(s)
Lenz, Brenda
Johnson Warner, Susan

Students Beliefs about GMOs

Genetically modified organisms have become a popular topic among scientists, environmental groups, the public and the government in recent years. Many organizations and the public are concerned about what genetically modified organisms may do to the environment, or even worse, human health. The purpose of my project was to examine the beliefs of students in biology 262 about genetically modified organisms.

Presentation Index: Z12 **Time:** 6:30
Department: Biological Sciences

Student Presenter(s)
Dettman, Leah

Faculty Sponsor(s)
Minger, Mark

Mille Lacs County Seatbelt Use

The targeted group for the community assessment was Milaca High School students and faculty. The project was selected because the Department of Public Safety and Traffic Safety gave Mille Lacs county public health a complete grant titled Mille Lacs County Public Health Safe Communities Workplan 2005. The steps used in the data collection process included an observation, a focus group, a survey, and collecting data and statistics for the county. All students were involved in all the steps for collecting the data. Anthony Buttacavoli is the health educator in Mille Lacs County who lead the grant project, acted as a liaison between the Milaca High School and the student nurses, and assisted in the seatbelt observation and focus group. Additional data was collected from the Minnesota Department of Public Safety (office of traffic safety), and the National Highway Traffic Safety Administration.

Presentation Index: Z13 **Time:** 6:30
Department: Nursing Science

Student Presenter(s)
Neis, Carissa
Wentland , Laura
Franklin, Rochelle
Laurila, Jennifer
Schnabel, Christiana

Faculty Sponsor(s)
Lenz, Brenda

Comparing and Contrasting the Diagnosis of Compulsion Versus Addiction

This study compared and contrasted the diagnosis of compulsion with diagnosis of addiction with implications towards treatment by health professionals. This research project was done using two forms of data collection: peer-reviewed journal articles and data collected from a survey sent to health professionals. We also explored brain chemistry, structure, and activity as possible variables of influence in diagnosis and treatment of behaviors classified as addictive or compulsive behaviors. Journal articles were retrieved by searching databases using the key words compulsion, addiction, brain activity, impulse, brain mapping, habit and mental health. Survey questions were composed, amended, reviewed before receiving statistical evaluation. Surveys were sent to 150 health professionals, including physicians, psychiatrists, psychologists, mental health practitioners and licensed alcohol and drug counselors, from Central Minnesota practicing in the target city of St. Cloud, Minnesota and surrounding area. Summarizations and conclusions were drawn from the analyses and review of the collected data. Statistical analysis of data gathered and a model help illustrate the interaction and intensity of compulsion and addiction which integrated information gathered from both data sources.

Presentation Index: Z14 **Time:** 6:30
Department: Educational Leadership and Community Psychology

Student Presenter(s)
Fett, Allison
Levenhagen, Anna
Walz, Benedict

Faculty Sponsor(s)
Jorgensen, Leeann

The Relationship between Self-disclosure and Loneliness

The research investigates the relationship between self-disclosure and loneliness among international (non-American), and non-international (American) college students. The research questions are "does self-disclosure affect levels of loneliness among college students?", and "does the relationship between self-disclosure and loneliness differ among international and non-international students?" The hypotheses are: higher self-disclosure would cause less level of loneliness; and there is a difference among international and non-international students about the relationship between self-disclosure and loneliness. The independent variables are self-disclosure and cultural background of subjects - American or non-American-. The dependent variable is levels of loneliness. The level of self-disclosure and loneliness will be measured by using questionnaires. The data will be analyzed and compared among international and non-international students. The study is conducted at St. Cloud State University.

Presentation Index: Z15 **Time:** 6:30
Department: Psychology

Student Presenter(s)
Kishibe, Keiko

Faculty Sponsor(s)
Kulas, John

Design, Construction, and Validation of a Resonance Enhanced Multi-photon Ionization (REMPI) System for the Detection of Gas Phase, Aromatic Hydrocarbons

As part of a NSF Major Research Instrumentation grant, the goal was to construct a laser-based instrument for college level, upper level chemistry instruction at SCSU. The laser system employs Resonance Enhanced Multi-photon Ionization (REMPI) to detect gas phase aromatic compounds at the part-per-billion by volume (ppb-v) level. The system was recently tested using a toluene permeation tube and it shows detection limits of approximately 50 ppb-v in ambient air conditions.

Presentation Index: Z16 **Time:** 6:30
Department: Chemistry

Student Presenter(s)
Henderson, Adam

Faculty Sponsor(s)
Dvorak, Michael

Heat Acclimation in *Peromyscus eremicus*

We compared metabolic rate and body composition in two groups of *P. eremicus* housed under for three weeks at room temperature (23 oC; control mice, N =9) or in constant heat (35 oC; HAC mice, N = 11). We measured oxygen consumption and total evaporative water loss at 26, 32, and 38 oC. Body mass was higher in control mice (18.8 + 2.3 g; mean + SD) than in HAC mice (17.1 + 1.3 g). HAC mice had higher total body water (72.6 + 2.6 %, range 70.3 – 75.4 %, N = 3) compared to control mice (66.3 + 2.9%, range 64.3-69.7, N = 3). We found no differences in total evaporative water loss or VO2 between the two groups. Both HAC and control mice dissipated more than 50% of metabolic heat production by evaporation at 38oC. Plasma osmolarity was similar between groups (pooled mean 329 + 23 mOsm/kg), but hematocrit was higher in the HAC mice (31.2 + 3.5% compared to 38.2 + 4.8%). The mass of heart, kidney, liver, stomach, intestine was significantly lower in HAC mice. The constant high temperature of our experimental treatment differs from the thermally and hygrically complex environment experienced by P. eremicus in nature. Nevertheless, we hypothesize that that P. eremicus cannot significantly respond physiologically to chronic heat exposure and instead, they adjust to heat stress behaviorally and by selecting favorable microclimates.

Presentation Index: Z17 **Time:** 6:30
Department: Biological Sciences

Student Presenter(s)
Meuleners, Andrea
Cohrs, Chelsea
Eisenschenk, Jeremiah
Olson, Kristoff

Faculty Sponsor(s)
Webster, Marcus

A New Model Assisted Chi-Square Distance Function for the Calibration of Design Weights

In the present investigation, we have proposed a new Chi-Square distance function for calibrating the design weights while estimating the general parameters of interest by following the work of Rao (1994). The recent work of Singh (2004) has been shown as a special case of it for a certain choice of weights. It is also worth noting that under the case of optimal design weights by following Godambe and Joshi (1965), the Sen-Yates-Grundy (1953) estimator of variance can not be calibrated for the single calibrations constraint recently studied by Farrell and Singh (2002, 2004), and Wu (2003). At the end, simulation studies are also presented and

Presentation Index: Z18 **Time:** 6:30
Department: Statistics

Student Presenter(s)
Stearns, Matthew

Faculty Sponsor(s)
Singh, Sarjinder

Performance Enhancing Drugs

Advances in science and medicine have led to the development of new drugs that claim to improve athletic performance. The use of creatine, one of many performance enhancing drugs, is on the rise for both professional and student athletes. A survey of local high school students was used to determine student knowledge of creatine, their use of the drug, and the students' perceptions regarding creatine's use in sports.

Presentation Index: Z19 **Time:** 6:30
Department: Biological Sciences

Student Presenter(s)
Bueckers, Deborah

Faculty Sponsor(s)
Simpson, Patricia

Simulation of Asynchronous CDMA System

Modern wireless communication systems are required to accommodate many users simultaneously, while providing high data rates and on-demand data transfers. The multi-user communication system consists of many users attempting to communicate with a single receiver over a common set of channel resources. Though simple, this model captures the basic architecture of most modern cellular communication systems deployed throughout the world. Modern communication systems provide multiple access through a combination of three methods: time-division (TDMA), frequency division (FDMA), and code-division multiple access (CDMA).TDMA and FDMA techniques essentially divide the time and frequency resources respectively between the users. CDMA, on the other hand, allows all users to use both time and frequency resources simultaneously. Time delay estimation and new user detection are two fundamental problems encountered in the design of receivers for multi-user asynchronous Code Division Multiple Access (CDMA) systems. In this project, I will try to use optimum maximum-likelihood receiver to solve these problems.

Presentation Index: Z20 **Time:** 6:30
Department: Electrical and Computer Engineering

Student Presenter(s)
Wu, Yunsong

Faculty Sponsor(s)
Yao, Aiping

Recycling at St. Cloud State University

Recycling here at SCSU is a problem both on campus and in the dorms. Attempts have been made to encourage students to recycle but these attempts are not always successful. The purpose of this study was to determine student beliefs and practices related to recycling on campus. The study sampled the residents of Hill and Case Halls. A survey was used to collect data regarding 1) student beliefs about the current recycling program; 2) student recycling practices; and 3) student suggestions for improving the current recycling program. The answers to these research questions will be presented in this poster session.

Presentation Index: Z21 **Time:** 6:30
Department: Biological Sciences

Student Presenter(s)
Schlagel, Adam

Faculty Sponsor(s)
Simpson, Patricia

The Design and Synthesis of Farnesyl Protein Transferase Inhibitors

RAS proteins play an essential role in the signal transduction pathways that regulate cell proliferation. Single point mutations in RAS proteins are associated with approximately 30% of all human cancers. The addition of a fifteen carbon terpene chain to the RAS protein, catalyzed by the enzyme farnesyl protein transferase (FPTase), is the key step in the ability of RAS proteins to regulate cell growth. Compounds that inhibit this enzyme have been shown to be potential chemotherapeutic agents. Farnesyl pyrophosphate and RAS proteins are the two natural substrates for FPTase. Current work is focused on the design and synthesis of novel farnesyl pyrophosphate mimetics that will serve as competitive FPTase inhibitors. The specific targets in this project are analogues that will incorporate one aromatic ring in the farnesyl "tail". It is anticipated that these compounds will serve as useful probes to illustrate the importance of nonbonding interactions in enzymatic recognition of the farnesyl chain.

Presentation Index: Z22 **Time:** 6:30
Department: Chemistry

Student Presenter(s)
Motschke, Lisa

Faculty Sponsor(s)
Mechelke, Mark

Gender and Organizational Environment as Predictors of Destructive Leader Behavior

As mergers and globalization make our corporate world more dynamic, the temptation of making unethical business decisions is likely to increase; we have seen accounts of this recently across the US (Enron, Worldcom, etc.). Are there individual differences that promote unethical decision making, and/or is it the situation that fosters this type of decision making? The present study investigated the effects of gender and organizational environments that bring out the willingness to engage destructive behavior. We measured the likelihood of acting unethical when (a) making organizational decisions, (b) making interpersonal decisions, and (c) solving ambiguous organizational problems. Undergraduate participants were asked to assume the role of a corporate leader while working through a managerial assessment center. Decisions and problems designed to measure destructive behavior were incorporated into the study. Organizational environment was manipulated by providing participants with information that portrayed environments as (a) having an unethical climate, (b) having a leader that supports unethical decision making, (c) having a communication system where employees' are not held accountable for their decisions, and (d) a control condition which can be considered a regular organizational environment. Results of the study showed an effect of gender but not an effect of the organizational environment.

Presentation Index: Z23 **Time:** 6:30
Department: Psychology

Student Presenter(s)
Merriam, Jenny
Perry, Kimberly
Paquette, Adam S

Faculty Sponsor(s)
Illies, Jody

Photochemistry of Phenyl Isothiocyanate

The photochemical conversion of phenyl isothiocyanate (Ph-N=C=S) to phenyl isocyanide (Ph-NC:) was investigated and will be presented. This reaction is known as a desulfurization reaction and is carried out by the photolysis of the isothiocyanate at 254 nm. To complete the conversion a known sulfur quencher is added to consume the liberated sulfur atoms. The isocyanide produced in this reaction is a valuable and expensive chemical used in industry for wood preservatives, soil fumigants and herbicides. The ability to scale the desulfurization reaction up so that it can become a viable synthetic pathway for industrial use will be determined by adjusting the concentration of starting materials, photolysis times, and changing sulfur quenchers to optimize the conversion to the isocyanide. To be sure that the isocyanide is the product of the photolysis it will be synthesis by proven literature methods and compared via GC/MS, NMR, and IR to the isolated products of the desulfurization reaction. Successful isolation of the isocyanide will allow for a simple chemical procedure that may be used in industry to produce a valuable and expensive chemical from relatively inexpensive starting materials.

Presentation Index: Z24 **Time:** 6:30
Department: Chemistry

Student Presenter(s)
Eisenmenger, Keith

Faculty Sponsor(s)
Gregory, Daniel

Effects of Herbal Treatments on Blood Pressure of Rats

Herbal supplements have been used as remedies for numerous purposes. There are countless herbs with traditional uses, but no current empirical research. Many of these are promising avenues for medical treatments. Research must be done for these to be documented as safe and effective in medicine today. In this laboratory we investigate the actions of herbal extracts on muscle contractility. Some of these extracts (blue cohosh, black cohosh, red clover, cramp bark) have been shown to stimulate or inhibit smooth muscle contractions. We are now testing effects of these extracts on other types of muscle. We will measure heart rate and blood pressure after intravenous exposure to specific extracts. Using adult rats, an artery will be catheterized with PE-50 tubing, flushed with heparin saline, and hooked to a blood pressure transducer. Pulse, systolic and diastolic pressure will be recorded using PowerLab instruments. Venous catheterization will allow for drug administration. Drugs will be dissolved in Dimethylsulfoxide for injection. These studies will not only address questions of muscle contractility of the heart and vasculature, but will also begin to address safety of administering these extracts in a mammalian model.

Presentation Index: Z25 **Time:** 6:30
Department: Biological Sciences

Student Presenter(s)
Sills, Laura

Faculty Sponsor(s)
Tubbiola, Maureen

Speech Language Pathologists: Are They Stressed?

The purpose of this study was to determine the causes and effects of stress levels experienced by Speech-Language Pathologists (SLPs) who work in medical and education settings. The research was conducted to establish a systematic view of work related stress in the profession of Speech-Language Pathology. Data was collected through interviews of 34 SLPs who were employed in either a medical or educational setting. Through these interviews information was obtained regarding the nature, sources and effects of stress. Data was also collected on optimal and excessive levels of work related stress in Speech-Language Pathology. The results of this study demonstrated that SLPs have an average level of stress, with SLPs in the educational setting rating their stress higher than those in the medical setting. The differences in the levels of stress between the two work settings fell into the categories of: frustrations, causes of stress, and coworker impact on stress. According to these results, SLPs in the medical and educational settings experienced stress caused by different factors, but many believed their job satisfaction outweighed the stress experienced on the job.

Presentation Index: Z26 **Time:** 6:30
Department: Communication Disorders

Student Presenter(s)
Cochran, Leslie
Daun, Reesa
DeRusha, Liz
Ebensteiner, Leah
Hanson, Katie
Johnson, Eada
Kraemer, Sara
Nelson, Wendy
Nodland, Heather
Pairolero, Amber
Senger, Hannah
Anderson, Melissa

Faculty Sponsor(s)
Whites, Margery

A Geochemical Survey of Saint Cloud Granites and Basalts

The bedrock of South-Eastern Stearns County in Central Minnesota is composed of several intrusive igneous units that are associated with the post-tectonic phase of the Penokean Orogeny during the early to middle Proterozoic. It includes two compositionally distinct granites, a granodiorite, an aplite dike, a porphyritic microgranite dike with Rapakivi texture, and two distinct sets of basalt dikes. In this study, geochemical analyses (XRF) of these rocks were conducted to determine the cooling histories and magmatic associations of these units. Additionally, the constituent minerals of these units were studied optically and with a scanning electron microscope (SEM/EDS) to further corroborate the geochemical findings and provide more depth to the story of

Presentation Index: Z27 **Time:** 6:30
Department: Earth and Atmospheric Science

Student Presenter(s)
Bovee, Roderick

Faculty Sponsor(s)
Pound, Kate

Cloning and Expression of ALDH9A1

Aldehyde dehydrogenase 9A1 (ALDH9A1) is capable of converting Chloroacetaldehyde to Chloroactetate. Chloroacetaldehyde is a metabolite of anticancer drugs Cyclophosphamide and Ifosfamide, as well as a metabolite of vinyl chloride. Chloroacetaldehyde is a kidney toxin. Three ALDH's (ALDH2, ALDH1A1, and ALDH9A1) in the human kidney accept chloroacetaldehyde as a substrate. The reaction catalyzed by ALDH9A1 is not well characterized. In this regard, we are cloning ALDH9A1 and studying its ability to catalyze oxidation of chloroacetaldehye. So far we have found a fair indication that ALDH9A1 is capable of converting Chloroacetaldehyde to Chloroacetate by performing a kinetics reaction with E coli expressing ALDH9A1 and acetaldehyde substrate.

Presentation Index: Z28 **Time:** 6:30
Department: Chemistry

Student Presenter(s)
Salad, Mohammad

Faculty Sponsor(s)
Sreerama, Lakshmaiah

Correlating the Appearance of Pioneer Gobioid Fish Species with Pacific Island Formation using Molecular Clock Techniques

The evolutionary divergence dates of gobioid fish species were examined using molecular sequence data. *Sicyopterus stimpsoni, Awaous guamensis, Lentipes concolor,* and *Sicypoterus japonicus* each had ND1 (NADH dehydrogenase subunit 1), ND2 (NADH dehydrogenase subunit 2) , and COI (cytochrome c oxidase subunit I) genes isolated from their mitochondrial DNA. Each of these genes is thought to be conservative (i.e. slower rate of mutation) and are frequently used for molecular investigations of natural history. This data set should then be ideal for our investigation. Those genes were then sequenced and analyzed to propose divergence rates based on the application of statistical models. This analysis yielded evolutionary divergence rates for each species. The divergence rates were hypothesized to correlate with the formation dates of the Pacific Islands on which the particular species inhabit; thus an even greater correlation between the evolutionary divergence dates and islands formation dates can be made, implying that the gobioid fish species are primary successors in Pacific Island formation.

Presentation Index: Z29 **Time:** 6:30
Department: Biological Sciences

Student Presenter(s)
Iverson, Theresa

Faculty Sponsor(s)
Julius, Matthew
Kvaal, Christopher
Schoenfuss, Heiko

Laboratory Tests of a Real Fringe Interferometer

A real fringe interferometer has been constructed in a lab in order to test its behavior against theoretical expectations. An interferometer is an instrument that can determine the wavelength and intensity of light incident upon it by measuring a fringe pattern. While current interferometers are small, they produce virtual fringes. Because of this, most of the size and weight of current instruments consists of exit optics to image the virtual fringes onto a detector such as a CCD. A real fringe interferometer is desirable because it eliminates the size and weight of these bulky exit optics. This is an advantage for a space-based interferometer as a smaller, lighter instrument is much less expensive to put into orbit. The real fringe interferometer was tested to determine the localization (focus) plane of the fringes and how the fringe frequency and phase changes with respect to input angle.

Presentation Index: Z30 **Time:** 6:30
Department: Physics, Astronomy and Engineering Science

Student Presenter(s)
Stanley, Todd

Faculty Sponsor(s)
Harlander, John

Effects of Estradiol on *Melosira varians*, a Common Tychoplanktonic Diatom

Diatoms appear to be a particularly satisfactory food source for many aquatic animals. In addition they are well known as highly sensitive indicators of environmental change A laboratory experiment is proposed, examining the effects of environmentally relevant estradiol concentrations on the gross morphology and physiology of the diatom species Melosira varians C. A. Ag. Ultimately, this experiment will lay the foundation for determining the impacts of xenoestrogen contamination on the development and food quality of species in the primary production community. This diatom was selected because it commonly occur in most freshwater environments and has been the subject of other toxicological studies. This provides a framework for structuring this project's experimental design. An adequate literature base also exists for evaluating results of this experiment. The species grow rapidly and are easy to maintain in culture. The use of a phytoplankton species as a test organism other research by considering organisms at the base of the food chain.

Presentation Index: Z31 **Time:** 6:30
Department: Biological Sciences

Student Presenter(s)
Noehring, Nichole
Roth, Cassandra

Faculty Sponsor(s)
Julius, Matthew

Urban Effects on Nutrient Loading of the Sauk River within St. Cloud Metro Area

The impact of agricultural practices on waterways is a topic that has been well researched in the field of water quality. Agriculture can increase nutrient loading of nitrogen and phosphorus in nearby waterways, and this nutrient loading has been associated with water quality issues, such as eutrophication and hypoxia. Eutrophication and hypoxia can ultimately degrade water quality, and cause loss of biodiversity, fish kills, and loss of recreational value. Although much is known about agricultural effects on water quality, less studied are effects of urban areas on water quality. From July 2003 to July 2004, a study was conducted to examine nitrogen and phosphorus loading of the Sauk River as it flows through urban and residential areas of the St. Cloud metro area. When weather permitted, biweekly grab samples were taken from four sites along a 10 km portion of the Sauk River. At each site location, dissolved oxygen levels and temperatures were recorded. The samples were then taken to the laboratory and analyzed for nitrate-nitrogen, phosphate-phosphorus, pH, conductivity, suspended solids, and total solids. Stream flow data from the United States Geological Survey (USGS) will be used in conjunction with the monitoring data to determine the total yearly load of nitrogen and phosphorus in the Sauk River. Findings from this study will be used to determine if urban and residential areas contribute to nutrient loading of the Sauk River.

Presentation Index: Z32 **Time:** 6:30
Department: Environmental and Technological Studies

Student Presenter(s)
Sewell, Sarah

Faculty Sponsor(s)
Bender, Michner

Headspace Solvent Microextraction with Fluorescence Detection

Increasing concerns over chemicals that are potentially hazardous at low levels have created a need for new detection and quantification methods. Headspace solvent microextraction has proven to be an effective technique for the preconcentration of volatile organic compounds (benzene, toluene, ethylbenzene, xylene and related compounds) into an organic solvent drop (hexane). The contents of the hexane drop can then be analyzed by fluorescence to detect compounds at trace levels (part per million and part per billion). A Nd:Yag laser and associated fiber optics were used to send a fluorescence excitation pulse to the hexane drop. The resulting emission from the volatiles within the drop was subsequently collected with embedded fiber optics and sent to a monochromator/PMT detector. Based on the sensitivity of fluorescence, this system represents a continuous, convenient and precise sample cleanup and preconcentration method for the determination of volatile organic compounds at trace levels.

Presentation Index: Z34 **Time:** 6:30
Department: Chemistry

Student Presenter(s)
Gallagher, Sunshine

Faculty Sponsor(s)
Dvorak, Michael
Jeannot, Michael

Anti-cancer Activities and DNA Interactions of Ruthenium Benzimidazole Complexes

Discovery of cisplatin in the 1960s, has led to a search for other metal-based anticancer drugs. Cisplatin is used throughout the world as an antitumor drug for the treatment of testicular and ovarian cancers in particular. Ruthenium metal complexes are of interest to this study exhibiting excellent anticancer properties. Anticancer activities of ruthenium benzimidazole complexes, $RuCl_3$(p-OHPhBzlH)$_2$2H_2O, $RuCl_3$(o-HPhBBzl)$_2$, $RuCl_2(CO_2)$(1,4-tBzlH2Blz)22H2O, and [Ru(CO)2(p-OHPBzIH)4]Cl2, and corresponding benzimidazole ligands, p-OHphBzlH, o-HphBBzl, t-BzlH_2Bz, and p-OHPBzlH, were tested for their ability to kill MCF-7/0 and MCF-7/OttA breast carcinoma cells. $RuCl_3$(o-HPhBBzl)2 and $RuCl_2(CO_2)$(1,4-tBzIH2BZ)22H2O were found to have the highest toxicities against these cell lines (LC_{50} values of 32 µM and 29 µM for the MCF-7/0 cells and 29 µM and 30 µM for the MCF-7/OttA cells, respectively). Ruthenium metal ions ($RuCl_3$) by themselves do not kill these cells. Two methods were used to test for their abilities to interact with DNA; induction of DNA strand breaks by agarose gel electrophoresis and binding characteristics based on change in absorportion at 260 nm using UV/Vis spectrophotometry. $RuCl_3$(o-OHPhBzlH)3 was first incubated with a purified plasmid DNA (p DTD, 4 kbp) in phosphate buffered solution, pH 7.4 at 37°C for 6-8 hours. The resulting products were separated on 1% agarose gels, stained with ethidium bromide and visualized under UV light. $RuCl_3$(o-OHPhBzlH)$_3$ appear to cause DNA strand breaks. The ability of the above complexes and their corresponding ligands with calf thymus DNA was monitored by UV-Vis spectrophotometry. Relatively low concentrations of ruthenium complexes in solution with DNA resulted in decreased absorbance at 260 nm, suggesting DNA strand breaks. This is further supported by electrophoresis experiments. The benzimidazole ligands also interact with DNA but with less efficiency. We are currently in the process of determining DNA binding constants for each of the complexes and corresponding ligands.

Presentation Index: Z35 **Time:** 6:30
Department: Chemistry

Student Presenter(s)
Nguyen, Alyssa

Faculty Sponsor(s)
Sreerama, Lakshmaiah

Ray Tracing Analysis of a Real Fringe SHS Interferometer

Spatial Heterodyne Spectroscopy (SHS) is a technique for interference spectroscopy that can offer many advantages for high spectral resolution measurements of faint, diffuse sources. Highly compact and durable SHS are being developed that can operate in extreme environments such as space and the Earth's upper atmosphere. A new SHS instrument utilizes mountable diffraction gratings and fixed mirrors to relay light to a CCD detector. These optical elements induce a path difference that produces fringe patterns caused by constructive and destructive interference. More specifically, straight line fringes of alternating light/dark lines are created. The spacing between these lines gives us information about the wavelength of light being gathered, while the amplitude of the signal gives us information about the brightness. There are several advantages to this instrument. First, the SHS instrument has great field-widening capabilities, which increases the sensitivity of the instrument. Next, the new design forms real, as opposed to virtual, fringe patterns. Because of this, no added optical lenses are needed to bring virtual fringes to the detector. This aids the construction of a smaller and more compact instrument. The current study uses Code V, an optics software, to model this new SHS interferometer. The software has zoom capabilities that allow the simultaneous analysis of both arms of the interferometer. Once the design is aligned properly, computer programs will be written to combine data from both arms of the instrument to generate a fringe pattern in order to verify the results in a laboratory experiment and theoretical experimentation.

Presentation Index: Z36 **Time:** 6:30
Department: Physics, Astronomy and Engineering Science

Student Presenter(s)
Henning, Gregory

Faculty Sponsor(s)
Harlander, John

Smart Parking System

This project is an automated parking management system. It is designed to reduce the amount of time spent in locating and parking a vehicle in a parking lot. The system employs a video camera and image processing techniques to detect the presence or absence of a vehicle. The information is then sent wirelessly to be displayed on display units that are strategically placed within the parking lot. The information displayed will include the number of parking spaces that are available and their positions. Some of the advantages of this system are that the system can utilize existing security infrastructure such as security cameras. It also gives the exact position of the available parking spaces unlike other systems that just give you the number of spaces available. Also, unlike other parking management systems that utilize sensors, this system requires no wiring.

Presentation Index: Z37 **Time:** 6:30

Department: Electrical and Computer Engineering

Student Presenter(s)
Bonkat, Tim
Lei, Peng

Faculty Sponsor(s)
Glazos, Michael

Variations in *Melosira varian*'s Protein Expression in Response to Alkylphenol Exposure

Pollutants in an environment often enter the food web through the producer trophic level, where they can biomagnify in the consumer levels. One of these pollutants are the pharmaceuticals, that are introduced into the aquatic systems via water treatment systems and effluent. In an aquatic environment, diatoms are an integral part of the producer trophic level as they are a quality food source for insects and larval fish. To study how pharmaceuticals can affect diatoms, genetically identical diatom cultures of Melosira varians were exposed to 150 ppb alkyl phenol and their proteomes were compared to identical unexposed M. varians proteomes. Proteomes were assayed by utilizing a 2 dimensional protein assay technique. Differences in the proteome (expressions or suppressions) were separated and assayed using a MALDI-TOF analyzer to determine the classification of the suspect proteins. Results will be compared to a library of known proteins to determine what effects alkyl phenol has on the diatom M. varians, and possibly to consumer fauna. This project is currently receiving external funding from the United States Geological Survey (USGS).

Presentation Index: Z39 **Time:** 6:30
Department: Biological Sciences

Student Presenter(s)
Hansen, Dennis

Faculty Sponsor(s)
Julius, Matthew
Sreerama, Lakshmaiah

Effects of Diminishing Food Quality on *Xenopus laevis*

The effects of biologically active compounds, such as alkyl phenols., in the environment are actively being investigated. Most of these activities have focused on direct effects of the chemicals on single organisms. To this extent, previous research has established the effects of alkyl phenols at various dosages on the diatom species Melosira varians. Little research, however, has been conducted on the effects these compounds have on interactions between organisms. Melosira is the food source for numerous aquatic animals, including frogs. In this experiment, the frog Xenopus laevis was feed both alkyl phenol exposed and unexposed cultures at a critical phase of the life cycle (tadpole). Effects on the frog were evaluated in terms of development, dry weight, and lipid composition.

Presentation Index: Z40 **Time:** 6:30
Department: Biological Sciences

Student Presenter(s)
Kummer, Elizabeth
Greene, Eric

Faculty Sponsor(s)
Julius, Matthew

The Effect of Stress and Attention on Injury Potential in College Athletes

The purpose of this study is to examine the relationship between stress, attention and the occurrence of injury in athletes. Athletes will be asked to complete the Athletic Life Experiences Survey, the Stroop test, and a questionnaire assessing health, clumsiness and personality. The injury data will be composed of injuries that occurred with the past year and will be collected from the Head Athletic Trainer. The relationship between the measures will then be calculated. The results are expected to be similar to the stress-injury literature, which finds a positive relationship between stress and injury frequency. The results are also expected to show that athletes with lower levels of attention are more likely to become injured than athletes with higher levels of attention.

Presentation Index: Z41 **Time:** 6:30
Department: Psychology

Student Presenter(s)
Braatz, Sara

Faculty Sponsor(s)
Kulas, John

Historical Land Use Analysis of the Sauk River through the Saint Cloud MSA

Stretching nearly 120 miles, the Sauk River and the Sauk River Watershed District are assets to Central Minnesota and our waterway system. The Sauk River Watershed covers over 700,000 acres of six Central Minnesota counties, including Stearns County and the Saint Cloud Metropolitan Statistical Area (Saint Cloud MSA). As threats of urban sprawl, high-grade development and up-stream contamination continue to threaten the quality of the Sauk River, so to they threaten the quality of life for Saint Cloud MSA residents. As residents are so dependent on our water resources for livelihood, it is important to identify components of current development practices that may aid in the threats of environmental degradation. This study outlines the historical and current land-use development trends along the Sauk River through the Saint Cloud MSA, which can serve as a tool for environmentally-friendly municipal planning efforts. It also identifies several major components of current development practices that continue to threaten the Sauk River, the Sauk River Watershed District and the Saint Cloud community.

Presentation Index: Z42 **Time:** 6:30
Department: Environmental and Technological Studies

Student Presenter(s)
Wittman, Abbi

Faculty Sponsor(s)
Bender, Michner

A Markov Model for SCSU Enrollment and Retention Patterns

Official enrollment figures for St. Cloud State University are taken on the tenth, thirtieth, and final day of each semester. The objective of this presentation is to model how enrollment figures generally change across these time periods by using transition matrices. Treating different class standings (freshman, sophomore, graduate student, no longer enrolled, etc.) as states, a series of matrices is used to display the percentage of students from any given state that moved to every other state from each time period to the next over the past three years. From there, the product of successive matrices serves as an estimated transition matrix from one point in time to a point several periods in the future. This analysis attempts to find patterns in the proportions of students that maintained their class standings, moved to a different class standing, or stopped attending SCSU. In addition, using the past data, average values of transition percentages for corresponding time periods can be computed to aid in forecasting future enrollment for SCSU.

Presentation Index: Z43 **Time:** 6:30
Department: Statistics

Student Presenter(s)
Dokken, Jennifer

Faculty Sponsor(s)
Robinson, David

Solution Speciation and Anti-Diabetic Properties of $VO(pbd)_2$ and $VO(dbm)_2$

Medicinal chemistry in recent years has brought an increased interest in complexes involving metal centers. This interest has arisen from studies
involving metal centers and organic ligands that have proven to have anti-diabetic and anti-cancer properties. In light of this, two complexes having beta-diketonato ligands, $VO(dbm)_2$ and $VO(pbd)_2$, have been synthesized and characterized using mass spectrometry, IR spectroscopy, and elemental analysis. Continued solution speciation studies by using UV-vis spectroscopy has shown DMSO and DMF to be coordination at sixth position of $VO(pbd)_2$ and $VO(dbm)_2$ complexes. IR and NMR studies reveal the structures of the compound in the solution state. Solution IR spectroscopy of $VO(pbd)_2$ and $VO(dbm)_2$ in the far-IR region show binding of the solvents DMF and DMSO at the sixth position. External addition of the ligand into an NMR sample of vanadium complex revealed that ligand is not displaced in the solution.
Solution speciation studies and anti-diabetic studies of these complexes with animals will be presented.

Presentation Index: Z44 **Time:** 6:30
Department: Biological Sciences

Student Presenter(s)
Piere, Christopher

Faculty Sponsor(s)
Gazal, Oladele
Mahroof-Tahir, Mohammad

Attitudes Toward the War on Terrorism and its Impact on School and Work

This survey is conducted to find how participants perceive war and terrorism. We are also interested in the effect of the war on terrorism on those called for active duty. The age of entry for soldiers has been found to have differential effects upon their reentry to work and school (Elder, Shanahan, & Clipp, 1994). Their research showed that military personnel in an older cohort experienced major disruptions both on entry and on reentry into civilian life in comparison to the younger cohort. It was found that the younger cohort consistently responded more favorably to their service experience than older cohorts. In this study, three scenarios were presented concerning individuals called to active duty. The first scenario presented a 19 year-old college student being called to active duty; the second scenario presented at 26 year-old college graduate relatively new in his career; the third scenario presented a 38 year-old father well established in his career. Attitudes and perceptions about their return to school and work were investigated. After each scenario a set of questions were asked including two open ended questions in which participants put in any personal gains or losses the character might experience. Interpreting the data will be conducted through the use of ANOVA. Perceived differences among cohorts reentry into work or school and the support they are expected to receive will be examined. Examples of the qualitative data will display the perceived gains and losses for the three cohorts. It is hypothesized that the older cohort will be perceived as more likely to experience disruption and less likely to receive support in their work or school.

Presentation Index: Z45 **Time:** 6:30

Department: Psychology

Student Presenter(s)
Kuehler, Joshua
Hahn, Amber
Nishiki, Miho

Faculty Sponsor(s)
DeVoe, Marlene

Student Presenter Index

Student Presenter	Session	Presentation Index	Time	Room
Aeshliman, Kari	All Disciplines I	R28	3:00	Ballroom
Ahmed, Faisal	All Disciplines I	R10	3:00	Ballroom
Ahsan, Chowdhury	Behavioral Studies I	C2	11:15	North Glacier
Akhunji, Bakhtiar	All Disciplines I	R5	3:00	Ballroom
Anderson, Jennifer	All Disciplines I	R44	3:00	Ballroom
Anderson, Melissa	All Disciplines II	Z26	6:30	Ballroom
App, Joseph	Spanish	E2	11:15	Lady Slipper
Aune, Susan	All Disciplines I	R22	3:00	Ballroom
Azadi, Parivash	Gender Studies	U3	6:00	South Voyageurs
Bartell, Steve	Science and Engineering III	N5	3:00	Granite
Bartolic, Cara	All Disciplines I	R24	3:00	Ballroom
Bauer, Katie	All Disciplines I	R19	3:00	Ballroom
Becker, Marc	Science and Engineering III	N2	2:15	Granite
	All Disciplines I	R52	3:00	Ballroom
Bello, Leye	All Disciplines I	R10	3:00	Ballroom
Biersma, Jill	All Disciplines I	R17	3:00	Ballroom
Bista, Min	Science and Engineering I	B5	12:00	South Voyageurs
Bistodeau, Travis	Science and Engineering III	N6	3:15	Granite
Bjornsson, Robert	Science and Engineering I	B3	11:30	South Voyageurs
Blonigen, Janelle	All Disciplines II	Z11	6:30	Ballroom
Bonkat, Tim	All Disciplines II	Z37	6:30	Ballroom
Borgert, Melanie	All Disciplines I	R1	3:00	Ballroom
Bourke, Molly	Behavioral Studies I	C5	12:00	North Glacier
Bovee, Roderick	All Disciplines II	Z27	6:30	Ballroom
Braatz, Sara	All Disciplines II	Z41	6:30	Ballroom
Brambrink, Katie	Humanities	D2	11:15	South Glacier
Braun, Noah	The Renaissance	Y1	5:30	Lady Slipper
Brehmer, Kathleen	Humanities	D5	12:00	South Glacier
Brehmer, Kathleen	Gender Studies	U3	6:00	South Voyageurs
Brezinka, Heather	All Disciplines I	R45	3:00	Ballroom
Bruemmer, Mark R.	All Disciplines I	R8	3:00	Ballroom
Bruns, James	All Disciplines I	R30	3:00	Ballroom
Bucholz, Katrina	Behavioral Studies I	C2	11:15	North Glacier
Bueckers, Deborah	All Disciplines II	Z19	6:30	Ballroom
Buesseler, Carla	Science and Engineering I	B4	11:45	South Voyageurs
Bushkofsky, Justin	All Disciplines I	R47	3:00	Ballroom
Caine, Heather	Behavioral Studies II	K3	2:30	South Voyageurs
Campbell, James	All Disciplines I	R17	3:00	Ballroom
Caris, Jeffrey	All Disciplines II	Z3	6:30	Ballroom
Casper, Kyle	All Disciplines I	R31	3:00	Ballroom
Cediel, Roberto	All Disciplines I	R37	3:00	Ballroom

Student Presenter	Session	Presentation Index	Time	Room
Chandra, Cecilia	Statistics and Mathematics	H2	11:15	Granite
	All Disciplines I	R12	3:00	Ballroom
Chesborough, Sarah	Gender Studies	U3	6:00	South Voyageurs
Chieh, Wei-Jiun	All Disciplines I	R34	3:00	Ballroom
Chishti, Muhammad	All Disciplines I	R11	3:00	Ballroom
Choi, Sung Yeol	All Disciplines I	R6, R26	3:00	Ballroom
Cleland, Megan	Interdisciplinary Science Symposium	A1	11:00	North Voyageurs
Cochran, Leslie	All Disciplines II	Z26	6:30	Ballroom
Cohrs, Chelsea	All Disciplines II	Z17	6:30	Ballroom
Cordes, Nancy	Teaching English as a Second Language	X1	5:30	Granite
Corrigan, Ross	Interdisciplinary Science Symposium	A5	12:00	North Voyageurs
	All Disciplines I	R29	3:00	Ballroom
Couch, Nikki	All Disciplines I	R28	3:00	Ballroom
Danielson, Glen	All Disciplines I	R18	3:00	Ballroom
Daun, Reesa	All Disciplines II	Z26	6:30	Ballroom
Deng, Danmin	Applied Linguistics and English	G3	11:30	Oak
DeRusha, Liz	All Disciplines II	Z26	6:30	Ballroom
Dettman, Leah	All Disciplines II	Z12	6:30	Ballroom
Dhungel, Prateek	Science and Engineering I	B5	12:00	South Voyageurs
Dokken, Jennifer	All Disciplines II	Z43	6:30	Ballroom
Dold, Ashley	All Disciplines I	R3	3:00	Ballroom
Du Lac, Shawn	Science and Engineering I	B3	11:30	South Voyageurs
Dukowitz, Jeff	All Disciplines I	R7	3:00	Ballroom
Dunderi, Stacie	All Disciplines I	R17	3:00	Ballroom
Dwyer, Cecelia	Islam: A Global Perspective	O1	2:00	Lady Slipper
Ebensteiner, Leah	All Disciplines II	Z26	6:30	Ballroom
Edmunds, Erik	Applied Linguistics and English	G2	11:15	Oak
Egan, Lindsey	Spanish	E3	11:30	Lady Slipper
	Islam: A Global Perspective	O4	2:45	Lady Slipper
Eisenmenger, Keith	All Disciplines II	Z24	6:30	Ballroom
Eisenschenk, Jeremiah	All Disciplines II	Z17	6:30	Ballroom
Eisterhold, Joe	Science and Engineering IV	T2	5:45	North Voyageurs
Ekinde, Kingsley	All Disciplines I	R10	3:00	Ballroom
Ellickson, Jim	All Disciplines II	Z2	6:30	Ballroom
Elmeski, Mohammed	Teaching English as a Second Language	X2	5:50	Granite
Engelhart, Kristie	All Disciplines I	R25	3:00	Ballroom
Enger, Kathryn	Gender Studies	U2	5:45	South Voyageurs
Erdahl, Melissa	All Disciplines I	R45	3:00	Ballroom
Erickson, Jessie	Science and Engineering II	J3	2:30	North Voyageurs
Etzler, Mara	All Disciplines I	R28	3:00	Ballroom
Fagerland, Rhoda	Teaching English as a Second Language	X3	6:10	Granite

Student Presenter	Session	Presentation Index	Time	Room
Fett, Allison	All Disciplines II	Z14	6:30	Ballroom
Fink, Celia	The Renaissance	Y5	6:30	Lady Slipper
Flint, David	All Disciplines I	R3	3:00	Ballroom
Fox, Mike	SCSU Survey	Q1	2:00	Oak
Franklin, Rochelle	All Disciplines II	Z13	6:30	Ballroom
Freeberg, Martyne	All Disciplines I	R13	3:00	Ballroom
Frerich, Gretchen	Behavioral Studies I	C3	11:30	North Glacier
Fries, Doug	Behavioral Studies I	C2	11:15	North Glacier
Fuchsteiner, Adam	International Business	V4	6:15	North Glacier
Fults, Jon	All Disciplines I	R27	3:00	Ballroom
Gahlon, Hailey	All Disciplines I	R56	3:00	Ballroom
Gallagher, Sunshine	All Disciplines II	Z34	6:30	Ballroom
Gauthier, Stacy	SCSU Survey	Q1	2:00	Oak
Gebhardt, Angie	All Disciplines II	Z11	6:30	Ballroom
Gehrmann, Tyler	International Business	V2	5:45	North Glacier
Gesmundo, Matthew	All Disciplines I	R6	3:00	Ballroom
	All Disciplines II	R53	3:00	Ballroom
Ghose, Shourjo	All Disciplines I	R16	3:00	Ballroom
Gill, Dean	Science and Engineering I	B2	11:15	South Voyageurs
Gjestvang, Christopher	Statistics and Mathematics	H1	11:00	Granite
Glazer, Maggie	All Disciplines I	R28	3:00	Ballroom
Grand, Anthony	All Disciplines I	R36	3:00	Ballroom
Grant, Rainer	All Disciplines I	R34	3:00	Ballroom
Greathouse, Maren	What Baby Boomers Want in Retirement	L1	2:00	North Glacier
Greene, Eric	All Disciplines II	Z40	6:30	Ballroom
Gross, Aaron	Interdisciplinary Science Symposium	A4	11:45	North Voyageurs
Grove, Kent	All Disciplines I	R37	3:00	Ballroom
Hahn, Amber	All Disciplines II	Z45	6:30	Ballroom
Hansen, Dennis	All Disciplines II	Z39	6:30	Ballroom
Hansen, Melissa	What Baby Boomers Want in Retirement	L1	2:00	North Glacier
Hanson, Cynda	All Disciplines I	R54	3:00	Ballroom
Hanson, Jenny	All Disciplines I	R30	3:00	Ballroom
Hanson, Katie	All Disciplines II	Z26	6:30	Ballroom
Harris, Sara	Gender Studies	U4	6:15	South Voyageurs
Hartmann, Michelle	All Disciplines I	R49	3:00	Ballroom
Henderson, Adam	All Disciplines II	Z16	6:30	Ballroom
Hennessy, James	All Disciplines I	R7	3:00	Ballroom
Henning, Gregory	All Disciplines II	Z36	6:30	Ballroom
Hillestad, Richard	Behavioral Studies I	C1	11:00	North Glacier
Hoehn, Brady	Science and Engineering II	J2	2:15	North Voyageurs
Hoffman, Janell	All Disciplines II	Z11	6:30	Ballroom

Student Presenter	Session	Presentation Index	Time	Room
Holt, Amy	All Disciplines I	R20	3:00	Ballroom
Hulett, Jennifer	All Disciplines I	R45	3:00	Ballroom
Huttes, Corinn	The Renaissance	Y3	6:00	Lady Slipper
Illies, Angie	All Disciplines II	Z11	6:30	Ballroom
Ingmire Seminitis, Julie	Gender Studies	U1	5:30	South Voyageurs
Iverson, Theresa	All Disciplines II	Z29	6:30	Ballroom
Jadwinski, Heather	All Disciplines I	R49	3:00	Ballroom
Janckila, Chanda	All Disciplines I	R17	3:00	Ballroom
Jangam, Bipin	Behavioral Studies I	C4	11:45	North Glacier
Janski, Sara	Geography II	P3	2:30	Mississippi
Jarvi, Peter	All Disciplines I	R15	3:00	Ballroom
Jesberg, Daniel	All Disciplines I	R18	3:00	Ballroom
Johnson, Eada	All Disciplines II	Z26	6:30	Ballroom
Johnson, Jessica	All Disciplines I	R35	3:00	Ballroom
Johnson, Zachary	Science and Engineering I	B2	11:15	South Voyageurs
Juma, Peter	Islam: A Global Perspective	O5	3:00	Lady Slipper
Justison, Matthew	Science and Engineering I	B2	11:15	South Voyageurs
Kahler, Nicole	SCSU Survey	Q1	2:00	Oak
Kallarackal, Jennifer	Science and Engineering V	W3	6:00	South Glacier
Kamada, Yukiyo	Applied Linguistics and English	G4	11:45	Oak
Karki, Pradyumna	All Disciplines II	Z5	6:30	Ballroom
Karls, Vince	Science and Engineering V	W1	5:30	South Glacier
Kasprzak, Josh	International Business	V1	5:30	North Glacier
Keller, Cathy	All Disciplines II	Z11	6:30	Ballroom
Kemp, Sarah	All Disciplines I	R45	3:00	Ballroom
Kern, Gabriel	Science and Engineering II	J2	2:15	North Voyageurs
Khan, Tahir	Science and Engineering IV	T4	6:15	North Voyageurs
Kinsella, Tracy	Development/Administration of College of Social Sciences Re- Accreditation Survey	M1	2:00	South Glacier
Kishibe, Keiko	All Disciplines II	Z15	6:30	Ballroom
Kliber, Anthony	Science and Engineering II	J1	2:00	North Voyageurs
Kokula, Mary	Science and Engineering V	W4	6:15	South Glacier
Konduri, Balaji	All Disciplines II	Z9	6:30	Ballroom
Kotaska, Carolyn	All Disciplines II	Z11	6:30	Ballroom
Kotschevar, Katie	All Disciplines I	R39, R55	3:00	Ballroom
Kraatz, Brian	All Disciplines I	R9	3:00	Ballroom
Kraemer, Sara	All Disciplines II	Z26	6:30	Ballroom
Krekelberg, Elizabeth	All Disciplines I	R3	3:00	Ballroom
Kron, Steve	Interdisciplinary Science Symposium	A2	11:15	North Voyageurs
Kronland, William	Science and Engineering IV	T3	6:00	North Voyageurs

Student Presenter	Session	Presentation Index	Time	Room
Kuehler, Joshua	Development/Administration of College of Social Sciences Re- Accreditation Survey	M1	2:00	South Glacier
	All Disciplines II	Z45	6:30	Ballroom
Kuettner, Dave	Development/Administration of College of Social Sciences Re- Accreditation Survey	M1	2:00	South Glacier
Kummer, Elizabeth	All Disciplines II	Z40	6:30	Ballroom
Laingen, Kristina	Islam: A Global Perspective	O2	2:15	Lady Slipper
Laingen, Kristina	The Renaissance	Y4	6:15	Lady Slipper
Larsen, Karl	All Disciplines I	R4	3:00	Ballroom
Larson, Chris	Geography II	P5	3:00	Mississippi
Laurila, Jennifer	All Disciplines II	Z13	6:30	Ballroom
Lei, Peng	All Disciplines II	Z37	6:30	Ballroom
Levenhagen, Anna	All Disciplines II	Z14	6:30	Ballroom
Lieser, Tanya	All Disciplines II	Z11	6:30	Ballroom
Lindsey, Melissa	Applied Linguistics and English	G5	12:00	Oak
Lo, Siu-Cheong	Science and Engineering V	W2	5:45	South Glacier
LoBue, Jason	Geography II	P2	2:15	Mississippi
Loch, Jim	All Disciplines II	Z11	6:30	Ballroom
Lohrman, Sara	SCSU Survey	Q1	2:00	Oak
Lourey, Jessica	What Baby Boomers Want in Retirement	L1	2:00	North Glacier
Lunser, Jason	SCSU Survey	Q1	2:00	Oak
Maki, James	Statistics and Mathematics	H5	12:00	Granite
Mallon, Cassie	All Disciplines I	R58	3:00	Ballroom
Marine, Sasha	All Disciplines I	R43	3:00	Ballroom
Marston, Jessica	All Disciplines II	Z6	6:30	Ballroom
Massmann, Melissa	All Disciplines I	R17	3:00	Ballroom
Mattinen, Eric	Geography II	P4	2:45	Mississippi
Mattison, Josh	SCSU Survey	Q1	2:00	Oak
McArdell, Kara	All Disciplines I	R50	3:00	Ballroom
McCarthy, Clara	Science and Engineering III	N1	2:00	Granite
McClure, Nicholas	Science and Engineering IV	T1	5:30	North Voyageurs
McLaughlin, Carrie	All Disciplines I	R42	3:00	Ballroom
McMahon, Erin	All Disciplines I	R9	3:00	Ballroom
Melsness, Paul	International Business	V1	5:30	North Glacier
Merriam, Jenny	All Disciplines II	Z23	6:30	Ballroom
Meuleners, Andrea	All Disciplines II	Z17	6:30	Ballroom
Milstroh, Kimberly	Geography I	F2	11:15	Mississippi
Mix, Richard	All Disciplines I	R17	3:00	Ballroom
Mondloch, Joseph	Science and Engineering II	J4	2:45	North Voyageurs
Motschke, Lisa	All Disciplines I	R59	3:00	Ballroom
	All Disciplines II	Z22	6:30	Ballroom

Student Presenter	Session	Presentation Index	Time	Room
Neis, Carissa	All Disciplines II	Z13	6:30	Ballroom
Nelson, Wendy	All Disciplines II	Z26	6:30	Ballroom
Nesshengel, Marleny	Behavioral Studies II	K6	3:15	South Voyageurs
Nestor, Kyle	All Disciplines I	R6	3:00	Ballroom
Nguyen, Alyssa	All Disciplines II	Z35	6:30	Ballroom
Nguyen, Emily	The Renaissance	Y2	5:45	Lady Slipper
Nishiki, Miho	All Disciplines II	Z45	6:30	Ballroom
Nodland, Heather	All Disciplines II	Z26	6:30	Ballroom
Noehring, Nichole	All Disciplines II	Z31	6:30	Ballroom
Notsch, Shana	International Business	V3	6:00	North Glacier
Nunn, Rob	All Disciplines I	R7	3:00	Ballroom
Nyaga, Carol	All Disciplines I	R32	3:00	Ballroom
Ogwang, Zacharia	All Disciplines I	R17	3:00	Ballroom
Olah, Shannon	All Disciplines I	R59	3:00	Ballroom
Oldakowalski, Sara	SCSU Survey	Q1	2:00	Oak
Olson, Kristoff	All Disciplines II	Z17	6:30	Ballroom
Osmondson, Jackie	All Disciplines I	R17	3:00	Ballroom
Pairolero, Amber	All Disciplines II	Z26	6:30	Ballroom
Paquette, Adam S	All Disciplines I	R40	3:00	Ballroom
	All Disciplines II	Z23	6:30	Ballroom
Paumen, Rebecca	All Disciplines I	R54	3:00	Ballroom
Pelot, Adam	All Disciplines II	Z1	6:30	Ballroom
Perry, Kimberly	All Disciplines I	R23, R33	3:00	Ballroom
	All Disciplines II	Z23	6:30	Ballroom
Petersen, David	Interdisciplinary Science Symposium	A5	12:00	North Voyageurs
	All Disciplines I	R29	3:00	Ballroom
Peterson, Amanda	All Disciplines II	Z7	6:30	Ballroom
Peterson, Cassandra	All Disciplines II	Z10	6:30	Ballroom
Peterson, Debbie	Behavioral Studies II	K4	2:45	South Voyageurs
Peterson, Garret	All Disciplines I	R2	3:00	Ballroom
Peterson, Jaclyn	Islam: A Global Perspective	O3	2:30	Lady Slipper
	The Renaissance	Y6	6:45	Lady Slipper
Pfeffer, Derek	Science and Engineering V	W1	5:30	South Glacier
Phan, Ngoc	SCSU Survey	Q1	2:00	Oak
Phang, Chin-Sien	Development/Administration of College of Social Sciences Re- Accreditation Survey	M1	2:00	South Glacier
Piere, Christopher	All Disciplines II	Z44	6:30	Ballroom
Piotrowski, Aaron	Science and Engineering IV	T5	6:30	North Voyageurs
Plante, Adam	All Disciplines I	R3	3:00	Ballroom
Redding, Melissa	All Disciplines I	R30	3:00	Ballroom
Reichardt, Robert	Geography I	F1	11:00	Mississippi
Renslow, Mark	Science and Engineering I	B1	11:00	South Voyageurs

Student Presenter	Session	Presentation Index	Time	Room
Riedner, Broc	Science and Engineering II	J1	2:00	North Voyageurs
Ries, Michael	Science and Engineering III	N4	2:45	Granite
	All Disciplines I	R41	3:00	Ballroom
Roering, Andrew	All Disciplines I	R61	3:00	Ballroom
Rogers, Dennis	Behavioral Studies I	C2	11:15	North Glacier
Rono, Saasha	All Disciplines I	R2	3:00	Ballroom
Roskop, Luke	Science and Engineering II	J5	3:00	North Voyageurs
Roth, Cassandra	All Disciplines II	Z31	6:30	Ballroom
Salad, Mohammad	All Disciplines II	Z28	6:30	Ballroom
Sanderson, David	All Disciplines I	R30	3:00	Ballroom
Santiago, Helen	All Disciplines I	R1	3:00	Ballroom
Schlagel, Adam	All Disciplines II	Z21	6:30	Ballroom
Schnabel, Christiana	All Disciplines II	Z13	6:30	Ballroom
Schrubbe, Jr., Gordon	Humanities	D3	11:30	South Glacier
Schultz, Bernie H.	All Disciplines I	R48	3:00	Ballroom
Schutz, Nathan	Geography II	P1	2:00	Mississippi
Schwitzer, Heidi	Behavioral Studies II	K4	2:45	South Voyageurs
Sedhain, Anita	All Disciplines II	Z5	6:30	Ballroom
Seiler, Kathy	All Disciplines I	R54	3:00	Ballroom
Selinger, Gabe	All Disciplines I	R18	3:00	Ballroom
Senger, Hannah	All Disciplines II	Z26	6:30	Ballroom
Sery, Joseph	Humanities	D1	11:00	South Glacier
	Behavioral Studies II	K1	2:00	South Voyageurs
Severson, Nicole	SCSU Survey	Q1	2:00	Oak
Sewell, Sarah	All Disciplines II	Z32	6:30	Ballroom
Shanov, Adrian	Science and Engineering I	B5	12:00	South Voyageurs
Sherchan, Sudip	All Disciplines II	Z4	6:30	Ballroom
Shogren, Phillip	Science and Engineering III	N4	2:45	Granite
Shrestha, Sangeeta	Development/Administration of College of Social Sciences Re- Accreditation Survey	M1	2:00	South Glacier
Shub, Daniel	Applied Linguistics and English	G1	11:00	Oak
Sills, Laura	All Disciplines II	Z25	6:30	Ballroom
Skumautz, Erin	All Disciplines I	R58	3:00	Ballroom
Smith , Justin T.	International Business	V1	5:30	North Glacier
Sogge, Johan	All Disciplines I	R38	3:00	Ballroom
Spanier, Claire	Behavioral Studies II	K2	2:15	South Voyageurs
Spearman, Brian	Science and Engineering III	N4	2:45	Granite
Springer, Stacey	SCSU Survey	Q1	2:00	Oak
Srivastav, Rishi	All Disciplines I	R11	3:00	Ballroom
Stachowski, Alicia	All Disciplines I	R14, R33	3:00	Ballroom
Stambaugh, Morgan	All Disciplines I	R60	3:00	Ballroom

Student Presenter	Session	Presentation Index	Time	Room
Stanley, Todd	All Disciplines I	R6	3:00	Ballroom
	All Disciplines II	Z30	6:30	Ballroom
Stearns, Matthew	All Disciplines II	Z18	6:30	Ballroom
Steffen, Sara	All Disciplines I	R30	3:00	Ballroom
Steinleitner, Beth	Gender Studies	U3	6:00	South Voyageurs
Stiles, Paul	Development/Administration of College of Social Sciences Re- Accreditation Survey	M1	2:00	South Glacier
Storlien, Joseph	All Disciplines I	R51, R55	3:00	Ballroom
Sun, Kyung	Statistics and Mathematics	H4	11:45	Granite
Suzuki, Kumiko	Statistics and Mathematics	H2	11:15	Granite
Taylor, Kelley	All Disciplines I	R21	3:00	Ballroom
Terry, Jay	All Disciplines I	R57	3:00	Ballroom
Theis, Steve	All Disciplines I	R19	3:00	Ballroom
Thompson, Sara	All Disciplines I	R30	3:00	Ballroom
Timperley, Jess	All Disciplines I	R25	3:00	Ballroom
Tomczik, Kelly	Spanish	E1	11:00	Lady Slipper
Trisko, Jenna	All Disciplines I	R60	3:00	Ballroom
Upadhyaya, Prakash	All Disciplines II	Z4	6:30	Ballroom
VanLanduyt, Lisa	What Baby Boomers Want in Retirement	L1	2:00	North Glacier
Vereen, Shalei	All Disciplines II	Z11	6:30	Ballroom
Vincent, Jordan	Interdisciplinary Science Symposium	A3	11:30	North Voyageurs
Vogt, Matthew	Geography I	F5	12:00	Mississippi
Wagle, Prajesh	All Disciplines I	R11	3:00	Ballroom
Walker, Katie	All Disciplines II	Z8	6:30	Ballroom
Walseth, Brian	Science and Engineering III	N3	2:30	Granite
Walz, Benedict	All Disciplines II	Z14	6:30	Ballroom
Webb, Aaron	Statistics and Mathematics	H3	11:30	Granite
Weber, Benjamin	Science and Engineering II	J2	2:15	North Voyageurs
Wentland , Laura	All Disciplines II	Z13	6:30	Ballroom
Wessel, Emily	All Disciplines I	R46	3:00	Ballroom
Wiant, Molly	The Renaissance	Y5	6:30	Lady Slipper
Willert, Sara	All Disciplines I	R1	3:00	Ballroom
Wilson, Charles	Geography I	F4	11:45	Mississippi
Wittman, Abbi	All Disciplines II	Z42	6:30	Ballroom
Woolery, Ronald	Humanities	D4	11:45	South Glacier
Wrolson, David	Geography I	F3	11:30	Mississippi
Wu, Yunsong	All Disciplines II	Z20	6:30	Ballroom

Faculty Sponsor Index

Faculty Sponsor	Department	Presentation Index	Time	Room
Aceves, Robert	Aviation	B3	11:30	South Voyageurs
		V1	5:30	North Glacier
Anda, Andrew	Computer Science	H3	11:30	Granite
Andrzejewski, Julie	Human Relations and Multicultural Education	U1	5:30	South Voyageurs
Arriagada, Jorge	Biological Sciences	T2	5:45	North Voyageurs
Atkins, Annette	History, CSB/SJU	U2	5:45	South Voyageurs
Baliga, Bantwal	Mechanical and Manufacturing Engineering	J2	2:15	North Voyageurs
Bekkala, Andrew	Mechanical and Manufacturing Engineering	F4	11:45	Mississippi
		B5	12:00	South Voyageurs
		N4	2:45	Granite
Bender, Michner	Environmental and Technological Studies	N3	2:30	Granite
		R51	3:00	Ballroom
		R55	3:00	Ballroom
		Z32	6:30	Ballroom
		Z42	6:30	Ballroom
Berila, Elizabeth	Women's Studies	O1	2:00	Lady Slipper
Bristow, Dennis	Marketing and Business Law	C3	11:30	North Glacier
Buske, Dale	Mathematics	H2	11:15	Granite
Covey, Steve	Mechanical and Manufacturing Engineering	B2	11:15	South Voyageurs
		W1	5:30	South Glacier
Daughters, Karyl	Communication Studies, CSB/SJU	K1	2:00	South Voyageurs
		K2	2:15	South Voyageurs
Davis, Elaine	Management	R58	3:00	Ballroom
		R9	3:00	Ballroom
		V2	5:45	North Glacier
Des Jardins, Joseph	Philosophy, CSB/SJU	D1	11:00	South Glacier
DeVoe, Marlene	Psychology	Z45	6:30	Ballroom
Dick, Marie	Mass Communications	K6	3:15	South Voyageurs
Dorn, Judith	English	G1	11:00	Oak
		G2	11:15	Oak
Dvorak, Michael	Chemistry	Z16	6:30	Ballroom
		Z34	6:30	Ballroom
Frank, Stephen	Political Science	Q1	2:00	Oak
Galler, Robert	History	D3	11:30	South Glacier
		D4	11:45	South Glacier
Gazal, Oladele	Biological Sciences	W4	6:15	South Glacier
		Z44	6:30	Ballroom
George, Peter	Electrical and Computer Engineering	R11	3:00	Ballroom
Gilbertson, Douglas Lee	Criminal Justice	U4	6:15	South Voyageurs
Glade, Betsy	History	D5	12:00	South Glacier

Faculty Sponsor	Department	Presentation Index	Time	Room
Glazos, Michael	Electrical and Computer Engineering	Z37	6:30	Ballroom
Greaves, Edward	Political Science	C5	12:00	North Glacier
		O5	3:00	Lady Slipper
Gregory, Daniel	Chemistry	A4	11:45	North Voyageurs
		J4	2:45	North Voyageurs
		J5	3:00	North Voyageurs
		R61	3:00	Ballroom
		Z24	6:30	Ballroom
Hammes, Michelle Kukoleca	Political Science	Q1	2:00	Oak
Harlander, John	Physics, Astronomy and Engineering Science	Z30	6:30	Ballroom
		Z36	6:30	Ballroom
Hasbrouck, Michael	Foreign Languages and Literature	E2	11:15	Lady Slipper
Hauslein, Patricia	Biological Sciences	R33	3:00	Ballroom
Havir, Linda	Sociology and Anthropology	L1	2:00	North Glacier
Heneghan, Michael	Electrical and Computer Engineering	R7	3:00	Ballroom
Hou, Ling	Electrical and Computer Engineering	Z5	6:30	Ballroom
Huang, Danrun	Mathematics	H4	11:45	Granite
		H5	12:00	Granite
Huntzicker, William	Mass Communications	R5	3:00	Ballroom
Illies, Jody	Psychology	Z23	6:30	Ballroom
Jazwinski, Christine	Psychology	R20	3:00	Ballroom
Jeannot, Michael	Chemistry	R32	3:00	Ballroom
		Z34	6:30	Ballroom
Johnson Warner, Susan	Nursing Science	Z11	6:30	Ballroom
Jones, Kenneth	History, CSB/SJU	U2	5:45	South Voyageurs
Jorgensen, Leeann	Educational Leadership and Community Psychology	C2	11:15	North Glacier
		K3	2:30	South Voyageurs
		R2	3:00	Ballroom
		R28	3:00	Ballroom
		R30	3:00	Ballroom
		R49	3:00	Ballroom
		R54	3:00	Ballroom
		Z14	6:30	Ballroom
		Z3	6:30	Ballroom
Julius, Matthew	Biological Sciences	R25	3:00	Ballroom
		R39	3:00	Ballroom
		Z29	6:30	Ballroom
		Z31	6:30	Ballroom
		Z39	6:30	Ballroom
		Z40	6:30	Ballroom
Julstrom, Bryant	Computer Science	B1	11:00	South Voyageurs

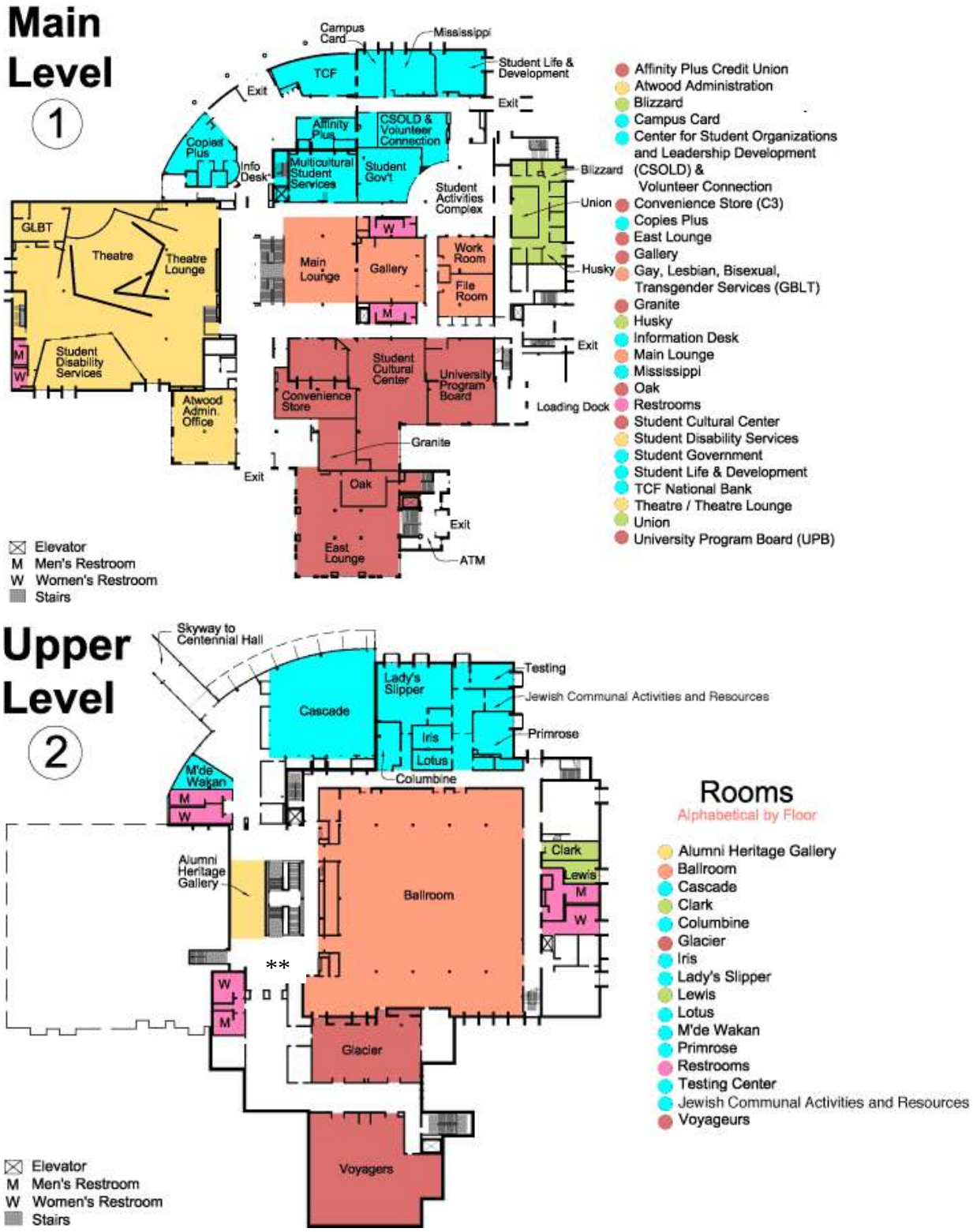
Faculty Sponsor	Department	Presentation Index	Time	Room
Kasi, Balsy	Environmental and Technological Studies	R15	3:00	Ballroom
		R3	3:00	Ballroom
		R8	3:00	Ballroom
Keith, Sandra	Mathematics	T4	6:15	North Voyageurs
Koffi, Ettien	English	G5	12:00	Oak
Krystyniak, Rebecca	Chemistry	J3	2:30	North Voyageurs
		Z6	6:30	Ballroom
Kulas, John	Psychology	C4	11:45	North Glacier
		R14	3:00	Ballroom
		R23	3:00	Ballroom
		R40	3:00	Ballroom
		R42	3:00	Ballroom
		R44	3:00	Ballroom
		Z15	6:30	Ballroom
		Z41	6:30	Ballroom
Kvaal, Christopher	Biological Sciences	R34	3:00	Ballroom
		Z29	6:30	Ballroom
Lawal, Banji	Statistics	W2	5:45	South Glacier
Lenz, Brenda	Nursing Science	R1	3:00	Ballroom
		R17	3:00	Ballroom
		R22	3:00	Ballroom
		R45	3:00	Ballroom
		Z11	6:30	Ballroom
		Z13	6:30	Ballroom
Leppman, Elizabeth	Geography	F1	11:00	Mississippi
		F2	11:15	Mississippi
		F3	11:30	Mississippi
		F5	12:00	Mississippi
		P1	2:00	Mississippi
		P2	2:15	Mississippi
		P3	2:30	Mississippi
		P4	2:45	Mississippi
		R4	3:00	Ballroom
		P5	3:00	Mississippi
Lu, Jiang	Statistics	R24	3:00	Ballroom
Mahroof-Tahir, Mohammad	Chemistry	A3	11:30	North Voyageurs
		A5	12:00	North Voyageurs
		R29	3:00	Ballroom
		R47	3:00	Ballroom
		Z44	6:30	Ballroom
Marcattilio, Anthony	Biological Sciences	R50	3:00	Ballroom

Faculty Sponsor	Department	Presentation Index	Time	Room
Mechelke, Mark	Chemistry	R35	3:00	Ballroom
		R56	3:00	Ballroom
		R57	3:00	Ballroom
		Z22	6:30	Ballroom
Melcher, Joseph	Psychology	R60	3:00	Ballroom
Miller, Kenneth	Mechanical and Manufacturing Engineering	R41	3:00	Ballroom
Minger, Mark	Biological Sciences	Z12	6:30	Ballroom
		Z8	6:30	Ballroom
Mueller, Isolde	Foreign Languages and Literature	V3	6:00	North Glacier
		V4	6:15	North Glacier
Mwangi, Mumbi	Women's Studies	U3	6:00	South Voyageurs
Nordell, Janis	Nursing Science	R1	3:00	Ballroom
		R22	3:00	Ballroom
Ofstedal, Kathleen	Child and Family Studies	R19	3:00	Ballroom
Onyiah, Leonard	Statistics	C1	11:00	North Glacier
		R12	3:00	Ballroom
Petzold, Mark	Electrical and Computer Engineering	Z4	6:30	Ballroom
Philippot, Raymond	English	X2	5:50	Granite
Pound, Kate	Earth and Atmospheric Science	Z1	6:30	Ballroom
		Z27	6:30	Ballroom
Przytula, Tomasz	Mass Communications	K4	2:45	South Voyageurs
Rangamani, Grama	Communication Disorders	R48	3:00	Ballroom
Reker, Kevin	Park Industries	W1	5:30	South Glacier
Restani, Marco	Biological Sciences	N1	2:00	Granite
		T3	6:00	North Voyageurs
Robinson, David	Statistics	Z43	6:30	Ballroom
Robinson, James	English	G4	11:45	Oak
		X1	5:30	Granite
Rockenstein, Zoa	Psychology	R33	3:00	Ballroom
Rodgers, Judith	Information Media	B4	11:45	South Voyageurs
Rose, Charles	Environmental and Technological Studies	Z2	6:30	Ballroom
Rothaus, Richard	History	D2	11:15	South Glacier
Scheel, Elizabeth	Sociology and Anthropology	R13	3:00	Ballroom
Schoenfuss, Heiko	Biological Sciences	N6	3:15	Granite
		R34	3:00	Ballroom
		R36	3:00	Ballroom
		R37	3:00	Ballroom
		R52	3:00	Ballroom
		Z29	6:30	Ballroom
Schuh, Timothy	Biological Sciences	A5	12:00	North Voyageurs
		R29	3:00	Ballroom

Faculty Sponsor	Department	Presentation Index	Time	Room
		Z10	6:30	Ballroom
		Z48	6:30	Ballroom
Sibley, Thomas	Mathematics, CSB/SJU	T1	5:30	North Voyageurs
Simones, Joyce	Nursing Science	W4	6:15	South Glacier
Simpson, Patricia	Biological Sciences	R21	3:00	Ballroom
		R27	3:00	Ballroom
		R31	3:00	Ballroom
		Z19	6:30	Ballroom
		Z21	6:30	Ballroom
Singh, Sarjinder	Statistics	H1	11:00	Granite
		Z18	6:30	Ballroom
Splittgerber, Lisa	Foreign Languages and Literature	E1	11:00	Lady Slipper
		E3	11:30	Lady Slipper
		O2	2:15	Lady Slipper
		O3	2:30	Lady Slipper
		O4	2:45	Lady Slipper
		Y1	5:30	Lady Slipper
		Y2	5:45	Lady Slipper
		Y3	6:00	Lady Slipper
		Y4	6:15	Lady Slipper
		Y5	6:30	Lady Slipper
		Y6	6:45	Lady Slipper
Sreerama, Lakshmaiah	Chemistry	A1	11:00	North Voyageurs
		A2	11:15	North Voyageurs
		A5	12:00	North Voyageurs
		R16	3:00	Ballroom
		R29	3:00	Ballroom
		R34	3:00	Ballroom
		R38	3:00	Ballroom
		R43	3:00	Ballroom
		R46	3:00	Ballroom
		W3	6:00	South Glacier
		Z10	6:30	Ballroom
		Z28	6:30	Ballroom
		Z35	6:30	Ballroom
		Z39	6:30	Ballroom
		Z7	6:30	Ballroom
Teutsch-Dwyer, Marya	English	G3	11:30	Oak
		X3	5:50	Granite
Thamvichai, Ratchaneekorn	Electrical and Computer Engineering	R18	3:00	Ballroom
Tomhave Blauvelt, Martha	History, CSB/SJU	U2	5:45	South Voyageurs
Tubbiola, Maureen	Biological Sciences	N2	2:15	Granite

Faculty Sponsor	Department	Presentation Index	Time	Room
		W4	6:15	South Glacier
		Z25	6:30	Ballroom
Valdes, Leslie	Psychology	R59	3:00	Ballroom
Vogt, Timothy	Electrical and Computer Engineering	R10	3:00	Ballroom
Wagner, Steven	Political Science	Q1	2:00	Oak
Webster, Marcus	Biological Sciences, CSB/SJU	Z17	6:30	Ballroom
Whites, Margery	Communication Disorders	Z26	6:30	Ballroom
Williams, Carolyn	College of Social Sciences	M1	2:00	South Glacier
Womack, Maria	Physics, Astronomy and Engineering Science	R26	3:00	Ballroom
		R6	3:00	Ballroom
		Z38	6:30	Ballroom
Woodard, Janet	Biological Sciences	N5	3:00	Granite
Yao, Aiping	Electrical and Computer Engineering	Z20	6:30	Ballroom
		Z9	6:30	Ballroom
Yu, Warren	Mechanical and Manufacturing Engineering	J1	2:00	North Voyageurs

Floor Plan for Atwood Memorial Center



**Registration Table