4-24-2007

10th Annual St. Cloud State University Student Research Colloquium 2007

St. Cloud State University

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Student Research Colloquium 2007

Program Highlights

Registration

All student presenters and project 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 Proceedings or Colloquium Short Program should go to the registration table.

Invited Alumnus Address – Cascade Room

12:30 p.m. In "Got Exercise? Physical Activity and Bone Development," Moira Petit will provide an overview of the role of physical activity on bone development. She will also discuss current research on the optimal age for activity to affect bone development, what activities work best, and the long-term benefits. A University of Minnesota School of Kinesiology assistant professor, Petit earned her master's degree in exercise physiology from St. Cloud State University in 1994. In 2000, she earned a Ph.D. from the University of British Columbia, Vancouver, in exercise physiology with a focus on pediatric bone health.
1:30 p.m. — Reception

Reception and Closing Ceremony – Cascade Room

6:45 p.m. — All SRC attendees are welcome to a reception in AMC Cascade Room. Students who present their fully stamped passports will be entered into a drawing to win $400 in prizes!

7:15 p.m. — College of Science and Engineering Denise M. McGuire Student Research Awards will be distributed and the SRC 2007 Best Poster Awards will be announced and the winners awarded.

Schedule of Events

Event	Time	Room in AMC
Early Morning Presentations (Sessions A-H)		
Registration for Presenters and Project Sponsors	8:00 - 8:45	2nd Floor
Session A: All Disciplines (Poster Session)	9:00 - 10:50	Ballroom
Session B: Geography I	9:00 - 10:40	North Glacier
Session C: Engineering and Design	9:00 - 10:40	South Glacier
Session D: Social Sciences I	9:00 - 10:40	Lady Slipper
Session E: Biological Sciences	9:00 - 10:40	South Voyageurs
Session F: Linguistics and Humanities	9:00 - 10:40	North Voyageurs
Session G: Aviation	9:00 - 10:40	Oak
Session H: Psychology	9:00 - 10:40	Granite
Late Morning Presentations (Sessions I-M)		
Registration for Presenters and Project Sponsors	10:00 - 10:45	2nd Floor
Session I: Geography I	11:00 - 12:20	North Glacier
Session J: Biochemistry	11:00 – 12:20	Oak
Session K: Social Sciences II	11:00 - 12:20	Lady Slipper
Session L: Humanities I	11:00 - 12:20	South Voyageurs
Session M: Science and Engineering I	11:00 – 12:20	Mississippi
Keynote Address and Reception		
"Got Exercise? Physical Activity and Bone Development"	12:30 - 1:30	Cascade
Reception for Dr. Moira Petit	1:30 - 2:00	Cascade
Afternoon Presentations (Sessions N-T)		
Registration for Presenters and Project Sponsors	12:00 - 1:45	2nd Floor
Session N: SCSU Survey	2:00 - 3:30	North Voyageurs
Session O: SCSU Survey	2:00 - 3:30	South Voyageurs
Session P: Science and Engineering II	2:00 - 3:20	North Glacier
Session R: Performance	2:00 - 3:30	Little Theatre
Session S: Communications	2:00 - 3:20	Lady Slipper
Session T: All Disciplines (Poster Session)	3:00 - 4:50	Ballroom
Evening Presentations (Sessions U-Y)		
Registration for Presenters and Project Sponsors	4:00 - 4:45	2nd Floor
Session U: Language	5:00 - 6:00	North Glacier
Session V: Humanities II	5:00 - 6:40	Lady Slipper
Session W: Natural Sciences	5:00 - 6:30	Oak
Session X: Science and Engineering III	5:00 - 6:00	Mississippi
Session Y: Communications	5:00 - 6:00	North Voyageurs
Reception and Student Award Ceremony		
Reception Open to All Attendees	6:30 – 7:00	Cascade
Student Awards Ceremony	7:00 – 8:00	Cascade

Acknowledgement of Research Sponsors

St. Cloud State University

College of Education

Child and Family Studies

Palm, Glen

Community Psychology

Jorgensen, Leeann

Rapp, John

Counselor Education and Educational Psychology

Kuhlman, Brad

Human Relations and Multicultural Education

Huber-Warring, Tonya

Kellogg, Polly

Special Education

Beutel, Dory

Pickle, Michael

Waletzko, Patty

College of Fine Arts and Humanities

Communication Sciences Disorders

Rangamani, Grama

Whites, Margery

Communication Studies

Rehling, Diana

English

Dorn, Judith

Kim, Choonkyong

Koffi, Ettien

Mohrbacher, Carol

Robinson, James

Foreign Languages and Literature

Mueller, Isolde

Splittgerber, Lisa

Triana-Echeverria, Luz C.

Mass Communications

Ahmed, Niaz

Fish, Marjorie

Heinrich, Lisa

Przytula, Tomasz

Philosophy

Gill, Kate

G.R. Herberger College of Business

Business Computer Information Systems

Chen, Jim

Guster, Dennis

Schmidt, Mark

Management

Polacco, Alex

College of Science and Engineering

Aviation

Aceves, Robert

Biological Sciences

Arriagada, Jorge

Cetkovic-Cvrlje, Marina

Gazal, Oladele

Jacobson, Bruce

Julius, Matthew

Kvaal, Christopher

Minger, Mark

Restani, Marco

Schoenfuss, Heiko

Schuh, Timothy

Simpson, Patricia

Tubbiola, Maureen

Chemistry

Gregory, Daniel

Jeannot, Michael

Leenay, Tamara

Mahroof-Tahir, Mohammad

McKenna, Jack

Mechelke, Mark

Neu, Don

Sadrai, Mahin

Sreerama, Lakshmaiah

Computer Science

Bejan, Alina

Earth and Atmospheric Sciences

Kubesh, Rodney

Pound, Kate

Electrical and Computer Engineering

Deng, Xidong

Glazos, Michael

Hou, Ling

Petzold, Mark

Thamvichai, Ratchaneekorn

Vogt, Timothy

Yao, Aiping

Environmental and Technological Studies

Bender, Mitch

Rose, Charles

Mechanical and Manufacturing Engineering

Bekkala, Andrew

Byun, Jeongmin

Covey, Steven

Miller, Kenneth

Yu, Warren

Nursing Science

DeBruycker, Jo

Johnson Warner, Susan

Lenz, Brenda

Schorn-Rhoda, Mary Ann

Physics, Astronomy and Engineering Science

Haglin, Kevin

Lidberg, Russell

Statistics and Computer Networking

Murphy, Robert

Onyiah, Leonard

Robinson, David

College of Social Sciences

Community Studies

Villanueva, Margaret

Economics

Banaian, King

Ethnic Studies

Casanova, Steve

Cha, Dia

Lehman, Christopher

Geography

Baker, Randal

Hochmair, Henry

John, Gareth

Gerontology

Karasik, Rona

Political Science

Frank, Stephen

Greaves, Edward

Wagner, Steven

Psychology

Buswell, Brenda

DeVoe, Marlene

Illies, Jody

Jazwinski, Christine

Melcher, Joseph

Valdes, Leslie

Sociology and Anthropology

Havir, Linda

Hope, Liddy

Scheel-Keita, Elizabeth

Women's Studies

Berila, Elizabeth

Mwangi, Mumbi

U.S. Geological Survey

Lee, Kathy

Stearns County Human Services

Eickhoff, Carol

College of Saint Benedict / St. John's University

Social Sciences, Political Science

Haeg, Claire

Indian Institute of Chemistry, Bangalore, India

Department of Organic Chemistry

Islam, Kabirul

Mehta, Goverdham

University of Minnesota

Department of Chemistry

Hoye, Thomas

University of Wisconsin-Madison

Physics, Astronomy and Engineering Science

Mierkiewicz, Ed

University of Wisconsin-River Falls

Social Sciences, Sociology and Anthropology

Davis, Tricia

Program

9:00- 10:50	Session A: All Disciplines	Ballroom
Moderator	Stuart Umberger, Assistant Director for the Center for Student Organization and Leadership Development	
Presentation Index	Presenter(s)	Title
A1	Winkleman, Sarah	Novel Chemotherapeutic Agents Based on the Natural Products Melophlin A and Methyllucidone
A2	Steinbach, Ryan Erickson, Debra; Cruser, Amy; Kariniemi, Jodi	Nutrition, Exercise and Depression Prevention
A3	Jordan, Paul Tack, Martha Hommerding, Jessica Brown, Hillary; Akumah, Magdalene Schumann, Jennifer; Burch, Debra; Tomczik, Kelly	Somali Emergency Preparedness
A4	Savchuk, Alla ; Reed, Liz Lymer, LaRae; Nord, Kristin McAdams, Sheila; Greninger, Chelsea Anderson, Rachel; Sullivan, Angela	Wright County Fall Assessment Survey
A5	Nilsson, Kaara; Frohlich, Chelsea Maas, Casey; Gavin, Greg Winkelman, Angela Renn, Corinne;Spaulding, Nicole	Meeker County Fluoride Dental Varnishing
A6	Scully, Shanna; Ghose, Shourjo Marine, Sasha	Sensitivity of Human Breast Adenocarcinoma Cells to Ottelione A and Its Structural Analogs and Possible Molecular Basis for Resistance to Ottelione A
A7	Weber, Nina; Abfalter, Julie Fredenburg, Jaena; Solinger, Jodie	Distracted Driving Behaviors Among High School Juniors in Mille Lacs County
A8	Gallus, Nicole; Mack, Larisa Bethke, Kelly; Lundquist, Britta	Child Home Safety
A9	Unanaowo, Arit; Moen, Dana Karnik, Laura; Heilig, Sarah	Teenage Sexual Education
A10	Malchow, David	Determination of the Volatile Components of Various Chardonnays
A11	Fay, Andrea	The Effect of Divorce on Sibling Attachment
A12	Legatt, Graig	Insulin Mimetic Properties of Vanadium-Flavonoid Complexes
A13	Finseth, Amber	The Effect of Exercise on Mood and Depression
A14	Krippner, Mark	Geothermal Energy Localized
A15	Schwenzfeier, Jon	Photochemistry of 2-Biphenylisocyanate
A16	Grant, Rainer	Expression, Purification and Characterization of Two Human Aldehyde Dehydrogenases (ALDH3A1 & ALDH9A1)

NOTES:

9:00- 10:50	Session A: All Disciplines	Ballroom
Moderator	Stuart Umberger, Assistant Director for the Center for Student Organization and Leadership Development	
Presentation Index	Presenter(s)	Title
A17	Gregor, Kendra	Personalization and Territorial Behavior Within a Residential Room
A18	Melykson, Mitchell	Should the Minnesota Gray Wolf be Removed from the U.S. Fish and Wildlife Service's List of Endangered and Threatened
A19	Drake, Sarah	*Af Soomaali ma ku hadli kartaa?* Do You Speak Somali? A Study on Somali Language and Oral Tradition Preservation in St. Cloud, Minnesota
A20	Schnobrich, Charlene	Experimental Verification of a Kinetic Model for Headspace Liquid-Phase Microextraction
A21	Johnson, Kari; Bistodeau, Jessica	The Effects of CART on Chronic Stroke Survivors
A22	Kondari, Vamsi; Kukkala, Swetha Khambhampati, Sri Aparna	Information Retrieval on Peer-to-Peer Databases
A23	Walters, Kerrie	The Design and Synthesis of Novel RAS Farnesyl Protein Transferase Inhibitors
A24	Dillman, Allissa	The Design and Synthesis of Novel Goniothalamin Analogues
A25	Murdy, Sue; Anderson, Carey Kalar, Anne; Hinsz, Ashleigh Krippner, Darcy; Kuehn, Monica	Changes in the Job of the Speech-Language Pathologist: A Multi-Year Perspective
A26	Razim-Fitzsimons, Mary Ann; Saxton, Kelsey; Stainbrook, Lisa; Hohnberger, Kristin Franckowiak, Helen	What Do Speech-Language Pathologists Do? A 10-Year Follow-Up Study
A27	McGowan, Emily	Tornado Warning Systems
A28	Lieser, Elizabeth; Janisch, Robert Triemstra, Jennifer; Froehlich, Chris Pamplona, August	Structure-Based Discovery of Drugs to Treat Type II Diabetes
A29	Staples, Ashley; Christianson, Aaron	Cultural Beliefs of Race, Gender, and Emotional Experience and Expression
A30	Anderson, Todd	Survey of Waterfront Landowners
A31	Adamson, Natasha	Twelve-Year Survey Trend Data Regarding Graduates of the Rehabilitation Counseling Program
A32	Fedorova, Maria	Portrayal of Russia in the U.S. Media: A Survey of SCSU Students' Perceptions
A33	Walcheski, Christina	Shopping at the Mall: Economy of Movement and Cost-Benefit Analysis
A34	Olson, Rebekah	Effects of Extreme Weather Events on Burrowing Owl
A35	Basarich, April	The Influence of Social Intelligence on Leader Creative Problem Solving
A36	Yaeger, Kelly Ilstrup, Rachel; Pitman, Amber Janke, Naomi; Gumiela, Stephanie	A Preliminary Study of Evidence-Based Practice in Speech-Language Pathology

NOTES:

9:00 - 10:50	Session A: All Disciplines	Ballroom
Moderator	Stuart Umberger, Assistant Director for the Center for Student Organization and Leadership Development	
Presentation Index	Presenter(s)	Title
A37	Triemstra, Jennifer	Salivary Testosterone and Cortisol Levels in Female Rugby Players
A38	Dayama, Gargi Tsan, Fei Chin	Does WHI-P131, an Inhibitor of Janus Tyrosine Kinase (JAK) 3, Affect Mitogen-Induced T-Cell Proliferation?
A39	Sanoski, Brian	Geographical Information Systems (GIS) Study of Getchell Creek Watershed
A40	Jeannot, Lori; Larson, Teresa	Current Research in Solar Cells and Their Practical Applications
A41	Carlyon, Joseph; Eisterhold, Joe	Implementing Management Practices to Restore Native Vegetation at Minnesota Military Training Sites
A42	Pederson, Scott	Influence of Sodium Fluoride Concentration on Quantitative Analysis of Ethanol by Headspace Gas Chromatography in Urine Samples
A43	Janisch, Robert	Overview and Applications of Atomic Force Microscopy
A44	Busacker, David Nere, Andrew; Guertin, Timothy	Wireless Restaurant System
A45	Olmscheid, Derek Henspeter, Justin, Gutridge, Richard	Intensity Measurement Device for LED Warning System
A46	Ahmed, Taimour Frank, Cory, Eiden, Matthew	Weather Monitoring System with Wireless Capability
A47	Gesmundo, Matthew Peterson, Timothy; Honeck, Kelly	Digitially Controlled Analog Tranceiver
A48	Leahy, Eric Anderson, Kelli; Mom, Mary Dunham, Kyle; Joshi, Aneesh	HIV/AIDS in India: An Awareness
A49	Weiley, Kelly	Global Social Justice Service-Learning at a State University
A50	Colby, Amanda	Interval Recording for Duration Events
A51	Lenz, Matthew	Analysis of Nutrient Loading in St. Augusta Creek
A52	Mevissen, Laura	Global Warming: Is It Human Induced?
A53	Nelson, Bryan Swenson, Samuel	Use of Detox Center
A54	Nelson, Pam; Pederson, Daved Hed, Michelle; Cook, Sarah Iserberg, Andy; Jangu, Neema Osbeck, Angela; Joshi, Aneesh	HIV/AIDS in Africa: An Awareness

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Session B: Geography I		North Glacier
Moderator	Gareth John, Assistant Professor of Geography	
Time	Presenter(s)	Title
9:00 a.m.	Chase, Eric	Elm Creek Water Quality
9:20 a.m.	Wheeler, Jamie	Barriers to Russian Air Transportation - Why Russian Citizens Stay Put
9:40 a.m.	Bagent, Chelsey	What Phytoliths Can Tell Us About the Geography of Plants
10:00 a.m.	Robillard, Jordan	SCSU faculty and the Globe
10:20 p.m.	Watson, Cory	Diffusion of Gypsy Music

Session C: Engineering and Design		South Glacier
Moderator:	J. Michael Pickle, Assistant Professor of Special Education	
Time	Presenter(s)	Title
9:00 a.m.	Wieland, Carl; Rupp, Adam	Automator Chop Saw
9:20 a.m.	Dei, Nana	Design a Multi-User Campus Geographic Information System
9:40 a.m.	Meyer, Dana; Schafer, Jason	CNC Tool Changer Design
10:00 a.m.	Krzenski, Sara	Application Load Simulation and The Potential for DOS When the Linux Top Program Is Misused
10:20 a.m.	Dei, Nana	Database Security

Session D: Social Sciences I		Lady Slipper
Moderator	Kristian Twombly, Assistant Professor of Music	
Time	Presenter(s)	Title
9:00 a.m.	Knisley, Nikki	Seductive Indifference: Affordable Housing Mismeasurement
9:20 a.m.	Ogaja, Jermaine	The Impact of Foreign Direct Investment on Growth in Developing Countries
9:40 a.m.	Toenjes, Ashley	Global Politics: NGOs and the Afghan Women's Movement
10:00 a.m.	Otieno, Nelly; Mareini, Fatuma	Women in War-torn Countries
10:20 a.m.	Swanberg, Breanna	Globalization in Laos and Thailand: Changing Lifeways

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Session E: Biological Sciences		South Voyageurs
Moderator	Joyce Simones, Associate Professor of Nursing Science	
Time	Presenter(s)	Title
9:20 a.m.	Reberg, Alexander	Kinase Virulence Factors of *Toxoplasma Gondii*
9:40 a.m.	Roiko, Marijo	The Cloning and Characterization of *Toxoplasma Gondii* MAT1
10:00 a.m.	Jahns, Nathan	Occurrence of Endocrine Disruption in Minnesota Fish Within the Mississippi River: Assessment of Fish Health
10:20 a.m.	Freund, Curtis	*Copepod* Mortality in the Lower Chesapeake Bay and Causal Environmental Response

Session F: Linguistics and Humanities		North Voyageurs
Moderator	Lisa Splittgerber, Associate Professor of Foreign Languages and Literature	
Time	Presenter(s)	Title
9:00 a.m.	Deuser, Cindy	ESL Writing: Adding Richness and Depth Through Transformations
9:20 a.m.	Liao, Yuanyuan	The Professional Adjustment of ESL Teaching Assistants in College ESL Practium: Two Case Studies
9:40 a.m.	Pickens, Alexandra	Magic Realism
10:00 a.m.	Lange, Erica	*Lecciones de Bartolomé Las Casas*

Session G: Aviation		Granite
Moderator	Randy Evans, Director, Instructional Technology	
Time	Presenter(s)	Title
9:00 a.m.	Barrett, David	The ADA in Aviation
9:20 a.m.	Clark, Jason; Fox, Jeremy	Renewable Energy for Airports
9:40 a.m.	Duininck, Jonathan; Semph, Shawn	Runway/Taxiway Incursion Prevention
10:00 a.m.	Sunderland, Toby; Splittstoesser, Andrew	Runway Incursion Prevention
10:20 a.m.	Redfall, Tansy; Mahoney, Ryan	Geothermal Heating and Cooling

NOTES:

Session H: Psychology		Oak
Moderator	Judy Dorn, Professor of English	
Time	Presenter(s)	Title
9:00 a.m.	Smith, Renee	Attitudes Toward the Origin of Sexuality and Emotional Awareness
9:20 a.m.	Schlegal, Craig; Williams, Casey; Chiang, Jessie	Self- and Other-Control for Boys
9:40 a.m.	Eickhoff, Aaron	Identifying Emotions Under Cognitive Load
10:00 a.m.	Leyk, Candace	Public Relations Campaign for UTVS Television
10:20 a.m.	Kerfeld, Russel	Gaming and Attention

Session I: Geography II		North Glacier
Moderator	Joseph Melcher, Associate Professor of Psychology	
Time	Presenter(s)	Title
11:00 a.m.	Khadka, Megha	Pollution in the Mountain Ranges of Nepal
11:20 a.m.	Vogt, Matthew	College Football Recruiting Patterns
11:40 a.m.	Sipic, Neven	Effect on Prices of the Attributes of Sailing Boats: A Hedonic Prices Approach
12:00 p.m.	Reed, Bryan	Effectiveness of Geography Education

Session J: Biochemistry		Oak
Moderator	Michael Gorman, Assistant Professor, Reference Librarian	
Time	Presenter(s)	Title
11:00 a.m.	Michalski, Kathryn; Krekelberg, Elizabeth	Activated Carbon as an Option for Water Purification
11:20 a.m.	Gross, Aaron	Synthesis of Ethylene Glycol Ether Aldehydes and Their Enzymatic Oxidation by Human Aldehyde Dehydrogenases
11:40 a.m.	Thell, Alex; Melsha, Maria	MK57 Vertical Launch System Void Composite Study

NOTES:

Session K: Social Sciences II		Lady Slipper
Moderator	Mark Eden, Assistant Professor of Mass Communications	
Time	Presenter(s)	Title
11:00 a.m.	Segura, Monica	Positive Contributions from Latino Entrepreneurs and Professionals
11:20 a.m.	Schlabach, Gabriel	The Christian Right and the Double-Edged Sword of Politics
11:40 a.m.	Erickson, Shannon	Aging Women and Body Image
12:00 p.m.	Juma, Peter	Analysis of Risk Perceptions on the Internet Purchase Decision

Session L: Humanities		South Glacier
Moderator	Luz Triana-Echeverria, Assistant Professor of Foreign Languages and Literature	
Time	Presenter(s)	Title
11:00 a.m.	Wiant, Molly	Chocolate: The Food of the Gods
11:20 a.m.	Loch, Alex	Food Coloring in the United States
11:40 a.m.	Bourke, Molly	Una historia de Chile - la política y la gente
12:00 p.m.	Gunderson, Allen	German Translations from the Stearns County Historical Society

Session M: Science and Engineering I		Mississippi
Moderator	Steven Covey, Professor of Mechanical and Manufacturing Engineering	
Time	Presenter(s)	Title
11:00 a.m.	Dauphin, Alexander	Animal Avoidance Systems for Airports
11:20 a.m.	Altmann, Nathan; Dew, Michael Bryer, Zachary	Runway Incursion Avoidance
11:40 a.m.	Brown, Rebecca; Tschida, Adam Plumski, Duane	Planar Biaxial Test System
12:00 p.m.	Resman, Nate	Parameter Influence on Reverse Phase Single Drop Micro-extraction

NOTES:

Session N: Activitism		North Voyageurs
Moderator	Maria Mikolchak, Associate Professor of Foreign Languages and Literature	
Time	Presenter(s)	Title
2:00 p.m.	Heckendorn, Karyn Swanberg, Breanna; Montanez, Melissa Zeleke, Hermon; Lor, Fong; Ouro-Sama, Azolo	1995 M.E.Ch.A. Student Hunger Strike

Session O: SCSU Survey		South Voyageurs
Moderator	J. Michael Pickle, Assistant Professor of Special Education	
Time	Presenter(s)	Title
2:00 p.m.	Rassier, Justin	SCSU Survey Coverage of Previous Surveys
	Lohrman,Sara; Helm, Renee	UND Mascot Question
	Bromelkamp, Matt; Floersheim, Will	Gambling Questions
	Swanson,Jackie; Speich, Brittany	Women in Politics Questions
	Loehlein, Mike; Amundson,Sarah	Direction and Problems facing the state of Minnesota
	Ehlinger, Tim; Perish, Gayle	Iraq War Questions

Session P: Science and Engineering II		North Glacier
Moderator	Mark Schmidt, Assistant Professor of Business Computer Information Systems	
Time	Presenter(s)	Title
2:00 p.m.	Abba, Yannick	Modeling Changes in Basketball Performance by Repeated Measures Design
2:20 p.m.	Svare, Bruce Patel, Pinkle Balde, Abdourahamane	Anemometer (Wind Speed and Direction Detector)
2:40 p.m.	Walker, Cristl; Nichols, Thomas	Proposed Design and Next Generation Application of Airport Surface Safety Systems
3:00 p.m.	Kumar, Vijay	Biometric: How Safe Are You?

NOTES:

Session R: Performance		Little Theatre
Moderator	Lisa Splittgerber, Associate Professor of Foreign Languages and Literature	
Time	Presenter(s)	Title
2:00 p.m.	Asquith, Daniel Boerger, Mitzi; Bourke, Molly; Cinker, Kari; Danielson, Trevor; Denny, Matthew; Holthaus, Bethanne; Huttes, Corrin; Isaacson, Kelly; Kelley, Joseph; Kuschel, Russell; Ledeboer, Rebecca; Litterst, Graham; Lumley, Ryan; Lynch, Katherine; Martinez, Andres; Mikolchak, Lisa; Nguyen, Emily; Olson, Erin; Palin, Kelsi; Palmquist, Valerie; Priem, Jennifer; Semmler, Jana; Thornton, Makenzie; Williams, Nicole; Dahl, Karen—violin; Athman, Rachel—viola; Cansen, Amanda—cello; Allen, Carissa—guitar; Landon, Kara—vocals; Swantz, Josh—vocals/ composition	A Surprise Play From the Siglo de Oro

Session S: Communications		Lady Slipper
Moderator	Judy Dorn, Professor of English	
Time	Presenter(s)	Title
2:00 p.m.	Bashir, Manaf	Turkey's Membership to the European Union: An Image Problem and PR Challenge
2:20 p.m.	Redington, Josh; Kelsey, Sean	Quality Survey at St. Cloud State University
2:40 p.m.	Pegg, George	Integrative Learning in Teams
3:00 p.m.	Jackelen, Tamarah	Are Women More Objectified Than Men?: A Content Analysis of Feature Images in Maxim Magazine

3:00 – 4:50	Session T: All Disciplines	Ballroom
Moderator	Stuart Umberger, Assistant Director for the Center for Student Organization and Leadership Development	
Presentation Index	Presenter(s)	Title
T1	Hall, Tanya	Comet 73P/Schwassmann-Wachmann 3: O(1D) and H2O Production Rates
T2	Normand, Kevin	Discussion of an Anomalous Boulder and its Possible Origin in Chippewa County, Wisconsin
T3	Piotrowski, Aaron; Petersen, David	Taratogenic Effects of Ethylene Glycol Ethers on Xenopus Laevis Development and Role of Aldehyde Dehydrogenases in Determining Taratogenicity
T4	Niehoff, Loren	Searching for Key Indicators of Well-Being of Fathers and Families
T5	Abass, Victoria	Salivary Cortisol, DHEA and Testosterone Levels in Teenagers During High Stakes Competition
T6	Dickmeyer, Elizabeth	Global Warming
T7	Warns, Courtny	Body Modification and Self-Harm
T8	Stephen, Horvat; Swanson, Joshua	Degeneracy Pressure in a Quark-Gluon Plasma
T9	Smith, Brandon; Haugen, Neale Pundsack, Thomas	Charge Carrier Mobilities of Semiconductor Materials Determined Through Time-of-Flight Measurements

NOTES:

3:00 – 4:50	Session T: All Disciplines	Ballroom
Moderator	Stuart Umberger, Assistant Director for the Center for Student Organization and Leadership Development	
Presentation Index	Presenter(s)	Title
T10	Litzinger, Erin	Coral Reef Destruction
T11	Ormson, Renee; Rach, Sarah	Welfare to Work: A Closer Look
T12	Lyon, Catherine	Effects of Black Cohosh (*Actaea Racemosa L.*) on Virgin and Pregnant Uterine Contractility
T13	Smith, Brandon; Plautz, Matthew Schulz, Adam	Remote Perimeter Access via Wireless Fingerprint Identification
T14	Galzki, Jacob	Investigation of Feedlot Contribution to Coliform Contamination in the Sauk River
T15	Jones, Sarah; Snyder, Suzanne Forbregd, Wendy Kuhlmann, Michelle; Smith, Abby	Developing a Dementia Training Manual: Outcomes of an Intergenerational Service-Learning Project
T16	Hobbs, Joseph; Dayama, Gargi Messner, Emily	Effect of WHI-P131 on Mixed Lymphocyte Reaction (MLR)
T17	Hoffman, Brad	In What Ways Have the New ESB Ordinances Affected the Patterns of Green Space in Sartell, Minnesota's New Housing Developments
T18	Nichols, Todd	Design and Synthesis of a Novel RAS Farnesyl Protein Transferase Inhibitor
T19	Fernando, Koshali	Solution Studies of Vanadium-5-Hydroxyflavanoid Complex
T20	Storlien, Joseph	Risk Assessment of Manure Basin Abandonment Alternative
T21	Krekelberg, Elizabeth	Interaction of Ruthenium Complexes with DNA
T22	Smith, Brandon	Irradiation Patterning of Co/Cu/Co GMR Layers for Use in Magnetic Random Access Memory
T23	Desm, Rosa	Development of Novel Latent Fingerprinting Techniques Based on Binding/Complexing Properties of 8-Quinolinol Sulfate
T24	Johnson, Loretta; Knott, Tyler	The Effects of Red Clover on Bovine Trachea
T25	Christian, Curt	Sub-Cloning ALDH 6A1 by Restriction Digestion and Transfection into MCF7 Human Cancer Cells to Determine Possible Toxicity and Detoxification Effects
T27	Shionome, Yoshimi	Identification of ALDH3A1 Polymorphism in the Human Saliva
T28	Smith, Andrew	Interstate Highways and Population Growth Patterns In Metro Regions
T29	Gainey, Josh; Janisch, Robert	Characterization of Organic Crystal Surfaces by Atomic Force Microscopy
T30	Saleh, Amir	Feeding Biomechanics of Silvery Minnow Fishes
T31	Yanjon, Tsering	Characterization of Fathead Minnow and Frog Aldehyde Dehydrogenase with Regard to Their Role in Metabolism of Ethelene Glycol Ethers.

NOTES:

3:00 – 4:50	Session T: All Disciplines	Ballroom
Moderator	Stuart Umberger, Assistant Director for the Center for Student Organization and Leadership Development	
Presentation Index	Presenter(s)	Title
T32	Cunningham, Nickoli	Genetically Modified Foods
T33	Nadeau, Daniel	Analysis of Shoreline Soil Along the Sauk River
T35	Hoffmann, Todd	Cloning, Purification and Characterization of Human Aldehyde Dehydrogenase ALDH5A1 and Its Ability to Catalyze Detoxification of Certain Chemotherapeutics and Environmental Contaminants
T36	King, Kelsey; Brown, Stacy Verdeja, Cassie; Fruth, Kayla Papenguth, Ally; Evens, Malarie McAlpine, Brian; Kovac, Tom Berndtson, Daniel	"50 Lanterns"
T37	Ficker, Justin; Boesche, Josh Idziorek, Joseph	Vulcan
T38	Shakya, Rajish; Karmacharya, Bipin Opasnawakun, Komgrich	Internet Telephony
T39	Swanson, Gregory	Temporary Increases in Problem Behavior and Sleep Disruption
T40	Ohman, Chris	Isothiocyanates
T41	Wong, Kuan Shen	Bioinfomatic Analysis of *Toxoplasmid Gondii* cDNA Sequences
T42	SPED 416 516 Class	Development of Topological Thinking
T43	Sandbulte, Tony	Pattern of Under-Representation in Special Education Classes: Academic Engagement
T44	Forstner, Jay	An Interactive Geographic Information System: Pre-Park Exploration on the Upper Yellowstone River, 1869-1872
T45	Anderson, Stephanie	The Branching Instability of Dendrites
T46	Peterson, Tyler	Patterns of Under-Representation in Special Education Classes: Social Engagement
T48	Williams, Casey	Negative Emotions after Viewing Relational Aggression
T49	Pitcher, Austin	Cloning, Purification and Characterization of Human Aldehyde Dehydrogenase 7A1
T50	McGee, Meghan	Biological Effects of Endocrine Disrupting Chemicals on Fathead Minnow Reproductive Endpoints

Session U: Language		North Glacier
Moderator	Kristian Twombly, Assistant Professor of Music	
Time	Presenter(s)	Title
5:00 p.m.	Bos, Jeremy	Voice-to-Text Display
5:20 p.m.	Liao, Yuanyuan Wang, Tingting	Different Styles of Code-Switching between Chinese and English in Diverse Networks: An Introspection Study
5:40 p.m.	Wang, Tingting	ESL Students' Reactions to Written Comments in Composition Revision

Session V: Humanities		Lady Slipper
Moderator	Lisa Splittgerber, Associate Professor of Foreign Languages and Literature	
Time	Presenter(s)	Title
5:00 p.m.	Larson-Zepeda, Linda	La historia oficial: El lado triste de la Argentina
5:20 p.m.	Backes, Brandon	The Evolution of the Great Banana
5:40 p.m.	Egan, Patrick	German Soccer World Cup Success and the Societal Implications
6:00 p.m.	Sulander, Travis	Just another War Theory?
6:20 p.m.	Stephen, Horvat	Othering in Iraq

Session W: Natural Sciences		Oak
Moderator	Jeongmin Byun, Assistant Professor of Mechanical and Manufacturing Engineering	
Time	Presenter(s)	Title
5:00 p.m.	Kabata, Faith	Radical Scavenging Studies of Potential Anti-Diabetic Vanadium Flavonoid Complexes
5:20 p.m.	Roth, Andrew; Stromberg, Adam Bump, Jacob	DNA Incubation Project
5:40 p.m.	Gay, Bryant	Design and Synthesis of Photoaffinity Labeling Ligands of the PLG Binding Site Involved in the Modulation of the Dopamine Receptor
6:00 p.m.	Pickrell, Charles; Meyer, Andrew Leet, Jason; Nang, Quincy Mareini, Fatuma	Effects of Genetically Altered Plants on Honeybees

Session X: Science and Engineering III		Mississippi
Moderator	Mohammad Mahroof-Tahir, Associate Professor of Chemistry	
Time	Presenter(s)	Title
5:00 p.m.	Linhoff, Sam Larson, Troy	Quick Die Change
5:20 p.m.	Upreti, Rapan Lohani, Ummid	Digitally Controlled Wireless Relay Switch
5:40 p.m.	Sahr, Mark Borscheid, Gabriel	Unattended Ground Vehicle

Session Y: Communications		North Voyageurs
Moderator	Diana Rehling, Associate Professor of Communication Studies	
Time	Presenter(s)	Title
5:00 p.m.	Doucette, Neil; Nutter, Jacquelynn Schulte, Elizabeth	Nonverbal Communication Research Projects

NOTES

Abstracts

Session A | All Disciplines | Ballroom

Novel Chemotherapeutic Agents Based on the Natural Products Melophlin A and Methyllucidone

Cancer affects hundreds of thousands of people each year in the United States. In recent years, one method to identify potential chemotherapeutic agents has been the mass screening of natural products for cytotoxic activity. Two natural products, melophlin A and methyllucidone, were isolated in this manner. Melophlin A was isolated from a marine sponge and exhibited both cytotoxic and antiproliferative activity against leukemia cell lines. Methyllucidone, isolated from the fruits of Lindera erythrocarpa, was shown to strongly inhibit the growth of colon tumor cells. Both of these compounds work by inducing apoptosis, programmed cell death, in cancer cell lines. A unique feature of methyllucidone is that it has been shown to inhibit cancer via two pathways, apoptosis and farnesyl protein transferase inhibition. This project entails combining the structural features of both melophlin A and methyllucidone into a series of novel analogues. These compounds will incorporate the 2,4-pyrrolidinone core of melophlin A with the styryl side chain of methyllucidone. Like methyllucidone, it is anticipated that these synthetic analogues will inhibit cancer by inducing apoptosis and competitively inhibiting farnesyl protein transferase.

Presentation Index: A1 | Time: 9:00 a.m.
Department: Chemistry | Project Sponsor(s): Mechelke, Mark
Student Presenter(s): Winkleman, Sarah

Nutrition, Exercise and Depression Prevention

Stearns County Public Health had little information on the topics of nutrition, exercise, and depression prevention for seniors. The county needed to find out what types of services were available, who provided them, and how often were they provided. The significance of this data would result in an increase in the access and availability of health promotion services through the creation of new programs and/or grants to existing services. Facilities that served seniors in Stearns County were gathered through Senior Linkage. Twenty eight facilities were contacted and given a 10 question survey on the availability, frequency, and provision of services. Findings revealed that 72% of the facilities offered services to seniors age 55-85+. The majority of the facilities, 36%, provided nutrition services daily. The majority, 39%, offered depression prevention services less than once a month, and most facilities, 39%, provided exercise services only weekly. Results revealed that the promotion of exercise and depression prevention was lacking in Stearns County for seniors. Goals and interventions were created to help improve the availability of exercise and depression prevention services. Social, political, and environmental implications of the interventions, based off of the findings, included an increased frequency and availability of services to seniors, increased funding for programs and resources, and an enhancement in the quality of health and well being of seniors. Health promotion related to nutrition, exercise and depression prevention were not consistently being offered to seniors in Stearns County. The areas of exercise and depression prevention were especially lacking in frequency of services. Suggestions to improve availability of these services would be to increase awareness.

Presentation Index: A2 | Time: 9:00 a.m.
Department: Nursing Science | Project Sponsor(s): Lenz, Brenda
Student Presenter(s): Cruser, Amy; Erickson, Debra; Kariniemi, Jodi; Steinbach, Ryan

Somali Emergency Preparedness

This poster summarizes a research study done in collaboration with Kandiyohi county public health. Somali people in Willmar were surveyed regarding emergency preparedness. Because of language and cultural barriers, public health saw a need for improved communication methods with this population. After completing a pilot study, a focus group participated in a questionare. Data analysis included ability to read, speak, and understand Somali and English, as well as where Somalians get their information. Social, politcal and environmental implications were found, including language and concept barriers, lack of standardized procedures, and environmental segregation. Intrepretation of findings led to two nursing objectives developed in conjunction with additional research findings. It was concluded that there is a need for more research with communication and the Somali population, Access and language barriers were a problem. Television, local hospital and clinics, and radio were cited as the best means of communication with the Somali people in the event of an emergency.

Presentation Index: A3 | Time: 9:00 a.m.
Department: Nursing Science | Project Sponsor(s)
Student Presenter(s): Akumah, Magdalene; Tomczik, Kelly; Tack, Martha; Hommerding, Jessica; Jordan, Paul | Lenz, Brenda; Johnson Warner, Susan

Wright County Fall Assessment Survey

Nationally, falls affect about one third of community dwelling seniors making it the 14th leading cause of death in this population Fuller, 2006; Associated Press, 2006). In Wright County, there are 8,480 residents 65 years of age and older. At the local level, there is not enough information to accurately assess this specific age group's needs, risks, and educational deficiencies related to the experiences and outcomes of falls. With this lack in mind, the National Institute of Nursing Research, the Minnesota Department of Health, and the Henry Street Consortium are encouraging county public health agencies to gather data related to this phenomenon. Information concerning recent falls (location, etiology, impact on social participation and physical ability) was collected via a descriptive survey of people 65 years of age or older at Senior Healthy Clinics, Churches, Senior Dining Centers, and Independent Living Facilities. The sample was divided into five age range groups. Of the total respondents, 37.2% experienced falls with the average number per person measured at 0.61. The 65-70 year old age group had the highest average number of falls per person (1.2). According to this data, the majority of falls are experienced in the home. Additionally, falls have not significantly impacted the ability of this population to participate in activities of daily living and minimally impact the social interaction of this population. A larger sample size is needed to obtain a statistically significant perspective of the actual population issues; however, the data obtained shows surprising trends in the younger age range of the elderly population suggestion that more educational effort needs to be focused on the youngest age group, 65-70 year olds, as well as the 71-75 year olds.

Presentation Index: A4
Time: 9:00 a.m.
Department: Nursing Science
Project Sponsor(s):
Lenz, Brenda;
Schorn-Rhoda, Mary Ann
Student Presenter(s):
Sullivan, Angela; Savchuk, Alla; Reed, Liz; Nord, Kristin
Anderson, Rachel; Greninger, Chelsea; McAdams, Sheila; Lymer, LaRae

Meeker County Fluoride Dental Varnishing

A problem in Meeker County is many children do not receive adequate dental care, and do not have the resources to access treatments. Children who experience early dental caries have a higher susceptibility of developing further caries. The treatment for these caries is extremely expensive when compared to preventative measures. Administering a dental fluoride varnish treatment can prevent early childhood caries. In order to determine healthcare professionals' knowledge of dental varnishing and their willingness to collaborate with Meeker County Public Health in a fluoride varnish treatment program we surveyed all dentist, doctors, dental hygienists, and physician assistants within Meeker County. Data analysis included finding the mean, mode, range, and frequency for each ordinal question. Demographic data was collected to determine each individual's health care profession. Findings from the questions revealed a wide range of familiarity with dental fluoride varnishing, with the majority willing to receive more information on the program. The majority acknowledged a concern regarding tooth decay in adolescents and children in Meeker County. Professionals regularly see clients who could benefit from the program in their practice. While most are willing to collaborate with Meeker County in implementing this program, few had no opinion or were not willing to accept clients on medical assistance or MNCare. The healthcare professionals' willingness to collaborate will have the greatest impact on the development of a dental fluoride varnish program. The response of dentists in particular demonstrates barriers faced in aiding children. Implementing a dental fluoride varnish program would benefit many children and adolescents in the Meeker County area. The healthcare professionals' surveyed responses showed that they would be interested in helping Meeker County Public Health to develop a dental fluoride varnishing program.

Presentation Index: A5
Time: 9:00 a.m.
Department: Nursing Science
Project Sponsor(s)
Student Presenter(s):
Lenz, Brenda
Frohlich, Chelsea; Nilsson, Kaara; Gavin, Greg; Maas, Casey

Sensitivity of Human Breast Adenocarcinoma Cells to Ottelione A and Its Structural Analogs and Possible Molecular Basis for Resistance to Ottelione A

Ottelione A is a natural product with strong antitumor activity (LC50 values 0.025-0.060 μM) against a panel of breast tumor cell lines. Antitumor activity of Ottelione A is believed to be due to the inhibition of microtubule assembly during mitosis. Our studies indicate that any structural modifications to Ottelione A will result in significant loss of antitumor activity (LC50 values 0.075-30 μM). Ottenlione A resistant human breast adenocarcinoma MCF-7 cell line (MCF 7/OttA) generated in our laboratory is also resistant to Ottelione A structural analogues above. Molecular analysis of MCF-7/OttA cells suggests over-expression of ABCG2 (a member of multi-drug resistance family protein) that may partially account for resistance to Ottelione A. Human cancer and drug metabolism gene microarray analysis of parent (MCF-7/0) and Ottelione A resistant (MCF7/OttA) cell lines suggest significant differences in gene expression. Further studies related to mechanisms cellular sensitivity to Ottelione A are on-going.

Presentation Index: A6
Time: 9:00 a.m.
Department: Chemistry
Project Sponsor(s)
Student Presenter(s):
Scully, Shanna; Ghose, Shourjo
Marine Sasha
Sreerama, Lakshmaiah; Hoye Thomas; Islam, Kabirul; Mehta, Goverdhan

Distracted Driving Behaviors Among High School Juniors in Mille Lacs County

In Minnesota, teen drivers are over represented in fatal and serious injury traffic crashes. The Mille Lacs County Public Health Safe Communities Coalition has set goals to reduce impaired driving and increase seat belt use throughout Mille Lacs County. A written survey of 13 questions focusing on seatbelt use and distracted driving behaviors was distributed on 11/8/2006 to high school juniors with a current driver's license in Princeton, Onamia, Isle, and Milaca school districts. Schools were contacted through the SADD organization about date of survey distribution. Surveys were collected on 11/15/2006 with a total of 246 11th grade students participating. Analysis results of the survey conducted at the selected school districts in Mille Lacs County concluded that 86.5% of Mille Lacs County juniors had a current driver's license. Positive findings include a high frequency of seatbelt use, high rate of cell phone use, high percentage of changing the radio station, and high percentage of eating/drinking while driving. Negative findings include a low incidence of reading/studying, low incidence of text-messaging and low rate of grooming while driving. Through analyzing the results of this survey, we have concluded that the level of distracted driving behaviors among teens in Mille Lacs County were lower than expected yet concerns regarding these behaviors still remain. There is a need to increase community awareness of distracted driving behaviors and continue with education done by SADD and safe community programs that will result in safer roads.

Presentation Index: A7
Time: 9:00 a.m.
Department: Nursing Science
Project Sponsor(s)
Student Presenter(s):
Solinger, Jodie; Weber, Nina
Lenz, Brenda

Child Home Safety

There are many home safety risks for children ages 0-5 years that are preventable with the proper intervention. During our NURS 405 clinical course at the Mille Lacs Band of Ojibwe Tribal Health Service we developed a home safety hazard survey as part of a community health needs assessment. We created a 12-item survey consisting of home safety concerns and demographic questions. The survey was distributed to 28 parents and/or caregivers of children aged 0-5 at the Mille Lacs Band of Ojibwe community family night. Unlocked chemicals, unlocked firearms, water temperature >120◦ with potential for burns were identified as the most significant safety concerns. These findings indicated that there was an inherent need for education regarding safety and health practices in the home. Recommendations from these findings include modifying the home safety kits to address the specific safety hazards identified. Instruction and demonstration of the safety kits is needed to ensure effectiveness and proper use. In addition, public health nurses should provide education classes for families, which focus on the identified safety needs, including ways in which to improve safety in the home. Mandatory reporting of unsafe practices, lobbying for safety policies, and appropriate housing guidelines are additional measures that can be taken to increase safety in the home. Based on the findings, public health nurses, need to increase awareness and change safety related behaviors. Education classes geared toward caregivers of children aged 0-5, along with updating the safety kits is necessary to decrease the incidence of injuries.

Presentation Index: A8
Time: 9:00 a.m.
Department: Nursing Science
Project Sponsor(s):
Student Presenter(s):
Lenz, Brenda; Schorn-Rhoda, Mary Ann
Bethke, Kelly; Mack, Larisa; Gallus, Nicole; Lundquist, Britta

Teenage Sexual Education

Teen pregnancy and sexually transmitted disease (STD) rates continue to be a concern in Stearns County, Minnesota. The purpose of this research was to identify what is being taught in Middle and High Schools regarding sexual education. An 18-question survey was sent to school nurses and/or teachers of sexual education. Reminder phone calls and e-mails were sent prior to final survey collection. Results indicate the majority of Stearns County Sexual Education includes: abstinence, handouts, research-based methods, curriculum-based information, time allowed for questions and concerns, and information on support services for teen pregnancy. A conclusion drawn was that comprehensive sexual education should be part of standard curriculum for all students grades 5-12th in order to reduce teen pregnancy and adolescent STD rates. Appropriate funding from government resources is necessary to initiate and implement these teachings. Support from community members, students, teachers, and parents is essential to expanding the current sexual education curriculum to meet this goal.

Presentation Index: A9
Time: 9:00 a.m.
Department: Nursing Science
Project Sponsor(s)
Student Presenter(s): Heilig, Sarah; Karnik, Laura; Moen, Dana; Unanaowo, Arit
Lenz, Brenda; Eickhoff, Carol

Determination of the Volatile Components of Various Chardonnays

The purpose of this study was to determine the volatile components of various chardonnays so that their influence on the wine's overall sensory appeal could be considered. In order determine the nature of the compounds that contribute to the characteristic aroma and flavor of these wines, organic extracts were obtained using a liquid-liquid extraction technique and analyzed using gas chromatography and mass spectrophotometry. Four different chardonnays have been analyzed using these methods: 2003 Paul Masson and 2002 Livingston (both inexpensive Californian chardonnays), 2003 Newton (a relatively expensive Californian chardonnay) and 2003 Red Bicyclette (an inexpensive French wine). These sample chardonnays were chosen because of the suspected difference between wines fermented from grapes grown in different regions with different soil conditions (California vs. France) and between wines of different price. Results have confirmed that these various wines do in fact have some unique volatile components and some common components but different concentrations. Further analysis will hopefully allow for a better understanding of how these components contribute to the wine's overall sensory appeal and ultimately its price.

Presentation Index: A10
Time: 9:00 a.m.
Department: Chemistry
Project Sponsor(s)
Student Presenter(s): Malchow, David
McKenna, Jack

Session A	All Disciplines	Ballroom

The Effect of Divorce on Sibling Attachment

This study will measure the effect a parent's divorce has on sibling's attachment and closeness. Siblings will most likely become closer to one another if their parents have gone through a marital change (see Sheehan, Darlington, Noller, and Feeney, 2004). Attachment to siblings will be compared across parental marital status.

Presentation Index: A11
Time: 9:00 a.m.
Department: Psychology
Project Sponsor(s)
Student Presenter(s): Fay, Andrea
DeVoe, Marlene

Insulin Mimetic Properties of Vanadium-Flavonoid Complexes

Diabetes mellitus is one of the leading causes of illness and death. Pancreatic beta cells produce insulin which helps regulate blood glucose levels. Insulin is required to activate insulin receptor substrate which in turn is responsible for activation of phosphotidyl inositol 3-kinase (PI3K). Vanadium has insulin enhancing activity and has long been used as a food supplement in diabetic patients. Similarly, falvanoids have also been shown to have antidiabetic properties. Individually, vanadium and flavonoids are known to exhibit the antidiabetic properties via the activation of PI3K. Whether vanadium-flavonoid complexes have additive or synergistic antidiabetic properties is being investigated. In this regard we have synthesized vanadium complexes with 3-hydroxy and 5-hydroxy flavone and characterized them. Induction/activation of PI3K by the above complexes is now being determined by RT-PCR, immunological, and fluorescence polarization techniques.

Presentation Index: A12
Time: 9:00 a.m.
Department: Chemistry
Project Sponsor(s):
Student Presenter(s): Legatt, Graig
Sreerama, Lakshmaiah

The Effect of Exercise on Mood and Depression

Extensive empirical evidence confirms that exercise and good physical health improve psychological well-being. The present study tests the hypothesis that participants who exercise more than three times a week will have a low level of depression. A 2 x 2 design was administered to 20 psychology undergraduate students. Each participant answered a brief survey, which included questions regarding their exercise frequency and intensity, gender, Beck Depression Inventory, and the Profile of Mood States. The effect of physical activity on psychological well-being is conditional on the participant's exercise frequency and intensity, whereas depression is greatest among those who exercise less than three times a week. These findings confirm that exercise plays a role in an individual's level of depression and mood state.

Presentation Index: A13
Time: 9:00 a.m.
Department: Psychology
Project Sponsor(s)
Student Presenter(s): Finseth, Amber
DeVoe, Marlene

Geothermal Energy Localized

With a glaring need for clean, renewable energy in Minnesota's future, people of the Midwest often do not consider geothermal energy. However, most residents of the Midwest do not realize geothermal energy can be of much use to them. With the ever-improving technology surrounding the geothermal heat pump, residents of the Midwest can take advantage of the earth's heat while using a clean energy source. To gather data regarding citizens of the Midwest and geothermal energy, a survey was submitted to a Geologic Environment class here at St. Cloud State in fall 2006. The survey questions focused on knowledge of geothermal energy and student's perception of renewable energy. The results showed that most students had very little knowledge of geothermal energy, but felt the need for a clean, renewable energy source. These results showed that with a little publicity, the geothermal heat pump will be considered in the Midwest's future.

Presentation Index: A14
Time: 9:00 a.m.
Department: Biological Sciences
Project Sponsor(s)
Student Presenter(s): Krippner, Mark
Simpson, Patricia

Photochemistry of 2-Biphenylisocyanate

Organic isocyanates are a very common functional group used throughout the world in a wide range of applications. The largest industrial use of isocyanates arises from the production of polyurethanes. These polyurethanes include many types of insulating foam, solvents, coatings, and sealants. Despite the large use of isocyanates in industry, the study of this functional group is nearly exclusive to their thermal chemical properties. This work is meant to address this and focus on the photochemical development of 2-biphenylisocyanate. Previous researchers identified two major products when 2-biphenylisocyanate was treated with high energy 254 nm wavelength light for 180 minutes; these products were carbazole (50%) and 6(5H)-phenanthridinone (33%). The mechanism by which phenanthridinone is formed was the ultimate goal of this project; there are two possible mechanisms, hydrogen abstraction or electrocyclization. Repetition of the previous research was done as a starting point to verify qualitatively the presence of the two products and starting material using a combination of gas chromatography-mass spectroscopy, silica gel column chromatography and thin-layer chromatography. After qualitative identification was completed, the photochemical efficiency (quantum yield) for observed reaction was determined. The calculation of the quantum yield was done using the actinometer azoxybenzene, which has a known quantum yield of 0.017 at 254 nm will be discussed. Future research includes alterations to the starting biphenylisocyanate and determine its effects on quantum yield to resolve the mechanism for the formation of 6(5H)-phenanthridinone.

Presentation Index: A15
Department: Chemistry
Student Presenter(s):
Schwenzfeier, Jon

Time: 9:00 a.m.
Project Sponsor(s)
Gregory, Daniel

Expression, Purification and Characterization of Two Human Aldehyde Dehydrogenases (ALDH3A1 & ALDH9A1)

Cyclophosphamide and ifosfamide are commonly used to treat various cancers. Resistance to these agents is due to overexpression of certain aldehyde dehydrogenases (ALDH), e.g., ALDH1A1 and 3A1. We have recently identified two isoforms of ALDH3A1, viz., ALDH3A1*1 and ALDH3A1*2, that differ by two amino acids. One of these isoforms is now been cloned and expressed, and protein is being isolated to determine its ability to metabolize cyclophosphamide. Further, about 10-15% of the patients receiving ifosfamide-based therapy experience nephrotoxicity due to the lack of chloroacetaldehyde (CAA) oxidation, a by-product of ifosfamide metabolism. The predominant isozymes are ALDH1A1, ALDH2, ALDH3A1 and ALDH9A1. We have shown that ALDH2 and ALDH1A1, but not ALDH3A1, significantly contribute to the oxidation of CAA. We have recently cloned, expressed, purified and studied the role ALDH9A1 in oxidation of CAA. ALDH9A1 oxidizes CAA however its relative contribution to this process is significantly lower than ALDH2.

Presentation Index: A16
Department: Chemistry
Student Presenter(s):
Grant, Rainer

Time: 9:00 a.m.
Project Sponsor(s)
Sreerama, Lakshmaiah

Personalization and Territorial Behavior Within a Residential Room

Residential group living environments can have a large impact on college students' life experience. The present research was conducted in a campus dormitory at St. Cloud State University. This issue was academically questioned by the researcher as a positive correlation between the number of objects contributing to the personalization of a dorm room, and the strength of the territorial attitude by the occupants. The question was assessed through quantitative observations of the residents personalized objects on display. Residents also rated the personalization of their room, through a survey, and responded to a hypothetical scenario where an unwanted invasion occurred. This hypothetical invasion rated the resident's territorial attitude. The number of personalized objects has an affirmative impact on how violated a resident would feel if their territory was invaded.

Presentation Index: A17
Department: Psychology
Student Presenter(s):
Gregor, Kendra

Time: 9:00 a.m.
Project Sponsor(s)
Jazwinski, Christine

Should the Minnesota Gray Wolf be Removed From the U.S. Fish and Wildlife Service's List of Endangered and Threatened Animals?

You find yourself alone in northern Minnesota; suddenly a howl pierces the quiet night. The question comes to mind then; what do people know about wolves and with their current level of knowledge, do they support or oppose the removal of the Minnesota's population of Grey Wolves from the U.S. Fish and Wildlife Service's list of Endangered and Threatened Animals? It is with this intent that I issued a survey to BIOL 101 students in the fall semester 2006. The findings were that although many students do not believe in removing the wolves, very few students have knowledge regarding wolves and their current population in Minnesota.

Presentation Index: A18
Time: 9:00 a.m.
Department: Biological Sciences
Project Sponsor(s)
Student Presenter(s):
Simpson, Patricia
Melykson, Mitchell

Af Soomaali ma ku hadli kartaa? Do You Speak Somali? A Study on Somali Language and Oral Tradition Preservation in St. Cloud, Minnesota

Since the 1990's, millions of Somalis have become refugees because of civil war in their native Somalia. Forced to flee their country and relocate, Somalis have made Minnesota their home away from home and the state with the largest population of Somalis in the United States. Somalis in Minnesota have lost their families, friends, land, and are at risk of loosing their language and oral tradition. Globally, indigenous languages are disappearing, and each new generation of immigrants/refugees uses their native language less than the previous generation. A presenter at the Somali Language and Literacy Conference captured this sentiment as he explained being worried about the Somali oral tradition disappearing in the United States, and with it the Somali language, culture, and history. To work as an anti-racist and community action researcher, it is imperative to work with the community to see what, if any, preservation efforts are desired. I am researching their opinions of preservation so that action can be taken by Somalis with the support of the larger community. I believe that first-hand sources are important when doing research with a group of which I don't belong. However, there aren't many resources available that are considered academic that are written by Somali authors, so I have verified resources with Somalis and included writings by Somalis that are not considered academic. My research, using surveys, informal interviews, and participant observation, will answer my research question: How is Somali language and oral tradition being preserved in St. Cloud, Minnesota?

Presentation Index: A19
Time: 9:00 a.m.
Department: Human Relations and Multicultural Education
Project Sponsor(s)
Student Presenter(s): Drake, Sarah
Huber-Warring, Tonya

Experimental Verification of a Kinetic Model for Headspace Liquid-Phase Microextraction

The purpose of this research is to experimentally verify a kinetic model for headspace liquid-phase microextraction. Headspace liquid-phase microextraction refers to a technique involving the preconcentration of volatile organic compounds (VOCs) from a solution into a microdrop that is suspended from a needle within the headspace of the sample vial. Chemicals chosen for analysis are toluene for the volatile compound and 1-octanol for the microdrop. The toluene is initially present at low concentration in an aqueous solution from which it vaporizes and eventually preconcentrates into the organic microdrop. The microdrop and a sample of the aqueous phase are each analyzed via gas chromatography – mass spectrometry (GCMS) for the relative concentrations of toluene in each phase. Each trial involves stirring and sampling after varied lengths of time in order to create curves for the concentration of toluene over time in both the aqueous solution and the microdrop. The difference between the initial moles of toluene and what remains in these two phases is the toluene in the headspace. Concentration (C) versus time (t) kinetics for liquid-phase microextraction (two phase system) have already been shown to follow an equation of the form $C=Ceq(1-exp(-kt))$. For the headspace liquid-phase microextraction (three phase system) this same model is expected to hold (using a more complicated rate constant, k) as long as the toluene concentration in the headspace can be shown to stay low and steady (i.e. steady-state approximation).

Presentation Index: A20
Time: 9:00 a.m.
Department: Chemistry
Project Sponsor(s)
Student Presenter(s): Schnobrich, Charlene
Jeannot, Michael

The Effects of CART on Chronic Stroke Survivors

The Copy and Recall Treatment (CART) method (Beeson, 1999; Beeson et. al. 2003) has shown to improve written expression in individuals who have aphasia, a language disorder resulting from a stroke. Combined CART and verbal output treatments yield better results than individual techniques alone (Beeson et al., 2006). The purpose of this study was to treat two stroke survivors with chronic aphasia using the CART method and to further supplement the efficacy data for CART in stroke survivors with chronic aphasia. Both subjects showed considerable improvement in their written recall of trained words after CART was introduced. Interestingly, one subject demonstrated improvements in verbal output and generalization of skills to untrained written words, which has not been previously reported. The results of this study are consistent with those previously found and further contribute to the efficacy for CART.

Presentation Index: A21
Department: Communication Sciences and Disorders
Student Presenter(s): Johnson, Kari; Bistodeau, Jessica

Time: 9:00 a.m.
Project Sponsor(s)
Rangamani, Grama

Information Retrieval on Peer-to-Peer Databases

Peer-to-peer (P2P) applications gained a lot of popularity due to file sharing applications such as Napster, Gnutella, Kazaa, eDonkey, and others. Their architecture and their scale lead to challenging performance and anonymity, security and administration transparency issues. Overlay networks are evolving into a critical component for self-organizing systems and it is essential for p2p overlay network to be aware of the network topologies such as CAN, Chord, Pastry and Tapestry which provide a self organizing substrate for large-scale p2p applications. The information stored in the above peer-to-peer networks can be efficiently located and retrieved by the deployment of XML as the underlying data model for p2p systems which impose new challenges to support advanced querying and consistency problems. We first present a survey on related research with a focus on information retrieval. Specific issues will be addressed from the structured as well as the unstructured p2p systems perspective. In the context of XML p2p databases we address the problem of limited expressiveness of the available query languages and the problem of data heterogeneity. The combination of XML and P2P represents a powerful paradigm: the XML language can successfully be used for information exchange among communicating systems, and the P2P infrastructure can serve as a distributed index for corresponding query routing. We identify classes of queries that are supported by current XML p2p database systems, and propose a modified query algebra that would allow more expressive queries to be performed on such systems.

Presentation Index: A22
Department: Computer Science
Student Presenter(s):
Kukkala, Swetha; Kondari, Vamsi; Khambhampati, Sri Aparna

Time: 9:00 a.m.
Project Sponsor(s)
Bejan, Alina

The Design and Synthesis of Novel RAS Farnesyl Protein Transferase Inhibitors

Ras proteins play an important role in the signal transduction pathways that regulate cell proliferation. In order to perform their function, Ras proteins must first become post-translationally modified. The key step in this process is the addition of a fifteen carbon farnesyl tail to the Ras protein, catalyzed by the enzyme farnesyl protein transferase. The Ras farnesylation process has been a target for the hindrance of cancer, since mutated Ras proteins are associated with approximately 25% of human malignancies. Mutant Ras proteins that cannot be farnesylated do not stimulate malignant growth. This research focuses on the synthesis of competitive farnesyl protein transferase inhibitors. The compounds being prepared incorporate two aromatic rings in the farnesyl tail. It is anticipated that these farnesyl pyrophosphate mimetics will bind tighter to the enzyme active site, therefore blocking Ras farnesylation.

Presentation Index: A23
Department: Chemistry
Student Presenter(s):
Walters, Kerrie

Time: 9:00 a.m.
Project Sponsor(s)
Mechelke, Mark

The Design and Synthesis of Novel Goniothalamin Analogues

Every two minutes a woman in the United States is diagnosed with breast cancer. In recent years, one method to identify potential chemotherapeutic agents has been the mass screening of natural products for cytotoxicity. One compound discovered in this manner was goniothalamin. Goniothalamin was isolated from the dried stem bark of the plant goniothalamus sesuipedalis and exhibits cell specific anticancer activity against breast cancer cell lines. Goniothalamin has been extensively studied, and a large number of synthetic analogues have been prepared in an attempt to determine the structural features necessary for bioactivity. These structure/activity relationship studies have focused primarily on the manipulation of goniothalamin's styryl substituent. The focus of this research is on the lactone core of goniothalamin. Analogues have been prepared that replace the lactone ring with a lactam. It is anticipated that alteration of the lactam nitrogen substituent will potentially lead to analogues that have better bioavailability and reactivity than the natural product.

Presentation Index: A24
Time: 9:00 a.m.
Department: Chemistry
Project Sponsor(s)
Student Presenter(s):
Mechelke, Mark
Dillman, Allissa

Changes in the Job of the Speech-Language Pathologist: A Multi-Year Perspective

Many professions experience changes over time in job duties, how the job is performed, and clientele served. Little data exists for the profession of speech-language pathology. Speech-language pathologists (SLPs) work in the rapidly growing education/healthcare supersector of the U.S. economy, and with the many changes occurring in this dynamic economic sector, it stands to reason that professions within this sector are also changing. Thus, the purpose of this study was to determine the changes that have occurred in the field of speech-language pathology over time. Ten years ago, graduate students in Communication Sciences and Disorders interviewed 64 SLPs in order to determine what changes had occurred over the years of their work experience and to predict future changes in the profession. In the current follow-up study, 36 of the original SLPs participated. SLPs were again asked what had changed in the field and their professional duties since the last study. They also were asked what changes they thought would occur over the next ten years. This gave us past, present and future perspectives of the field of speech-language pathology. The results suggested that speech-language pathology is a changing profession. Ten years ago the SLPs correctly predicted that caseload sizes would increase and that there would be a broadening of professional responsibilities. Changes that had not been predicted included more use of computers and technology, an increase in complex cases with multiple disorders, and an increase in autism spectrum disorders. The SLPs in the current study predicted that in the future they will become more specialized, increase their use of technology, and serve increasingly larger caseloads. They also predicted a shortage of SLPs, which may lead to providing more consultative services and an increase in the use of paraprofessionals.

Presentation Index: A25
Time: 9:00 a.m.
Department: Communication Sciences and Disorders
Project Sponsor(s)
Student Presenter(s):
Whites, Margery
Kuehn, Monica; Kalar, Anne; Anderson, Carey; Murdy, Sue; Hinsz, Ashleigh; Krippner, Darcy

What Do Speech-Language Pathologists Do? A 10-Year Follow-Up Study

The purpose of this study was to follow up on a group of speech-language pathologists who had participated in a similar study ten years ago. We wanted to see how their job duties and the knowledge, skills and abilities needed to perform their jobs had changed over the ten year time period. In the original study, 64 speech-language pathologists were asked about their jobs. Thirty-six of the original participants, or 56%, also participated in the follow-up study. Speech-language pathologists from both educational and medical settings were interviewed and surveyed, Findings indicated that in both the original study and the current follow-up study, diagnosis and treatment were the primary duties of practicing speech-language pathologists in both educational and medical settings. Other findings indicated that speech-language pathologists in both types of practices have had to learn about several new areas in the past ten years in order to do their jobs effectively. These areas include autism spectrum disorders, augmentative-alternative communication, swallowing, and documentation requirements.

Presentation Index: A26 Time: 9:00 a.m.
Department: Communication Sciences and Disorders Project Sponsor(s)
Student Presenter(s): Whites, Margery
Razim-Fitzsimons, Mary Ann; Saxton, Kelsey; Stainbrook, Lisa; Hohnberger, Kristin; Franckowiak, Helen

Tornado Warning Systems

Following the tornado that went through Rogers, Minnesota in 2006, many people wondered whether the tornado warning system is sufficient. After researching the system that is currently in place, and finding out what students in EAS 104 (fall 2006 class) thought about the warning system I found that the problem is not with the warning system but rather with a lack of knowledge about the system. The students in this class held common misconceptions that I believe much of the general public believe (although that was not formally tested). So solutions as to how to educate the population as well as the student body are also included at the end along with the conclusions as to what the students knew, believed, and thought about the tornado warning system that is currently in place.

Presentation Index: A27 Time: 9:00 a.m.
Department: Biological Sciences Project Sponsor(s)
Student Presenter(s): Simpson, Patricia
McGowan, Emily

Structure-Based Discovery of Drugs to Treat Type II Diabetes

The purpose of this project is to investigate inhibitory effects of common analgesics vs. the adipocyte fatty-acid binding protein (aP2). AP2 is an abundant protein in fat cells, and one member of a family of proteins involved in the regulation and trafficking of fatty acids (FABPs). Interest in the metabolic role of aP2 was sparked by the 1996 Science paper by Hotamisligil et al, where they reported that aP2-deficient mice placed on a high fat diet for several weeks developed dietary obesity, but not insulin resistance or diabetes. Hotamisligil et al. concluded that "aP2 is central to the pathway that links obesity to insulin resistance". The potential for aP2 as a target in the treatment of Type 2 diabetes prompted an intense research effort within Bristol-Myers Squibb to discover potent, selective aP2 inhibitors. As part of this effort, nearly 100 x-ray crystal structures of aP2 with bound inhibitors were determined (manuscripts in preparation). During the course of this work, it was discovered that many diverse compounds of the general structure "grease plus negative charge" could bind to aP2. Common analgesics fit this description and are potential inhibitors of aP2. The project we are undertaking will look at the binding of commercially available profens to adipocyte (aP2), muscle fatty-acid binding proteins.

Presentation Index: A28 Time: 9:00 a.m.
Department: Biological Sciences Project Sponsor(s)
Student Presenter(s): Jacobson, Bruce
Froehlich, Chris; Janisch, Robert; Lieser, Elizabeth

Structure-Based Discovery of Drugs to Treat Type II Diabetes

The purpose of this project is to investigate inhibitory effects of common analgesics vs. the adipocyte fatty-acid binding protein (aP2). AP2 is an abundant protein in fat cells, and one member of a family of proteins involved in the regulation and trafficking of fatty acids (FABPs). Interest in the metabolic role of aP2 was sparked by the 1996 Science paper by Hotamisligil et al, where they reported that aP2-deficient mice placed on a high fat diet for several weeks developed dietary obesity, but not insulin resistance or diabetes. Hotamisligil et al concluded that "aP2 is central to the pathway that links obesity to insulin resistance". The potential for aP2 as a target in the treatment of Type 2 diabetes prompted an intense research effort within Bristol-Myers Squibb to discover potent, selective aP2 inhibitors. As part of this effort, nearly 100 x-ray crystal structures of aP2 with bound inhibitors were determined (manuscripts in preparation). During the course of this work, it was discovered that many diverse compounds of the general structure "grease plus negative charge" could bind to aP2. Common analgesics fit this description and are potential inhibitors of aP2. The project we are undertaking will look at the binding of commercially available profens to adipocyte (aP2), muscle fatty-acid binding proteins.

Presentation Index: A28
Time: 9:00 a.m.
Department: Biological Sciences
Project Sponsor(s)
Student Presenter(s):
Jacobson, Bruce
Pamplona, August; Triemstra, Jennifer

Cultural Beliefs of Race, Gender, and Emotional Experience and Expression

Plant and colleagues (2000) found a cultural stereotype for gender and facial expressions such that men are believed to experience and express certain emotions (i.e., anger and pride) more than women, while women are thought to experience and express certain emotions (i.e., sadness and fear) more than men. Previous research has noted that hostility is a perceived stereotype of Blacks (Devine & Elliot, 1995) and that White participants are more quick to see the onset of anger in Black than White faces (Hugenberg & Bodenhausen, 2003). Despite the previous studies, the cultural beliefs surrounding the experiences and expressions of other emotions (i.e., fear, embarrassment, sadness, etc.) have yet to be systematically studied. The purpose of the present study is to examine the cultural beliefs of race, gender, and the experiences and expressions of emotion. Approximately 50 White participants were asked how often 17 emotions (anger, jealousy, sympathy, embarrassment, fear, happiness, sadness, surprise, shame, guilt, disgust, love, pride, interest, contempt, awe, and amusement) are experienced and expressed by Black men and women and White men and women on a scale of 1 (never) to 7 (often). A series of 2 (Target Race: Black vs. White) X 2 (Target Gender: females vs. males) X 2 (Ratings: experience vs. expression) within-subjects analyses of variance (ANOVA) will be conducted on the ratings for each of the 17 emotions. Given that cultural stereotypes of gender and emotion have been found to influence the perceptions of emotion in both ambiguous (Plant et al., 2000; Plant et al., 2004) and unambiguous (Algoe et al., 2000) facial expressions, we suggest that if cultural stereotypes of race and emotion do exist that these too will influence the interpretation of facial expressions of those different races.

Presentation Index: A29
Time: 9:00 a.m.
Department: Psychology
Project Sponsor(s)
Student Presenter(s):
Buswell, Brenda
Staples, Ashley; Christianson, Aaron

Survey of Waterfront Landowners

One quarter of all homes in the United States are served by septic systems, yet 10% of these systems are failing so severely that septic effluent emerges onto the ground surface or into homes (EPA, 2003). Septic systems existing on land that is directly adjacent to a body of water can have a notable impact on water quality (VDCR, 2006 & EPA, 2005). The knowledge and attitudes of riparian (waterfront) property owners should therefore be of interest to those who seek to maintain or improve the water quality of lakes, rivers, and oceans. An online survey was created to gather data about waterfront properties, the presence and age of septic systems on those properties, and to assess the manner in which general environmental regulations are perceived by their owners. Notice of this survey was distributed by means of electronic mail to lake associations and watershed groups. The data gathered will be used to explore any relationship that may exist between the motivations and attitudes of riparian property owners, and circumstances that could adversely affect the health of humans or surface water bodies. Results of the survey will be analyzed for significance between questions concerning existing conditions of water quality, age and maintenance of septic systems, age/race/gender, and general perception of environmental regulations. Results will then be dispersed back to lake associations and watershed groups to help facilitate more effective targeting of their resources.

Presentation Index: A30
Department: Environmental and Technological Studies
Student Presenter(s): Anderson, Todd

Time: 9:00 a.m.
Project Sponsor(s)
Bender, Mitch

Twelve-Year Survey Trend Data Regarding Graduates of the Rehabilitation Counseling Program

Over the past decade the field of rehabilitation counseling has been evolving. It has become a more multi-faceted field with a diversity of opportunities for graduates from Rehabilitation Programs. Because the field is ever changing it is important to verify that our Rehabilitation Programs are providing educational experiences, which prepare students to be successful in the field. A survey was developed to access the current status of past students, how they felt the program prepared them for work, and to determine what occupational trends one can expect to see in the future. The survey was sent to individuals who have graduated from the Master of Science Program in Rehabilitation Counseling at St. Cloud State University, from May of 1994 to May of 2005 (n=61). The results of the study concluded that there are many positive aspects of the Rehabilitation Program, and that many of the students are doing well in their careers; however it was also determined that there are some changes that need to be made. The study identified areas of improvement including: instruction in administrative services and skills, consultation, multicultural services, and population expansion to meet the need of a fast growing field.

Presentation Index: A31
Department: Counselor Education and Educational Psychology
Student Presenter(s): Adamson, Natasha

Time: 9:00 a.m.
Project Sponsor(s)
Kuhlman, Brad

Portrayal of Russia in the U.S. Media: A Survey of SCSU Students' Perceptions

After the collapse of the Soviet Union, Russia has transformed in many significant ways. However, many Americans hold stereotypical assumptions about modern Russia. Several past empirical studies focused on the correlation between media coverage and people's perceptions of different countries and cultures. However, there are no major studies that examined the relationship between U.S. media coverage and American students' perceptions of Russia. This study focuses on the relationship between U.S. media coverage of modern Russia and SCSU students' perceptions of the country. The study examines whether the nature of U.S. media coverage of Russia leads to misperceptions about the country among SCSU students. Data for this study are collected in two phases. The first phase surveys a sample of SCSU students. In the second phase, a quantitative content analysis of U.S. media outlets (as identified by SCSU students) are conducted. The results are reported in terms of summary statistics such as frequency counts, percentages, and mean. In addition, statistical tests are conducted to determine correlations, similarities and differences. The findings have important implications for understanding how media coverage can impose and reinforce certain ideas about the country.

Presentation Index: A32
Department: Mass Communications
Student Presenter(s): Fedorova, Maria

Time: 9:00 a.m.
Project Sponsor(s)
Ahmed, Niaz

Shopping at the Mall: Economy of Movement and Cost-Benefit Analysis

Pedestrian movement patterns at shopping malls can be analyzed in light of: right turn bias, principle of economy of movement, and the drawing power of attractive store displays (Bitgood & Dukes, 2006). Two studies of pedestrian choice behavior at a shopping mall were conducted. Pedestrians (walking through the mall individually or in groups) were unobtrusively observed as they navigated choice points at the St. Cloud Crossroads Mall. Study 1 included 100 observations; study 2 included 450 observations. Pedestrian choice behavior at intersections was classified into 6 observational categories (right side approach /right turn, left side approach/left turn, right side approach/walk straight, left side approach/walk straight, right side approach/left turn, left side approach/right turn). Additional variables included whether pedestrians were walking as individuals or groups, as well as, the location of magnet stores near the intersection. Non-crossover patterns of pedestrian locomotion (approach on right and turn right, approach on left and turn left) were most frequently observed under all conditions (83.11%) as compared to crossover patterns (approach on right and turn left, approach on left and turn right). Groups showed less adherence to economy of movement principles compared to individual pedestrians. The less economical group locomotion probably reflects the effects of distraction (e.g. from conversation with other group members) as well as difficulty in coordinating movement when people are walking together.

Presentation Index: A33
Department: Psychology
Student Presenter(s): Walcheski, Christina

Time: 9:00 a.m.
Project Sponsor(s)
Jazwinski, Christine

Effects of Extreme Weather Events on Burrowing Owl Productivity

Abiotic conditions can negatively affect avian reproductive success directly and indirectly. High winds, hail, and heavy rain can destroy nests and increase mortality of nestlings. Survival and growth of nestlings can also be indirectly affected by weather primarily through decreased provisioning by parents and declines in prey populations. Studies have been conducted on the nesting ecology of burrowing owls in the Little Missouri National Grassland, North Dakota since 2001. During May and June 2005, precipitation rates were significantly greater than the 56 year average. I monitored 30 nests and measured 29 juvenile owls to observe the effects of extreme precipitation on reproductive success and nestling body condition. Pairs fledged a mean 1.9 young in 2005, which was significantly less than 2002 (3.7), 2004 (3.4) and 2006 (3.8). Nestlings in 2005 were in poor condition compared to 2003, 2004 and 2006. Burrowing owls nest in holes of fossorial mammals, which protect nestlings from the direct effects of weather. Decreased prey detectability and hunting efficiency may have reduced provisioning by adults leading to decreased reproductive success and poor nestling condition in 2005. Identification of factors associated with reproductive success and condition of juveniles is important in understanding the demography of this declining species.

Presentation Index: A34
Department: Biological Sciences
Student Presenter(s): Olson, Rebekah

Time: 9:00 a.m.
Project Sponsor(s)
Restani, Marco

The Influence of Social Intelligence on Leader Creative Problem Solving

Social intelligence, comprised of both social perceptiveness and behavioral flexibility, is the ability to recognize and be sensitive to the demands of a social situation. This includes the capacity to identify the emotions and needs of individuals involved in the situation. Leadership is believed to be a social phenomenon, and leaders often find themselves in ill-defined situations that allow for creativity to occur in problem solving. The ability of a leader to be creative is influenced by social intelligence. Past research has supported the belief that overall social intelligence and its components are important for leader effectiveness. The ability of a leader to understand the social environment allows for and influences his or her ability to creatively solve problems. Our study found that social intelligence will enhance creativity, and that those high in social intelligence are likely better able to consider the social issues that come with all leadership problems.

Presentation Index: A35
Department: Psychology
Student Presenter(s): Basarich, April

Time: 9:00 a.m.
Project Sponsor(s)
Illies, Jody

Session A	All Disciplines	Ballroom

A Preliminary Study of Evidence-Based Practice in Speech-Language Pathology

In recent years there has been increasing awareness of the importance of using evidence-based practice in various helping professions, including speech-language pathology. According to the American Speech-Language-Hearing Association evidence-based practice refers to "an approach in which current, high-quality research evidence is integrated with practitioner expertise and client preferences and values into the process of making clinical decisions (2005). Evidence-based practice (EBP) guides professionals to efficient and effective services resulting in best practices for effective treatment of speech and language problems. The purpose of this study was to find out about the knowledge and use of EBP by speech language pathologists. This study was a part of a larger study conducted by the graduate research class at St. Cloud State University in the Department of Communication Sciences and Disorders. Students interviewed and surveyed thirty-six speech-language pathologists on their knowledge of EBP and its relation to the field of speech-language pathology. Results indicated that the speech-language pathologists provided incomplete definitions of the term when compared with the definition of the American Speech-Language-Hearing Association. Speech-language pathologists varied widely in their use of EBP in their own clinical work. A majority of speech pathologists did not understand EBP and did not use it in their clinical work. A few professionals, however, did understand EBP and used it regularly in their practice. These results indicate a need for further education about evidence-based practice and its importance as well as further research to provide more evidence in the field.

Presentation Index: A36
Time 9:00 a.m.
Department: Communication Sciences and Disorders
Project Sponsor(s)
Student Presenter(s):
Whites, Margery
Gumiela, Stephanie; Janke, Naomi; Yaeger, Kelly; Pitman, Amber; Ilstrup, Rachel

Salivary Testosterone and Cortisol Levels in Female Rugby Players

Athletic competitions are a popular model for testing hormonal changes of athletes. Testosterone, associated with aggressive behavior, and cortisol, a marker of stress and anxiety, has been the focus of most research. Research of hormones and competitive behaviors in female athletes is limited. Typical of many team sports, rugby has a wide range of work intensities. Atypical of female sports, physical aggressiveness in rugby is expected and encouraged. Rugby allows analysis of female athlete's hormonal responses to increased aggressive stress. Saliva samples from women players competing at three levels of rugby are analyzed. Club-side women (n=29) representing St. Paul/Minneapolis area, Territorial Union (TU; to be sampled) representing Midwest region, and USA Women's National Team (WNT, n=26) representing the U.S. To minimize the effects of diurnal variations in hormone levels, subjects submitted the four saliva samples between 9am and 1pm. Baseline and day-after samples were collected in a neutral setting. Game-day samples were collected 1-2 hours prior to and after competition at the game field. Salivary hormone levels were analyzed using an enzyme-linked immunosorbent assay (ELISA). Preliminary results show club-side players (n=14) have a lower baseline (39.94±0.68pg/mL) and pre-game (38.03±0.71pg/mL) testosterone level versus post-game (60.89±2.62pg/mL), and day-after (60.63±1.39pg/mL) testosterone levels. WNT players (n=14) show baseline testosterone (58.47±1.77pg/mL) increasing pre-game (78.36±3.23pg.ml), decreasing post-game (66.16±1.62pg/mL) and returning below baseline the day-after (50.50±1.10pg/mL). Cortisol levels of club-side show higher baseline (0.42±0.03?g/mL) compared to pre-game (0.31±0.02?g/mL), but an increase post-game (0.65±0.05?g/mL) and day-after (0.60±0.03?g/mL). WNT baseline (0.32±0.02?g/mL) increases for pre-game (0.52±0.03?g/mL), post-game (0.94±0.06?g/mL), and returns for day-after (0.40±0.03?g/mL). Overall, these preliminary data show a correlation between increasing hormone levels prior to and immediately following competition within a team. Furthermore, these data show a correlation between increased competition and hormone levels between teams. This study will be completed in June of 2007.

Presentation Index: A37
Time: 9:00 a.m.
Department: Biological Sciences
Project Sponsor(s):
Student Presenter(s):
Tubbiola, Maureen
Triemstra, Jennifer

Does WHI-P131, an Inhibitor of Janus Tyrosine Kinase (JAK) 3, Affect Mitogen-Induced T-Cell Proliferation?

Type 1 diabetes is a disease induced by autoimmune T-cells. T-cells express a signal transduction protein molecule called JAK3. Recent studies have discovered that a potent inhibitor of JAK3 called WHI-P131 (P131) prevents the development of autoimmune diabetes in mice. However, it remains unclear whether P131 directly acts on T-cells. Therefore, the aim of this study was to determine the effects of P131 on T-cell function in vitro by using mitogen-induced T-cell proliferation assays. First, the optimal conditions for quantification of T-cell proliferation should be established. T-cells proliferation is commonly quantified by incorporation of isotope [^{3}H] thymidine in T-cells. As this assay cannot be performed at SCSU, the cell proliferation was quantified using the commercially available WST-1 assay (BioVision Inc). Two types of the T-cell mitogen – concanavalin A (ConA) and phytohemagglutinin (PHA) were tested in three different concentrations in order to find the optimal cell proliferation detectible by WST-1 assay. Splenocytes were isolated from the spleens of BALB/c mice (14-wk-old females). Cells (4×10^{6}/mL) were cultured in 96-well-plate with addition of different concentrations (0, 2, 5, and 10 μg/mL) of ConA or PHA for three days. Then WST-1 was added, and the absorbance was measured by a plate reader at 480 nm. It is found that ConA in concentration of 2μg/ml induced statistically significant (P=0.002, Student t-test) proliferation compared to control, untreated cells. The P131 was added in a concentration range of 0 - 25 μg/mL to determine whether ConA-induced proliferation of T-cells can be inhibited. The addition of P131 induced a dose-dependent suppression of ConA-induced splenocyte proliferation. Even the lowest concentration of P131 (0.8 μg/mL) induced statistically significant inhibition of T-cell proliferation (P=0.0001, Student t-test). These data clearly show that P131 can directly affect T-cell function determined by mitogen-induced proliferation.

Presentation Index: A38
Time: 9:00 a.m.
Department: Biological Sciences
Project Sponsor(s)
Student Presenter(s):
Cetkovic-Cvrlje, Marina
Tsan, Fei Chin; Dayama, Gargi

Geographical Information Systems (GIS) Study of Getchell Creek Watershed

Researchers have discovered over the years that water quality has been degrading. This degradation has detrimental effects on recreational aesthetics and ecological biodiversity of our waterways. Some of these undesirable effects are caused by current land use, such as feedlots. Fertilizers can enter a creek or river from runoff and cause increased algae blooms. Feedlots (concentrated areas of livestock) are also known leach manure into waterways. Associated with both problems; drainage ditches are direct conduits between fields, feedlots and waterways. Starting February 2007, a Geographic Information Systems (GIS) study will be performed to examine the effects of land use on water quality of Getchell Creek (Getchell Creek is a tributary to the Sauk River). This GIS work will be conducted on the creek because of the lack of information about the creek. Information such as drainage ditches, slope of the adjacent land and neighboring farmlands will be presented in the form of a map. Final results will be used to determine if tributaries of the Sauk River, Getchell Creek, ultimately affect the contamination of the river.

Presentation Index: A39
Time: 9:00 a.m.
Department: Environmental and Technological Studies
Project Sponsor(s)
Student Presenter(s): Sanoski, Brian
Bender, Mitch

Session A | All Disciplines | Ballroom

Current Research in Solar Cells and Their Practical Applications

Both the growing general acceptance of global warming, and the finite supply of non-renewable resources are driving funding and research towards earth-friendly, renewable energy sources. It is becoming harder and harder for "big business energy companies" to ignore the signs that our climate is quickly changing, and that traditional energy sources (fossil fuels) are to blame. The result is that many of these same companies, along with governments worldwide, are now investing money on developing and improving environmentally clean, renewable energy sources. This poster presentation is focused on a survey of current research in the area of photovoltaic cells, which are becoming a mainstream supplier of clean energy. Our goal is to educate the public on what research is being done and what options are available for anyone interested in clean, renewable energy systems. In addition to the traditional silica-based photovoltaic cells, other thin-film solar units are now being investigated, and may prove themselves important to the future of the photovoltaic industry not only because of the current polysilicon shortage, but because these cells may be the key to raising the solar conversion efficiency beyond 33%; currently the limit of silicon based solar cell efficiency (1). The following topics will be addressed: what type of photovoltaic cells are the most promising, how close to market each type is, what the practical applications of each are, the potential cost of each system once it hits the market, and the potential efficiency of each system. Literature Cited:1. Smestad, G., and Lampert, C. Solar Power 2006, San Jose, CA *Solar Energy Materials and Solar Cells*. *Vol.* 91. *Issue* 5. 06 Mar 07. pp. 440-444.

Presentation Index: A40
Time: 9:00 a.m.
Department: Chemistry
Project Sponsor(s)
Student Presenter(s): Jeannot, Lori; Larson, Teresa
Sadrai, Mahin

Implementing Management Practices to Restore Native Vegetation at Minnesota Military Training Sites

The native vegetation at two military training sites in Minnesota has decreased by the presence of invasive plant species establishing in large monocultures at Camp Ripley, Little Falls and Arden Hills Army Training Site in Arden Hills. Human activities and military training have contributed during the last years to the increased spread and large invasive plant densities throughout these military installations. To reduce the ecologically damaging effect of invasive plants a long-term management program at these two sites has been established. This program will be integrated into management planning for Camp Ripley and the adjacent jurisdictions. A collaborative agreement indicating the formal long-term services of SCSU with the Minnesota Department of Military Affairs for monitoring and controlling invasive plants was signed in 2002. The first activities for this program were a complete plant inventory, a distribution map, and a predictive model for plant distribution (Babski, 2004). During fall 2004, a control program began order to assess the impact of both the invasive plants and the native community to ensure an effective control with minimum environmental damage. During the following years, effort has been made to monitor the effect of control methods on target species; to assess the results and effectiveness of mechanical and biological control; and to assess results of chemical treatments. Currently, emphasis is on integrated control methods in combination with restoration practices. The purpose of this contribution is to portray the entire range of the project, from the preliminary data acquisition, to the implementation of different control methods, and ultimately bring back native vegetation.

Presentation Index: A41
Time: 9:00 a.m.
Department: Biological Sciences
Project Sponsor(s)
Student Presenter(s):
Arriagada, Jorge
Eisterhold, Joe; Carlyon, Joseph

Influence of Sodium Fluoride Concentration on Quantitative Analysis of Ethanol by Headspace Gas Chromatography in Urine Samples

NaF is added to blood and urine samples to prevent microbial fermentation between the time of sample collection and it's testing for ethanol. Frequently, these samples contain high concentrations of NaF as a result from a collection of small sample volumes in containers designed to hold relatively large sample volumes (100ml) and contain a fixed amount of NaF (1000 mg). This may lead to salting-out of ethanol. Evidentiary urine sample volumes received in such containers in our laboratory vary from 5-100 ml and the resulting NaF concentrations in such samples will be 10-200 mg/ml. Whether such concentrations of NaF affect the accuracy of measurements of ethanol concentrations was examined in this study using pooled urine samples spiked with 50-400 mg/100ml ethanol and incubated at RT for up to 336 hours. Ethanol levels in these samples were determined by headspace gas chromatography. Ethanol concentrations in urine samples with < 20 mg/ml NaF were identical to those without NaF, however ethanol concentrations in urine samples with > 40 mg/ml NaF were significantly lower (4-15%) (p ¡Ü 0.004). The observed reduction in ethanol concentrations was due to NaF-induced salting out of ethanol occurring between the time of NaF addition and its testing for ethanol.

Presentation Index: A42
Department: Chemistry
Student Presenter(s): Pederson, Scott

Time: 9:00 a.m.
Project Sponsor(s)
Sreerama, Lakshmaiah

Overview and Applications of Atomic Force Microscopy

Atomic Force Microscopy (AFM), a member of the Scanning Probe Microscopy (SPM) family, is a novel way to take measurements, manipulate, and image at the atomic level. In AFM, a probe sharpened to a few atoms, is scanned across the surface of a specimen. From the scan, a three-dimensional image can be formed. Using this original image as a guide AFM can be used to manipulate the specimen or material of interest, record electrical measurements, and perform force experiments. The data collected from experiments can be analyzed for surface roughness, electrical conductivity, as well as the relative strength of a material. The purpose of this project is to provide an overview of the functions and capabilities of AFM, and to serve as a guide as to how AFM can be utilized in various fields.

Presentation Index: A43
Department: Chemistry
Student Presenter(s): Janisch, Robert

Time: 9:00 a.m.
Project Sponsor(s)
Neu, Don

Wireless Restaurant System

This project entails the design and development of a system that facilitates increased efficiency in restaurant operations. The system consists of two main components: a wireless handheld device for servers and a base station with a graphical user interface for monitoring orders and transactions. The handheld employs a LCD touch screen interface, a credit card reader and thermal printer for payments, and a wireless transceiver for communication with the base station computer located in the kitchen. This system allows the server to carry out many tasks without repeated trips through the restaurant.

Presentation Index: A44
Department: Electrical and Computer Engineering
Student Presenter(s): Busacker, David; Nere, Andrew; Guertin, Timothy

Time: 9:00 a.m.
Project Sponsor(s)
Glazos, Michael

Intensity Measurement Device for LED Warning System

The objective of this project is to identify the required specifications for the use of LED lighting on snowplows and related maintenance and construction vehicles. The specifications will be determined based on a need to maintain or exceed current safety levels. Current specifications do not directly address LED emergency lighting for these vehicles. MNDot is currently making efforts to replace the standard incandescent based emergency lighting with LED based lighting. No standard exists for quantitative measurements of intensity in LED based warning systems as compared to standard filament strobes. As of now MNDot uses subjective testing for lighting systems. The final project will provide this quantitative data to MNDot and allow them to make decisions regarding vendor products.

Presentation Index: A45
Department: Electrical and Computer Engineering
Student Presenter(s): Gutridge, Richard; Henspeter, Justin; Olmscheid, Derek

Time: 9:00 a.m.
Project Sponsor(s)
Vogt, Timothy

Weather Monitoring System with Wireless Capability

At St. Cloud State University seniors of the Electrical and Computer Engineering department are required to use their skills, knowledge from previous classes, and personal research to design, test and successfully demonstrate a completed product prior to graduation. The project we propose is a weather monitoring system (WMS). This project will consist of a base station that will collect data from multiple wireless sensor units (WSU). Each WSU will record data such as: humidity, temperature and dew point. Data will be transmitted to the base station, where it will be uploaded to a labtop to view on a software we will create. Sensors can be added to the WSU at later times to accommodate different reading. The significance of this project is to assist meteorologists gather data from the environment. The data gathered will then be used by the customer for research purposes. Dr. Rodney Kubesh of the Earth and Atmospheric Sciences at St. Cloud State University is our main customer, and will use our project to better serve his weather research. Our project will be also be used for research by Electrical Engineering professor, Dr. Mark Petzold.

Presentation Index: A46 Time: 9:00 a.m.
Department: Earth and Atmospheric Sciences/ Electrical and Computer Engineering Project Sponsor(s)
Student Presenter(s): Eiden, Matthew; Frank, Cory; Ahmed, Taimour Kubesh, Rodney; Petzold, Mark

Digitially Controlled Analog Tranceiver

Most amateur band radios (ham radio) are either all analog (hardware) or all digital (software). For current amateur radio equipment the disadvantage is that the digital signal processing (software) filters are not as selective as the older style analog (hardware) filter. The advantage to the newer digital systems is that the controls for the digital radios are easily configurable/customizable and tend to be easier to use. In creating a digitally controlled analog transceiver we gain the ease of use of a digital radio and the high selectivity of an analog radio. We limited ourselves to the 20 meter band which spans the frequency range of 14.000 MHz to 14.350 MHz. The radio has a graphical user interface running on a Linux based computer system with a USB connection to the transceiver hardware. The transceiver hardware uses a mircocontroller to control all the functions of the transceiver subsystems using a serial protocol interface.

Presentation Index: A47 Time: 9:00 a.m.
Department: Electrical and Computer Engineering Project Sponsor(s)
Student Presenter(s): Gesmundo, Matthew; Peterson, Timothy; Honeck, Kelly Vogt, Timothy

HIV/AIDS in India: An Awareness

India is the second most populous country in the world. The HIV/AIDS issue in India has now grown to pandemic proportions and has seeped into all sectors of the population, thus rendering the notion that only high-risk groups like sex-workers and intra-venous drug users need to be worried. Numerically, UNAIDS puts the people (15-49 years range) affected by HIV/AIDS at an estimated total of 5.2 million. The country faces a huge challenge rising up to the debilitating outreach of this deadly disease. Along the way, it has to tackle an ocean of problems like an ever-growing population, a disproportionate number of scientific laboratories and equipments, research facilities, and medical personnel to deal with the AIDS epidemic, a social and cultural fabric that has strands of taboos against an open discussion of sexual practices, and poverty and malnutrition. It is a daunting task for any governmental or non-governmental organization to work under and with such strong forces that gnawing at the core problem. India is second only to the African continent in terms of the number affected by HIV/AIDS. The poster exhibition is a strategic attempt to provide a window view to the landscape of epidemic that is threatening to bring to knees arguably one of the most vibrant nations – culturally, demographically, and technologically - on this planet. It is an effort to build a voice that can reach out to the international population in general, and St Cloud community in particular, about the serious threat of the HIV/AIDS epidemic in the Indian sub-continent.

Presentation Index: A48 Time: 9:00 a.m.
Department: Human Relations and Multicultural Education Project Sponsor(s)
Student Presenter(s): Huber-Warring, Tonya
Joshi, Aneesh; Leahy, Eric; Dunham, Kyle; Mom, Mary; Anderson, Kelli

Global Social Justice Service-Learning at a State University

How can state universities help facilitate connections for students to feel allied to their international and indigenous brothers and sisters when, in reality, many may never have the opportunity to travel to countries outside of the US? In the global village that we are a member of today, it is not uncommon for the average American to misconstrue the ways in which global politics and economy affect the world community. In addition to those beliefs, with the limited US history most receive through secondary school, many do not understand the global impact of the decisions that are made within the United States. Negative attitudes, beliefs of inferiority and misconceptions that many Americans hold towards "others" and indigenous peoples around the globe are pervasive. Before solidarity is possible, connections must be created and maintained. Service-learning provides an excellent opportunity to facilitate connections among diverse groups of people from many different personal, cultural, racial, ethnic, socioeconomic and religious backgrounds. This research focuses on looking at the destincitve features for a globally focused service-learning curriculum based on principles of social justice and global reconciliation at a public higher education institution; understanding the limitations of many students at public higher education institutions if it is possible to set up and incorporate meaningful global service-learning for those students who will not be able to participate on-site with the international community; and what factors make a difference in the outcome of critical consciousness achieved by the students engaged in service-learning.

Presentation Index: A49 | Time: 9:00 a.m.
Department: Human Relations and Multicultural Education | Project Sponsor(s)
Student Presenter(s): Weiley, Kelly | Huber-Warring, Tonya

Interval Recording for Duration Events

In two experiments, events that were recorded using continuous duration recording (CDR) were rescored using 10-s partial interval recording (PIR), 10-s momentary time sampling (MTS) and 20-s MTS. Results of experiment 1 showed that data paths generated by each interval method produced conclusions about functional control that were similar to those based on CDR when using reversal designs; however, for multielement designs, 10-s PIR was prone to showing differentiation between data paths that was not evident with CDR. Results of experiment 2 showed that both 10-s and 20-s MTS yielded data paths on behavior-behavior relations (e.g., covarying responses) that were consistent with CDR whereas 10-s PIR produced some behavior-behavior patterns that were not. In both experiments, 10-s MTS generated data paths that were nearly identical to the respective CDR data paths. The implications of these findings for researchers and clinicians are briefly discussed.

Presentation Index: A50 | Time: 9:00 a.m.
Department: Community Psychology | Project Sponsor(s)
Student Presenter(s): Colby, Amanda | Rapp, John

Analysis of Nutrient Loading in St. Augusta Creek

From September 2006 continuing into April 2007, nutrient levels in St. Augusta Creek were sampled and recorded. The creek was a tributary to the Mississippi River and was protected by a 300-foot buffer of trees on both sides. Nutrients (ammonia, phosphorus and nitrate) were sampled once a week as well as after any significant rainfall for a period of two semesters. Nutrients reaching the creek through rain and irrigation in over abundance can promote algae growth and lower dissolved oxygen levels. Nutrients such as phosphorus can lead to eutrophication causing problems in water quality, effecting habitat for fish, vegetation and waterfowl. Samples taken from the St. Augusta Creek were tested in a laboratory. The creek itself and the river it drains into are impacted by the surrounding land use and may result in the impairment of water quality. By taking water samples, allows for identification of high levels of nutrients and further research leading to the cause of pollution.

Presentation Index: A51 | Time: 9:00 a.m.
Department: Environmental and Technological Studies | Project Sponsor(s)
Student Presenter(s): Lenz, Matthew | Rose, Charles

Global Warming: Is It Human Induced?

A survey of 100 people revealed an interesting perspective of central Minnesota on global warming and humans' involvement. The census revealed that many of the people surveyed were not well educated on the matter and some were quite misinformed. A large percentage of the people surveyed were in favor of their tax money being spent on alternative fuel research. Even those who did not believe that carbon emissions were compounding global warming supported alternative fuels. Not a single person surveyed currently use metro transit to get around, and many of them drove high consumption vehicles like trucks and SUVs. In this survey I was able to gain an understanding of how individuals feel about global warming and what molded their opinions. I also found that people were willing to sound supportive, yet not take action on what they believe is right. My poster reveals the statistics I received and the knowledge I gained, a long with some current information on the theory of global warming.

Presentation Index: A52
Time: 9:00 a.m.
Department: Earth and Atmospheric Sciences
Project Sponsor(s)
Student Presenter(s):
Rose, Charles
Mevissen, Laura

Use of Detox Center

The purpose of the data collected was to compare the abuse of alcohol/drugs in the St. Cloud area to the rest of Minnesota, as well as comparing Sterns County to its neighboring counties. Data was collected from patients at the Sterns County Detox (N= 994) during a six month time period. This information was put together to compare social classes, ages, and who is paying for the stays in Detox. It was found that many counties are paying for the patient stays but they are not the ones responsible for those patients. We also found that a significant number of patients are college students/homeless that don't need the facilities but just a place to stay for the night.

Presentation Index: A53
Time: 9:00 a.m.
Department: Psychology
Project Sponsor(s)
Student Presenter(s):
Melcher, Joseph
Swenson, Samuel; Nelson, Bryan

HIV/AIDS in Africa: An Awareness

Most sub-Saharan African countries experience high mortality rates, high maternal mortality rates, and low average life expectancy due to manifestations of HIV/AIDS. Despite the effort made by different people to tackle the problem and raise awareness about HIV/AIDS for more than 20 years now, there is no tangible evidence that HIV/AIDS infection is going down. In Botswana for example, it is estimated that one of every three adults is infected and life expectancy has dropped from 62.5 to 35 years of age. The data available for the pandemic, however, does not justify the magnitude of the problems as many cases go unreported. The inadequate resources for both medical institutional and governments amplify the magnitude of HIV/AIDS. Globally, an estimated 36 million people are currently living with HIV, and some 20 million people have already died, with the worst of the epidemic centered on sub-Saharan Africa. But just as the spread of HIV has been greater than predicted, so too has been its impact on social capital, population structure and economic growth. Responding to HIV/AIDS on a scale commensurate with the epidemic is a global imperative, and the tools for an effective response are known. Nothing less than a sustained social mobilization is necessary to combat one of the most serious crises facing human development. Students from the Human Relations and Multicultural Education department have joined forces with the Organization for Prevention of HIV/AIDS in Africa (OPAA) to raise awareness of determined effective ways to support people living with HIV/AIDS and child victims in the African Continent.

Presentation Index: A54
Time: 9:00 a.m.
Department: Human Relations and Multicultural Education
Project Sponsor(s)
Student Presenter(s):
Huber-Warring, Tonya
Joshi, Aneesh; Cook, Sarah; Nelson, Pam; Hed, Michelle; Pederson, Daved; Iserberg, Andy; Jangu, Neema; Osbeck, Angela

Elm Creek Water Quality

I will be doing serial tests of water quality and a lab test to predict the amount of each pollutant that is in the water.

Presentation Index: B1 | Time: 9:00 a.m.
Department: Geography | Project Sponsor(s)
Student Presenter(s): Chase, Eric | John, Gareth

Barriers to Russian Air Transportation - Why Russian Citizens Stay Put

Historically, there have always been barriers for people when it comes to travel. Some classifications of such barriers include physical, economic, ethnic—or religious, and a lack of feasible infrastructure or mode of transportation. This paper analyzes specific obstacles within these categories and applies them specifically to air travel in the Russian Federation. Unreasonably high costs, vast physical distances, and an undeveloped air transportation network are just a few of the reasons as to why Russian citizens do not fully participate in domestic air travel to an extent comparable to that of United States citizens. Suggestions for future research on this topic are presented.

Presentation Index: B2 | Time: 9:20 a.m.
Department: Geography | Project Sponsor(s)
Student Presenter(s): Wheeler, Jamie | John, Gareth

What Phytoliths Can Tell Us About the Geography of Plants

Phytoliths are silica based microscopic structures in plants which remain after the rest of the plant is gone. Different plants contain different types and groupings of them, making it possible to determine past vegetation types of an area. Little work with phytoliths has been done in eastern Beringia (what is now the Yukon and Alaska), although other methods have been done to try and determine the vegetation here during the last glacial period. In this article phytolith samples from two locations in Beringia, one in Alaska and one in the Yukon, are used to determine what differences there are between these locations and what the overall vegetation type was in Beringia during the last glacial period. The samples were processed in a lab and then phytoliths were counted under a microscope. The results may be important in determining what the climate was like at that time in Beringia.

Presentation Index: B3 | Time: 9:40 a.m.
Department: Geography | Project Sponsor(s)
Student Presenter(s): Bagent, Chelsey | John, Gareth

SCSU faculty and the Globe

I am taking the faculty over the last 5 decades and looking up each faculty's member college of highest degree in the library achives. Then I am going to use maps to show how the faculty has expanded over the whole world during these decades, and comparing faculty percentage of United States and globably of where there highest degree was obtained.

Presentation Index: B4 | Time: 10:00 a.m.
Department: Geography | Project Sponsor(s)
Student Presenter(s): Robillard, Jordan | John, Gareth

Diffusion of Gypsy Music

As a result of the "culture turn" in human geography, a deeper emphasis was placed on performance and practice with an added attention to the other senses. The importance of music as an affect and emotion in shaping behaviour, can reveal a hidden role in the production of place and to a more peculiar and sensuous extent, placemaking. However, music has been used by geographers in a variety of ways. Examples of music's role in geographic analysis range from issues dealing with globalization to nationalism, and to small local areas. In this research, I will be exploring the various ways that music has been givin the focus of attention in geographic studies and to offer a case study of the Gypsys and what their music reveals about their place in the world.

Presentation Index: B5 | Time: 10:20 p.m.
Department: Geography | Project Sponsor(s)
Student Presenter(s): Watson, Cory | John, Gareth

Automator Chop Saw

Alexandria Extrusion Company is a precision aluminum extruder with associated finishing operations. The extrusion process involves pushing heated solid aluminum billets through dies to make desired shapes. The process is similar to the Play Dough machines kids play with except the force is over two million pounds. Alexandria Extrusion has a precision automatic part-advancing machine with accuracy capabilities far exceeding those of the current chop saw that is used to section the extrusions. A chop saw utilizes a circular blade that often is driven by an electric motor. The blade is mounted to a frame that is capable of moving radial direction to achieve vertical blade motion. The productive life of the current chop saw is limited due to the demanding application it is used with. The current chop saw is a purchased saw that has been modified to work with the indexing machine. The existing application required the electric motor to be upgraded, which in turn created more problems. The main pivot bearings fail prematurely because the large electric motor is now heavier and mounted on the opposite side of the saw than it was originally designed for. In addition, the saw arbor is under-designed for the increased power output which causes rapid wear and failure. To produce mitered cuts with the chop saw requires a time-consuming changeover process. The changeover process requires the use of the overhead crane to support the saw; then the saw is unbolted from its base and rotated to desired orientation. Another inefficiency of the chop saw is that it requires full stroke cuts for every part profile. There are no means of varying stroke length based on part profile. The objective of this project is to design and produce a fully automated, variable stroke, chop saw that is capable of miter cutting from zero to forty-five degrees and integrating it with the current indexing machine. Assembly, installation, performance verification and operational training are also part of this project.

Presentation Index: C1
Time: 9:00 a.m.
Department: Mechanical and Manufacturing Engineering
Project Sponsor(s)
Student Presenter(s):
Covey, Steven
Rupp, Adam; Wieland, Carl

Design a Multi-User Campus Geographic Information System

The principal objective of this thesis is to investigate the feasibility and hence the design of a multi-user campus GIS for Saint Cloud State University. This system would aid various departments using geo-spatial data in their day-to-day activities to perform their tasks more efficiently, as they would be presented with current information from a central server on the intranet. Most of these departments work with their own archived paper maps and drawings with their associated information in both hard and soft copies. This presents a discrepancy in acquired information among the various units. In this thesis, aspects such as; System and Geodatabase Design, Data-Access Control List (Data Security) and Load Balancing with regards to ESRI ArcGIS Server would be discussed. A multi-user campus GIS would greatly enhance data sharing and reduce redundancy.

Presentation Index: C2
Time: 9:20 a.m.
Department: Geography
Project Sponsor(s)
Student Presenter(s):
Hochmair, Henry
Dei, Nana

CNC Tool Changer Design

CNC controlled routers increase the throughput and quality of wood, plastic and nonferrous metal products in the aerospace, furniture, appliance, recreation, and consumer goods markets. Komo Machine Inc, a premier CNC router manufacturer located in Sauk Rapids, Minnesota identified the need for a faster Automatic Tool Changer (ATC) with increased tool capacity to increase the productivity and flexibility of their routers. The new ATC design is being conducted by two senior MME students at SCSU. The design requires stress, fatigue and dynamics analysis of critical components to ensure that safety, durability, and functionality requirements are met. The design team combines theory and modern CAD and CAE tools for design synthesis and analysis. Design for manufacturing is emphasized throughout the project for a product that is economically desirable to both Komo Machine Inc. and the end users.

Presentation Index: C3
Time 9:40 a.m.
Department: Mechanical and Manufacturing Engineering
Project Sponsor(s)
Student Presenter(s):
Yu, Warren
Meyer, Dana; Schafer, Jason

Session C	Engineering and Design	South Glacier

Application Load Simulation and The Potential for DOS When the Linux Top Program Is Misused

In computer security, a denial-of-service attack (DoS attack) is a computer crime that violates the Internet proper use policy as indicated by the Internet Architecture Board (IAB) and makes a computer resource unavailable to its intended users. DoS attacks have two general forms. One form causes the victims' computer(s) to reset or consume its resources such that it can no longer provide its intended service. The second form obstructs the communication media between the intended users and the victim in such way that they can no longer communicate adequately. Attacks can be directed at any network device, including attacks on routing devices, Web resources, electronic mail or Domain Name System servers. In our example we simulate a collage campus network using Debian, a distribution of the Linux operating system. Providing students with Linux shell accounts provides them with an open and extremely functional learning environment but also offers them a powerful platform rom which to launch DoS attacks. One possible scenario that can be easily implemented is setting the delay parameter on an interactive command such as "top". By default the refresh rate is 3 seconds. However, it is possible to set it to sub-second values such as.0001. This paper will look at the effectiveness of a DoS attack using a very simple LINUX program generally available to all users on LINUX platform. Top is a program that will give continual reports about the state of the LINUX system, including a list of the processes using the CPU. In this setup we have a single host with a progression of up to eight clients. We seek to determine if the top command could be used as an effective DoS attack.

Presentation Index: C4
Time: 10:00 a.m.
Department: Business Computer Information Systems
Project Sponsor(s):
Student Presenter(s):
Guster, Dennis
Krzenski, Sara

Database Security

Database Security is an integral component of the Information Systems infrastructure in the world today. The principal objective of this paper is to identify the strengths and weaknesses of currently used database security methods and propose an improvement to one of the mechanisms. There are various security methods in place in every environment, but this paper limits itself to the security of databases on a LAN, such as, Network & Server security, Access/Connection to databases, Multi-level & Statistical database security, and Table & Mandatory access control. The paper concludes with detailed information into Multi-level database security, highlighting its strengths and weakness and a proposal to how its security could be strengthened.

Presentation Index: C5
Time: 10:20 a.m.
Department: Business Computer Information Systems
Project Sponsor(s)
Student Presenter(s):
Chen, Jim
Dei, Nana

Session D	Social Sciences I	Lady Slipper

Seductive Indifference: Affordable Housing Mismeasurement

While it is impossible to disentangle the interplay of all the elements that can influence family well being, decent, affordable housing provides a safe space that acts as the center and foundation of family life. In the last 10 years, however, there has been a rapid increase in the numbers of low-income families with children that experience difficulty obtaining and maintaining rental housing they can afford. The standard 30% ratio of rent to income has been incorporated into public policy guidelines, and is now the predominant measure of excessive housing cost burdens. Yet the use of a single ratio fails to incorporate variables, such as geographic location and social class, that influence what type of rental housing is affordable and to whom. This project examines the degree to which rental housing is actually affordable to low-income families with children in St. Cloud, substituting an alternative methodology for the standard rent to income ratio. Also included are qualitative interviews with program and service providers who address this issue in their everyday work. Recommendations are made for public policy direction, as well future research, based upon the project findings.

Presentation Index: D1
Time: 9:00 a.m.
Department: Sociology and Anthropology
Project Sponsor(s)
Student Presenter(s):
Havir, Linda
Knisley, Nikki

The Impact of Foreign Direct Investment on Growth in Developing Countries

Recent research shows that an increase in foreign direct investment (FDI) leads to higher growth rates of gross domestic product (GDP) in financially developed countries compared to rates observed in financially poor countries. This means that local conditions such as the development of financial markets, the educational level of a country, human capital, affect the impact of FDI on economic growth. Holding these things constant, this paper finds that there is a positive correlation between FDI and growth (i.e. FDI significantly influences growth.) Using panel data with an instrumental variable technique on seven Central American countries over the period 1970-2000, the study finds that an increase in FDI in these developing countries led to an increase of growth but at a decreasing rate. The findings further suggest that developing countries should not adopt FDI that is complementary to local production because this does not meet their need for knowledge and technology spillovers necessary to spur growth in the critical sectors of the economy.

Presentation Index: D2
Department: Economics
Student Presenter(s):
Ogaja, Jermaine

Time: 9:20 a.m.
Project Sponsor(s)
Banaian, King

Global Politics: NGOs and the Afghan Women's Movement

Today, more than ever, we are seeing the strong influences of NGOs transcending national borders. The purpose of my paper is to understand the role of non-governmental organizations (NGOs) in local politics. In particular, the paper will seek to understand how NGOs permeate state borders and what influences NGOs have on the local politics of a region. To do this, we will use the women's movement in Afghanistan as a case study, and look at how NGOs have affected organizations such as the Revolutionary Afghan Women's Association (RAWA).

Presentation Index: D3
Department: Political Science
Student Presenter(s):
Toenjes, Ashley

Time: 9:40 a.m.
Project Sponsor(s)
Greaves, Edward

Women in War-torn Countries

What do we know about war? Violence, Death, Blood, etc is what comes to our mind when we think of war. Most of the things people know about war is what the media expose to them. Since men constitute the majority of the armies, the center of attention is mostly on them. What about women? What is their position during war? This is a question that many of us don't take seriously, since it is often omitted to inform the public about the role of women in war. Women contribute to war in many ways; not only they have important responsibilities, but they are also significant victims of the conflicts happening around the world. This presentation is to enlighten people about the truth of war that is often hidden: Women face the most extreme fatalities during war.

Presentation Index: D4
Department: Women's Studies
Student Presenter(s):
Otieno, Nelly; Mareini, Fatuma

Time: 10:00 a.m.
Project Sponsor(s)
Mwangi, Mumbi

Globalization in Laos and Thailand: Changing Lifeways

The presentation will discuss the transition that the Lao and Thai economies are currently undergoing. The transition is from subsistent agriculture to the less sustainable practices of market agriculture and the emerging prevalence of tourism which is driving these two countries towards mixed economies. The historical context which has brought SEA to the current situation will be highlighted throughout the presentation pertaining to: colonization, continuing colonization (i.e. Westernization, development, or imperialist expansion), discrimination, environmental concerns, and the U.S. led War on Drugs. These situations will show the progression of globalization as Laos is gradually opening up to more foreign trade and as Thailand continues to expand as a capitalist nation.

Presentation Index: D5
Department: Ethnic Studies
Student Presenter(s): Swanberg, Breanna

Time: 10:20 a.m.
Project Sponsor(s)
Cha, Dia

Kinase Virulence Factors of *Toxoplasma Gondii*

Toxoplasma gondii is an intracellular protozoan parasite. Three clonal lineages of *T. gondii* currently exist. Type I strain is highly virulent compared to Type II and Type III strains. Two recently identified key virulence factors are the rhoptry secreted serine/threonine kinases ROP16, and ROP18. Currently, a debate is being waged over whether the targets of these kinases are host or parasite proteins. The aim of this ongoing project is to identify these target proteins using yeast 2-hydbrid analysis. Kinase activity will be characterized spectrophotometrically. The outcome of this project will provide the target(s) of these two kinases which lead to increased virulence.

Presentation Index: E2 Time: 9:20 a.m.
Department: Biological Sciences Project Sponsor(s)
Student Presenter(s): Reberg, Alexander Kvaal, Christopher

The Cloning and Characterization of *Toxoplasma Gondii* MAT1

Molecular mechanisms of cell cycle control have been well characterized in numerous model organisms. While many of these mechanisms are evolutionarily conserved, novel pathways may exist in organisms with unusual modes of cell division. *Toxoplasma gondii* is an intracellular parasite that divides by endodyogeny. This type of cell division occurs by production of two daughter cells inside an intact mother cell. We have cloned a Toxoplasma MAT1 homolog and investigated its potential interaction partners in an attempt to further elucidate pathways controlling endodyogeny. MAT1 is an assembly and targeting factor for the Cdk-activating kinase or CAK. CAK is a trimer composed of Cyclin H, Cdk7 and MAT1. CAK phosphorylates other Cdks, resulting in their activation. CAK also is part of the transcription factor TFIIH and phosphorylates RNA polymerase II, thus providing a link between cell cycle control and transcription. MAT1 has been shown to interact with various proteins involved in transcription, DNA repair, and cell division. We performed a yeast two-hybrid screen with *T. gondii* MAT1 to identify potential MAT1 interaction partners in Toxoplasma. We have identified three novel MAT1 interaction partners and reproduced these interactions in the yeast two-hybrid system. One of these proteins is unique to *T. gondii*, another is an inner membrane complex protein, and the third is a putative trichohyalin. These protein-protein interactions demonstrate the conservation of eukaryotic cell cycle control mechanisms with species-specific adaptations.

Presentation Index: E3 Time: 9:40 a.m.
Department: Biological Sciences Project Sponsor(s)
Student Presenter(s): Roiko, Marijo Kvaal, Christopher

Occurrence of Endocrine Disruption in Minnesota Fish Within the Mississippi River: Assessment of Fish Health

Endocrine disruption is well documented in the United Kingdom but few large scale studies investigating this problem have been conducted in the United States. In the summer of 2006, carp, redhorse, and smallmouth bass were collected at 42 sites on the Mississippi River between Bemidji and the Iowa border. Blood samples were taken for vitellogenin analysis, reproductive organs and livers were prepared for histological examination, and weights or organs were taken for calculating organosomatic indicies. Plasma vitellogenin concentrations were elevated in male fish at some sites but not others. Histological examination did not reveal intersex in any specimens. There appears to be a trend of increased HSIs and GSIs in males at sites with induced VTG which may be attributed to presence of EDCs and overall pollution.

Presentation Index: E4 Time: 10:00 a.m.
Department: Biological Sciences Project Sponsor(s)
Student Presenter(s): Jahns, NathanJulius, Matthew; Schoenfuss, Heiko; Lee, Kathy; Murphy, Robert

Copepod Mortality in the Lower Chesapeake Bay and Causal Environmental Response

Through the past two years it has been shown that the frequency of copepod (*A. tonsa*) carcasses in the lower Chesapeake Bay to be 23.5% on average, with a standard deviation of 5.5%. This was determined with a biological stain known as Neutral Red which was shown to be accurate (+/- 5%) and very precise with a standard deviation of 1.3%. Neutral Red was compared to another biological stain known as Aniline Blue. In comparison Aniline Blue is considerably less accurate (+/- 32%) and precise with a standard deviation of 7%. Causes of this mortality are either natural or episodic and were compared. Copepod populations show no response to gradual changes in temperature, salinity, dissolved oxygen and concentrations of chlorophyll-a. In comparison bout prop water had on average 4.1 times more dead copepods in it then the adjacent environment. This suggests that this natural abundance of dead copepods maybe lower in pristine conditions.

Presentation Index: E5 Time: 10:20 a.m.
Department: Chemistry Project Sponsor(s)
Student Presenter(s): Freund, Curtis Leenay, Tamara

ESL Writing: Adding Richness and Depth Through Transformations

"Mankind takes one giant leap and man takes one small step" doesn't have quite the impact as the memorable words "That's one small step for man, one giant leap for mankind," spoken by Neil Armstrong upon stepping on the Moon in 1969. The power of syntax can change the ordinary to the extraordinary. According to the Generative Grammar Theory, the brain produces, abstractly, the basic building blocks of sentences of all human languages. What makes the sentence, and the discourse, unique is the result of grammar transformations applied to abstract Deep Structure producing the Surface Structure utterance. Could explicit teaching of grammar transformation rules to English as a Second Language (ESL) writers improve the quality of their writing beyond simple grammar adequacy and correctness to discourse subtlety and liveliness? Although movement rules certainly make writing more moving, is this intuitive only to native English speakers or is it a skill that can be taught to ESL writers? Assuming that creativity is found equally in native and non-native speakers of English, this study hopes to discover a useful tool to help ESL writers communicate their creativity more effectively when using English as their choice of expression.

Presentation Index: F1
Department: English
Student Presenter(s):
Deuser, Cindy

Time: 9:00 a.m.
Project Sponsor(s)
Mohrbacher, Carol

The Professional Adjustment of ESL Teaching Assistants in College ESL Practium: Two Case Studies

Two case studies were conducted to exhibit the professional adjustment of two beginner Teaching Assistants, one native speaker of English and one nonnative speaker of English, during one-semester English teaching in their Masters' program of Teaching English as a Second Language. Five interviews and ten times of class observations for each informant were administered, and four teaching notes of each TAs which were posted on D2L discussion board were analyzed. Data analysis was from the subjects' personal perception about teaching and learning, their identity formation, their collaboration with students, peers and supervisor and their stated behavior and their actual behavior in teaching. The studies provided the comprehensive description about the professional development of the TAs, revealed individual changes through the process and indicated the factors which affect their professional adjustment in depth. The suggestions for teacher training in TESL MA program were provided as well.

Presentation Index: F2
Department: English
Student Presenter(s):
Liao, Yuanyuan

Time: 9:20 a.m.
Project Sponsor(s)
Robinson, James

Magic Realism

This paper researches magic realism and its role in literature. I start by defining magic realism and examining its role in past works of fiction, mainly Latin American. I briefly discuss the history of the genre, which will include a succinct visit to other areas of the humanities. I also examine some classic fiction that is not traditionally recognized as magic realism. Ultimately, I show that magic realism is a much more common genre than is realized.

Presentation Index: F3
Department: English
Student Presenter(s):
Pickens, Alexandra

Time: 9:40 a.m.
Project Sponsor(s)
Dorn, Judith

Session F	Linguistics and Humanities	North Voyageurs

Lecciones de Bartolomé Las Casas

Bartolomé de Las Casas is considered an important figure for his efforts to maintain the civil liberties of the natives of Central and South America. At the same time, he is known for his influence in African slavery. In our global market and amidst widespread eurocentrism, we should be careful not to forget the value of each person. The actions and errors of Las Casas show us the importance of valuing each human being. This paper will be presented in Spanish.

Presentation Index: F4 Time: 10:00 a.m.
Department: Foreign Languages and Literature Project Sponsor(s)
Student Presenter(s): Lange, Erica Splittgerber, Lisa

Session G	Aviation	Granite

The ADA in Aviation

The Americans with Disabilities Act has a profound effect on what is considered fair treatment of passengers flying with today's airlines. Data compiled on this issue shows that great care must be taken by organizations in order to reduce passenger and employee discrimination. Under the ADA the transportation industry is forced to deal with customer complaints, as well as compliance issues that involve their current employees and prospective employees. Company wide awareness of these issues is the only way that organizations can reduce and possibly eliminate expensive lawsuits that are associated with the ADA. Something as simple as how a floor mat is placed within an organizations office building has the potential to ignite a hailstorm of legal complaints. With this in mind; how an employee deals with passengers has a great effect on the prosperity and health of a particular company or organization.

Presentation Index: G1 Time: 9:00 a.m.
Department: Aviation Project Sponsor(s)
Student Presenter(s): Barrett, David Aceves, Robert

Renewable Energy for Airports

As aviation begins to expand its reaches there will be a growing need for new airports not only in the United States but also in developing countries. The developments of these airports face many obstacles, including acquiring reliable sources energy. As the need for non-renewable energy continues to climb, so will the cost. This project examines current and future forms of renewable energy that can be implemented at existing and potential airports throughout the world. The project uses academic journals, questionnaires, and interviews to analyze the feasibility of renewable energy. The results of the findings will be discussed.

Presentation Index: G2 Time: 9:20 a.m.
Department: Aviation Project Sponsor(s)
Student Presenter(s): Fox, Jeremy; Clark, Jason Aceves, Robert

Runway/Taxiway Incursion Prevention

The objective of this project is to promote and create a safer environment in the area of airport runway/taxiway incursions. Currently in many of the major airports across the nation the controlling tower has a difficult time positively identifying where aircraft are located and moving on the field during busy times and poor weather conditions. During these times communications can be hard to decipher leading to potential hazards of both runway and taxiway incursions. This lighting system will allow for prevention of aircraft from entering contaminated areas of the airfield. This will be done with improved lighting methods at runway/taxiway thresholds and crossings. These lights will provide a redundant system to the audible clearances that are given to pilots now by tower/ATC via radios. The lights will be highly efficient and durable LED's and will be placed in ground around hold short lines and runway crossing marks. The lights will be tower controlled changing lights from red to green to signal to that the tower has cleared the pilots to proceed. The lights will always be red unless the controller has depressed a button controlling the lights changing them to green; when the button is released the lights will then return to red. Also, there would be in ground lights installed into the runway end identifier numbers. This will improve situational awareness to pilots both on the ground and those pilots approaching the runway from the air. The cost of implementing this lighting system will be substantially less then the cost of the lives and aircraft damages that will potentially be saved.

Presentation Index: G3 Time: 9:40 a.m.
Department: Aviation Project Sponsor(s)
Student Presenter(s): Duininck, Jonathan; Semph, Shawn Aceves, Robert

Session G	Aviation	Granite

Runway Incursion Prevention

Can one create a new design to be implemented into an airport setting to reduce the number of runway incursions? Our design may do just that. Through interviewing aviation industry professionals and experts, our research is strongly supported. The research conducted is also an FAA design competition. The FAA or Federal Aviation Administration promotes safety in aviation. This research design will promote safety in aviation. Through research and design, we hope to bring safety to aviation at an affordable price.

Presentation Index: G4
Time: 10:00 a.m.
Department: Aviation
Project Sponsor(s)
Student Presenter(s):
Aceves, Robert
Sunderland, Toby; Splittstoesser, Andrew

Geothermal Heating and Cooling

Geothermal heating and cooling is an environmentally friendly alternative to fossil fuels that could improve the airport image. Geothermal energy has the potential to save smaller airports size class D or smaller on heating and cooling costs. Some of the potential benefits of using geothermal energy at smaller airports are addressed in the research paper, as well as some possible problems of geothermal energy use. Varieties of field expertise, journals, magazines, and electronic resources have been utilized to research the feasibility of implementing geothermal heating and cooling at airports. Geothermal heating and cooling has the potential to cut back on airport costs today as well as in the future.

Presentation Index: G5
Time: 10:20 a.m.
Department: Aviation
Project Sponsor(s)
Student Presenter(s):
Aceves, Robert
Mahoney, Ryan; Redfall, Tansy

Session H	Psychology	Oak

Attitudes Toward the Origin of Sexuality and Emotional Awareness

In 1991, Simon LeVay discovered through his research that male homosexual brains differ structurally from heterosexual male brains. Despite these types of evidence, it is still thought today by some that homosexuality is a choice. For this study, we wanted to see what kind of a role emotional awareness might play in peoples perception of the origin of homosexuality. There were 23 undergraduate students who were asked to take a questionnaire: 6 males and 17 females. The first part of the questionnaire asked questions to measure the individuals' emotional intelligence/awareness. The second part of the questionnaire asked some personal questions such as, do you believe that homosexuality is a choice made by the individual? or, do you have any friends who are gay or lesbian? It was hypothesized that the higher the emotional awareness of an individual, the more likely they are to believe homosexuality is biological; and that individuals with a higher education level would also believe homosexuality was biological. The data were analyzed using a Pearson correlation. There were more than a few significant relationships that were found. The results implied that participants surveyed did not believe homosexuality was a lifestyle choice.

Presentation Index: H1
Time: 9:00 a.m.
Department: Psychology
Project Sponsor(s)
Student Presenter(s): Smith, Renee
DeVoe, Marlene

Self- and Other-Control for Boys

This research will explore the various ways boys are controlled by family, educational systems, and societies which may then interfere with their own self regulation of emotion (Conway, 2005), behavior, and motivation (Pollack, 2006). Boys are falling behind girls in school performance and entry into many professional fields (Weisgram & Bigler, 2006). Boys are also more frequently than girls labeled with such problems as the following: learning disabled, conduct disorder, delinquency, and bully or victim of bullying. It is of utmost importance that we better understand what may be developmentally different about boys and girls in our current time in history (e.g., Duckworth & Seligman, 2006; Rose & Rudolph, 2006; ElseQuest, Hyde, Goldsmith, Van Hulle, 2006; Eisenberg, Fabes, Bernzweig, Karbon, Pouillin, Hanish, 1993). Over time, we have moved to expectations for children concerning control over physical activity, expression of emotion, and focus of attention while at the same time social policies demand more time away from the natural environment outside (e.g., recess and sports cut from programs, fear of abduction if children are outside, etc.) An online survey with demographic items and items concerning the external control of boys as well as boy's own self regulation will be made available to psychology students who can participate in the research for extra credit in various psychology classes. In addition, items will be asked concerning college students' attitudes towards gender and school. Gender and items concerning gender bias will be used as the independent variables and attitudes towards school performance will be the dependent variables. The data is correlational rather than experiemental. We will do multiple regression to explore consistency in patterns of gender differences that may relate to boys' current difficulties with school.

Presentation Index: H2 Time: 9:20 a.m.
Department: Psychology Project Sponsor(s)
Student Presenter(s): Williams, Casey; Schlegal, Craig; Chiang, Jessie DeVoe, Marlene

Identifying Emotions Under Cognitive Load

Psychologists have long been interested in the interplay between cognition and emotion. Scherer (1999) demonstrated that appraisals of emotion evolve over time and that people seek particular kinds of information in a specific order to determine emotion. If such appraisal is necessary to determine emotion, what happens when this appraisal is disrupted? This study will identify the extent to which one's cognitive capacity is needed to make appraisals of emotion. In this experiment participants read 16 short stories developed by Scherer. To determine the extent to which one's cognition is involved in appraisals of emotion, some of the participants also had to remember a set of numbers for each story. There were three conditions: control (participants only identified the emotion experienced by the main character of the stories), high cognitive load (in addition to emotion identification, participants remembered five digits while reading the story), and low cognitive load (participants remembered two digits). Results and implications for the emotional appraisal process will be discussed.

Presentation Index: H3 Time: 9:40 a.m.
Department: Psychology Project Sponsor(s)
Student Presenter(s): Eickhoff, Aaron Buswell, Brenda; Valdes, Leslie

Public Relations Campaign for UTVS Television

UTVS television strives to provide St. Cloud State University students with the opportunity to participate in the various aspects of television production. As a representative body of students interested in television, UTVS aims to produce quality programming that is educational, informational and entertaining while being of service to the St. Cloud community. Extensive research (in-depth interviews, personal contacts, media review, focus groups and two surveys) revealed a general lack of awareness about UTVS as a student organization and of its television programming within the university and the St. Cloud community. The perception of UTVS was that it's an amateur channel. The audience didn't take its programming seriously or consider it a credible source of information. The UTVS members were perceived as intimidating, discouraging new members from joining the organization. The research findings guided the entire 12-month public relations campaign. The campaign development included: defining the key audiences to be targeted, planning marketing goals, objectives, strategies and tactics, communicating the campaign messages to the target audiences and evaluating the impact and implementation of the campaign.

Presentation Index: H4 Time: 10:00 a.m.
Department: Mass Communications Project Sponsor(s)
Student Presenter(s): Leyk, Candace Przytula, Tomasz

Session H	Psychology	Oak

Gaming and Attention

The most notable form of media in our present day that influences us is violent video games. One of the primary side effects of this form of media is aggression. Several studies (e.g., Bushman & Anderson, 2001) have been demonstrated a correlation between exposure to violent video games and aggressive behavior and or thoughts. For example, Bushman and Anderson (2001) found that there was a larger correlation between aggression and violent video games than condom use and sexually transmitted HIV. Little research has been done on whether these effects require participants pay sole attention to the video games. The current study explored this issue by having participants do something else while playing Quake. This study consists of two parts. First 100 students will be surveyed about their experience with different hobbies including gaming. From the survey, two groups will be created, an experienced video game player and a novice gamer. Half the participants will play Quake while responding when a tone is played. The remaining participants will only play the game. After an hour of playing, participants will answer questions about how aggressive they feel. The level of aggression should be higher for those who have more difficulty dividing their attention between two tasks (playing a video game and detecting a tone). In particular, it is predicted that expert gamers will score higher on Quake but that those who perform the secondary task of target detection will express more aggressive feelings. This difference should not occur for the novice gamers because they are already using more attentional resources to play the game. Implications for the relation between video games and aggression are discussed.

Presentation Index: H5
Time: 10:20 a.m.
Department: Psychology
Project Sponsor(s)
Student Presenter(s): Kerfeld, Russel
Valdes, Leslie

Session I	Geography II	North Glacier

Pollution in the Mountain Ranges of Nepal

Kathmandu's rivers' water can only be said to be clean at their source and river pollution has become a major problem in the valley. There are several factors contributing to the degradation in the quality of river water. Due to modernization, the building of concrete houses has started. People are taking sand from the rivers, causing them to become deeper. The land surface then slopes down, and waste products flow into the rivers. The major rivers of the valley, Bagmati, Bishnumati, and Tukucha are no longer the important natural resources that they once were. This is because of the mis-management of the drainage system of houses and local industries at a time of increasing urbanization. Even the outlets of hospitals flow directly into the rivers. The purpose of my thesis is to take a deeper look at these factors contributing to the water pollution of these three major rivers of the valley and what measures are being taken to avoid further declination in the quality of the rivers.

Presentation Index: I1
Time: 11:00 a.m.
Department: Geography
Project Sponsor(s)
Student Presenter(s): Khadka, Megha
John, Gareth

College Football Recruiting Patterns

Every fall when the college football season begins, all teams look forward to competing for a national championship or a bowl game. More than 80 players on each team share this goal, but not all come from the same place. My paper will discuss the geographical makeup of NCAA D-I football teams in terms of the hometowns of each player. It is my belief that most schools will recruit a higher percentage of their players from cities located closer to campus. This paper will breakdown all 2004 NCAA D-I football teams to find patterns that support the theory of recruiting "closer to home." Besides statistical evidence, other background information will be provided to gain insight into reasons athletes choose the school they do. These range from proximity to home, school prestige, academic excellent and playing time. Coaches also have a large influence on player's decisions. What does this all mean? The results show that most schools do in fact recruit a majority of their players locally. There are other schools that do not follow this pattern, but there are logical reasons for this. Future improvements would involve analyzing rosters over a longer time period to see if recruiting patters stay consistent or if they change.

Presentation Index: I2
Time: 11:20 a.m.
Department: Geography
Project Sponsor(s)
Student Presenter(s): Vogt, Matthew
John, Gareth

Session I	Geography II	North Glacier

Effect on Prices of the Attributes of Sailing Boats: A Hedonic Prices Approach

This article examines the effect on price of different characteristics of sailing boats in the nautical segment of travel and tourism industry. The effect on price is estimated under the hedonic function by means of ordinary least squares model (OLS), specifically log linear model, as the data used in study are cross-sectional. Some 10,791 prices were gathered from approximately 464 sailboats from adriatica.net, a web based site for renting travel/tourism products in Croatia. This study found huge price differences between longer and shorter sailing boats, coupled with differences in rental prices depending on the location and boat type. Other attributes which seemed to have a significant effect on price were ln(length), the boat's age, Global Positioning System (GPS), number of cabins, fuel capacity, engine power, and gas cooker. Additional attributes of focus were the region of Central Dalmatia, and the sailing boat brand Bavaria. The results could assist charter companies as a useful instrument in pricing and investment strategies.

Presentation Index: I3
Department: Geography
Student Presenter(s):
Sipic, Neven

Time: 11:40 a.m.
Project Sponsor(s)
Baker, Randal

Effectiveness of Geography Education

We have all been in classrooms learning about capitals and rivers. But how much do our peers know about fascinating landscapes, diverse cultures, or exotic climates? By testing at the middle scool, high school, and college levels we intend to find out if our society recognizes these parts of our lives. After school is let out how much of a roll does television, peers, and activities have to do with our knowledge of geographic information? We aim to find out just how much the average student knows about the incredible field of geography. Results pending as of March 1 2007.

Presentation Index: I4
Department: Geography
Student Presenter(s):
Reed, Bryan

Time: 12:00 p.m.
Project Sponsor(s)
John, Gareth

Session J	Biochemistry	Oak

Activated Carbon as an Option for Water Purification

With the increased public awareness of the safety of drinking water, more affordable and environmentally friendly options for water purification are increasingly in demand. Activated carbon (AC) may prove to be an exceptional choice to satisfy this demand. AC can be manufactured to significantly reduce the number of contaminants in water through two processes. Contaminant molecules can either become trapped in the pores of the surface of AC, or they may become chemically bonded to the AC. The pore size of the AC becomes important to determine what size molecules can successfully be trapped. One also needs to consider how the pore size will slow the time of filtration by increasing the time required to travel through the filter. Activated carbon may prove to be economically advantageous because there are processes that can clean off the surface and thereby "recycle" the used AC. There are also environmental waste materials that can be used to manufacture AC (industry renewable organic waste), which could reduce the price of this product by removing its dependence on coal (a non-renewable fossil fuel). Recently, materials such as peanut shells, softwood bark residues, and sugarcane have been used to produce AC with properties similar to commercial coal-based products.

Presentation Index: J1
Department: Chemistry
Student Presenter(s):
Krekelberg, Elizabeth; Michalski, Kathryn

Time: 11:00 a.m.
Project Sponsor(s)
Sadrai, Mahin

Session J	Biochemistry	Oak

Synthesis of Ethylene Glycol Ether Aldehydes and Their Enzymatic Oxidation by Human Aldehyde Dehydrogenases

Ethylene Glycol Ethers (EGEs) are widely used solvents in industrial and household products such as paints, detergents, aerosols and inks. Exposure to EGEs is shown to result in various toxicities including carcinogenesis. Metabolism of EGEs parallels metabolism of ethanol, i.e., EGEs are oxidized to its corresponding aldehyde form via alcohol dehydrogenases and the aldehyde is converted to its corresponding carboxylic acid, by aldehyde dehydrogenases (ALDHs). The EGE aldehydes have a short shelf-life. Accordingly they need to be synthesized when needed. We have recently completed the synthesis, purification, and characterization of several EGE aldehydes. This was accomplished via a Swern oxidation. They were purified by vacuum distillation and characterization was by NMR and GC-MS. There are 17 human ALDHs. Which of these efficiently catalyze oxidation of EGE aldehydes is now being established via the purification of most common ALDHs, viz., ALDH1A1, ALDH2, ALDH3A1, ALDH5A1 and ALDH7A1.

Presentation Index: J2
Department: Chemistry
Student Presenter(s):
Gross, Aaron

Time: 11:20 a.m.
Project Sponsor(s)
Sreerama, Lakshmaiah

MK57 Vertical Launch System Void Composite Study

BAE systems has a vertical launch system that requires an ablation shield made with composite panels. They are bonded to a metal substrate and to other composite panels. During the lay up process, air can be trapped and a void condition results. During this study, Non-Destructive Testing (NDT) methods of ultrasound, resonance ultrasound spectroscopy, radiography, bond-line testing, acoustic emission, and thermography were tested and/or researched to provide accurate, reliable, and repeatable process for void detection and identifying the process variables that contribute to the existence/occurrence of these voids. The NDT method of Thermography was able to detect the presence of anomalies located in provide composite samples. The significance of this research study is to aid in the creation of the MK57 Vertical Launch System specifications manual.

Presentation Index: J3
Department: Mechanical and Manufacturing Engineering
Student Presenter(s):
Melsha, Maria; Thell, Alex

Time: 11:40 a.m.
Project Sponsor(s)
Miller, Kenneth

Session K	Social Sciences II	Lady Slipper

Positive Contributions from Latino Entrepreneurs and Professionals

This research identifies the social and economic contributions made by the Latino community in the Saint Cloud area and in Central Minnesota. This is an interview based research of which the sample is compound by professionals and business owners. The focus is on the social and economic contributions and assets along with networking, contributions to cultural diversity, and community involvement. Among the findings there is a discussion about the challenges that these Latinos have faced to reach the positions they hold today.

Presentation Index: K1
Department: Human Relations and Multicultural Education/Sociology and Anthropology
Student Presenter(s): Segura, Monica

Time: 11:00 a.m.
Project Sponsor(s)
Kellogg, Polly; Havir, Linda

The Christian Right and the Double-Edged Sword of Politics

This political science honors thesis is an analysis of the evolving relationship between the Christian Right and the Republican Party from the 1970s to the present. Specifically, it looks at changes in the positions of the Republican Party on the issues of abortion, gay marriage, and prayer in schools in an attempt to see when the Christian Right has had the most influence on the party. To evaluate the changing positions of the Republican Party concerning these issues, this thesis examines the evolution of the Republican Party Platform, the voting records of Republican lawmakers, and the voting behavior of Republican voters.

Presentation Index: K2
Department: Political Science
Student Presenter(s): Schlabach, Gabriel

Time: 11:20 a.m.
Project Sponsor(s)
Haeg, Claire

Session K	Social Sciences II	Lady Slipper

Aging Women and Body Image

The purpose of this paper is to review prior literature regarding body image and aging women, and apply appropriate theories. The theory used in this project is that of symbolic Interactionism. This theory was found to be the most common within existing research. The theory was then applied to a life history of a seventy year old, white middle class woman. The theory proved to be present in this life history. The researcher's intent was to get a better understanding of literature on body image and aging women and apply appropriate theories to a life history.

Presentation Index: K3
Time: 11:40 a.m.
Department: Sociology and Anthropology
Project Sponsor(s)
Student Presenter(s):
Hope, Liddy
Erickson, Shannon

Analysis of Risk Perceptions on the Internet Purchase Decision

Literature in advertising and information systems suggests that advertising in both traditional media and the Internet is either easily ignored by the audience or is perceived as having a little value. Yet the Internet has become one of the most convenient media for many advertisers as well for the consumers. The unique property of the Internet being an accountable and measurable medium has enabled performances based pricing models. This paper is an exploratory research that examines the trends of perceived risk and consumers' buying behaviors over time. It also studies different kinds of perceived risks involved in purchasing products and services on the Internet. Drawing analysis from diffusion of innovation and determinism theoretical framework, the psychology of consumers' consumption level and the effect of perceived risk are discussed in this paper. It further reviews different research studies that focused on perceived risk in traditional purchasing situations as well the risk of security in online transactions. It partly examined the conditions under which consumers' perceived risk can be a strategy to protect their economic freedom from potential sellers. A comparative study about the consequences and effects of different risks consumers' encounter for instance financial risk, physical risk, and performance risk is discussed in this paper. It provides understanding of consumers' behavior and also examines consumers' perception on the values of different types of online advertising. It explores the basic concepts of perceived differences between the online advertising and traditional advertising for both brand building and directional purposes as a measure to reduce risks.

Presentation Index: K4
Time: 12:00 p.m.
Department: Mass Communications / Ethnic Studies
Project Sponsor(s)
Student Presenter(s): Juma, Peter
Heinrich, Lisa; Fish, Marjorie; Lehman, Christopher

Session L	Humanities	South Glacier

Chocolate: The Food of the Gods

This paper examines a food that has captivated millions, since it was first brought to Europe from the Americas in the fifteenth century. Since then, chocolate has spread throughout the world and taken on new forms, stealing the hearts of people and becoming, for many, an obsession. Chocolate: Food of the Gods examines the history, production, and varieties of chocolate. It also discusses the many uses of chocolate, from the creatively useless to the deliciously beneficial.

Presentation Index: L1
Time: 11:00 a.m.
Department: Foreign Languages and Literature
Project Sponsor(s)
Student Presenter(s):
Splittgerber, Lisa
Wiant, Molly

Food Coloring in the United States

Adding color to food is a highly regulated industry in the United States. People often associate food dyes and additives with something negative, but looking closely at the matter will reveal it to be a process that is necessary to satisfy the wants and needs of the consumer. Claimed adverse effects, processing techniques, and regulations are all things that people "kind of" know about, but with more information, one can develop an educated opinion about the additives that we—as consumer—consume everyday.

Presentation Index: L2
Time: 11:20 a.m.
Department: Foreign Languages and Literature
Project Sponsor(s)
Student Presenter(s):
Splittgerber, Lisa
Loch, Alex

Session L	Humanities	South Glacier

Una historia de Chile - la política y la gente

This research paper is an exploration of Chilean society and a short political history. It describes current Chilean society through an analysis of political participation. Between the years 1973 and 1990 Chile experienced a dictatorship. After giving a brief history of Chilean politics the paper moves on to describe how civil society was affected by this era & the current political movements. It is important not to forget about the people that create these movements, their culture and beliefs. It is also worth mentioning some historical figures that perhaps help us to understand the political thought process throughout Chilean history.

Presentation Index: L3
Time: 11:40 a.m.
Department: Foreign Languages and Literature
Project Sponsor(s)
Student Presenter(s):
Triana-Echeverria, Luz C.
Bourke, Molly

German Translations from the Stearns County Historical Society

This is a translation of documents from German to English from the Stearns County History Museum. The documents, from 1912 through 1925, come from archives of the old central Minnesota German newspaper, *"Der Nordstern"*. Publication was halted in the early thirties because of the effects from a generational shift of anti-German sentiment following the First World War.

Presentation Index: L4
Time: 12:00 p.m.
Department: Foreign Languages and Literature
Project Sponsor(s)
Student Presenter(s):
Mueller, Isolde
Gunderson, Allen

Session M	Science and Engineering I	Mississippi

Animal Avoidance Systems for Airports

The goal of the research being conducted is to create a workable link between available technology and modern understanding of animal hearing capabilities. The information gathered will be used to form a device that keeps animals away from active airports, without the need of a physical barrier such as a fence. The idea is based on a sound repellant system to "spook" animals using sounds out of the range of human hearing but within the range of animals'. This will be derived from known professionals in the field of airports or animal specialists. If this idea comes to be a reality, then hopefully the Federal Aviation Administration will implement the changes into current airports to enhance the safety for all pilots. The issue of animal collisions is a growing and current problem around the world and hopefully we can change that.

Presentation Index: M1
Time: 11:00 a.m.
Department: Aviation
Project Sponsor(s)
Student Presenter(s): Dauphin, Alexander
Aceves, Robert

Runway Incursion Avoidance

Runway incursions are a major problem today in the Aviation industry and are a very large source of aircraft accidents and incidents. The largest sources of runway incursions are pilot deviations. These pilot deviations occur when pilots inadvertently disobey a clearance from air traffic control which results in either an aircraft incident or accident. To combat this problem, we have formed a proactive idea to reduce these occurrences and allow the air transportation system to flow more smoothly. Our system utilizes simple laser detection equipment that is found in automatic garage door sensors. This detection sends a signal to both the flight deck of the approaching aircraft and the air traffic control tower when the aircraft is taxiing to a hold short line. We believe that with our extensive research on this problem, we will be able to offer a possible combatant to reduce the number of pilot deviations in the air transportation system.

Presentation Index: M2
Time: 11:20 a.m.
Department: Aviation
Project Sponsor(s)
Student Presenter(s): Altmann, Nathan; Bryer, Zachary; Dew, Michael
Aceves, Robert

Session M	Science and Engineering I	Mississippi

Planar Biaxial Test System

The biomedical field is an ever-growing industry that is constantly looking for new technologies and methods for improving life. One major area of research involves reconstructive tissues for the heart and other valves of the human body. It is extremely important to know the ability of the new materials to withstand stresses similar to those of the biaxial stress state found within the body, in addition to the tissue's life. Planar biaxial testing is necessary to evaluate the new material properties for these samples. There are similar biaxial systems already in use around the globe; however, they are very expensive and may contain components which are out of date. For this reason, a project has been proposed for an updated planar biaxial test system to determine the mechanical properties of synthetic and natural tissues. The objective of this project is to design and build a fully functional, true planar biaxial test system including actuators, sensors, grips, and controls. Verification of system performance, installation, and training will also be part of this project.

Presentation Index: M3 Time: 11:40 a.m.
Department: Mechanical and Manufacturing Engineering Project Sponsor(s)
Student Presenter(s): Plumski, Duane; Brown, Rebecca; Tschida, Adam Covey, Steven

Parameter Influence on Reverse Phase Single Drop Micro-extraction

Conventional methods of single drop micro-extraction constitute the extraction of a nonpolar analyte (such as chloroform or a pesticide) from a polar media, typically water, into a microliter drop of nonpolar solvent such as octane submerged in the aqueous solution on the tip of a syringe. However, reverse phase solvent micro-extraction (which has not been reported in the literature) involves the opposite extraction - a polar analyte from a nonpolar solvent; for example ethylene glycol from octane into a microliter drop of water. The need for developing this method resides in the quick determination of antifreeze in motor oil, seen in a cracked block or more commonly a blown head gasket. The extraction time optimization was executed using a 2.5 ml vial filled with 1 ml of the solution, while a single drop of water is used as the extraction solvent. Other parameters of interest are the drop volume, and temperature. Stir speed is also a parameter of interest, but due to the limited range of speeds, the parameter will be ignored in this study. In characterizing this method, a curious anomaly is observed when the hydrophobic octane occasionally wets the inside of the needle and prevents the water drop from entering the syringe as the plunger is retracted. Careful drying of the syringe between trials is necessary to avoid this problem.

Presentation Index: M4 Time: 12:00 p.m.
Department: Chemistry Project Sponsor(s)
Student Presenter(s): Resman, Nate Jeannot, Michael

Session N	Activism	North Voyageurs

1995 M.E.Ch.A. Student Hunger Strike

This panel is a presentation by six student researchers of the ETHS 401 class who are collaborating in an examination of the 1995 M.E.Ch.A. Student Hunger Strike at St. Cloud State University. As was the case on most predominantly white universities in 1995, students of color at SCSU faced racism, hostility and alienation on a daily basis. In an effort to address racism and improve the campus climate of SCSU, M.E.Ch.A. students, in solidarity with other students of color organizations and white student allies, initiated a hunger strike on Cinco de Mayo (May 5), 1995. At the heart of the hunger strike were 13 demands that were specifically aimed at improving conditions for students of color at SCSU. After nine days the students ended their hunger strike when SCSU administrators agreed to meet their demands. Student researchers in this panel will investigate the salient events leading up to the hunger strike and examine the reasons why students choose the "hunger strike" as a method of protest. They will also research the progress on the 13 demands and will investigate the extent to which each demand was met or was not met. Part of the research that students will be conducting is to determine if conditions have improved for students and faculty of color at SCSU and to explore if any improvement to the campus climate can be attributed to the hunger strike. Students research methodologies includes research of archival materials, examination of secondary resources and opinion surveys of students, faculty, and staff.

Presentation Index: N1 Time 2:00 p.m.
Department: Ethnic Studies Project Sponsor(s) Casanova, Steve
Student Presenter(s): Swanberg, Breanna; Heckendorn, Karyn; Lor, Fong; Montanez, Melissa; Ouro-Sama, Azolo; Zeleke, Hermon

Session O	SCSU Survey	South Voyageurs

SCSU Survey Coverage of Previous Surveys

Student directors of the SCSU Survey will present findings from previous student and statewide surveys, including the 2006 Spring Student Survey and the 2006 Annual Fall Statewide Survey. Topics presented will include: Problems facing the State of Minnesota, opinions concerning the Iraq War, Women in Politics, the University of North Dakota's Fighting Sioux mascot, and SCSU student gambling behavior as compared to gambling behaviors exhibited by the overall population of Minnesota adults. Additionally, we will share insights on survey methodology used to conduct public opinion research.

Presentation Index: O1
Time 2:00 p.m.
Department: Political Science/ Statistics and Computer Networking
Project Sponsor(s)
Frank, Stephen; Wagner, Steven; Robinson, David
Student Presenter(s):
Lohrman, Sara; Bromelkamp, Matt; Floersheim, Will; Swanson, Jackie; Ehlinger, Tim; Speich, Brittany; Amundson, Sarah; Loehlein, Mike; Helm, Renee; Perish, Gayle;

Session P	Science and Engineering II	North Glacier

Modeling Changes in Basketball Performance by Repeated Measures Design

Our study is an investigation of the effects of various aspects of coaching on performances of some players in the National Basketball Association (NBA) during the 2005-2006 season. The study uses data from the league. Our sample comprises the scoring records of five players from twelve teams. Variables modeled and studied include Conference, Manager, Practice and Motivation. Conference has two levels namely East and West. Manager has twelve levels representing all the teams. Practice and Motivation were both set at two levels on which the final result of an individual game depends. The sample of Western conference teams includes the Denver Nuggets, the Los Angeles Lakers, the Los Angeles Clippers, the San Antonio Spurs, the Phoenix Suns, and the Dallas Mavericks. The sample of Eastern conference teams consists of the Washington Wizards, the Miami Heat, the New Jersey Nets, the Cleveland Cavaliers, the Detroit Pistons, and the Chicago Bulls. Measurements were made over the first fifty games; it is assumed that players might have carried over effects of previous coaching methods into subsequent games. Hence, the analysis was conducted using Repeated Measures Designs to minimize the variations due to the differences that exist between the players, and also to isolate the effects of the different aspects of coaching. Repeated Measure Design essentially allows researchers to conduct multiple tests and to measure the effects of some factors on subjects while controlling for the variations among those subjects. We first study individual teams and the separate conferences investigating coaching methods across the twelve teams, and the impact a manager could have on his players' performances.

Presentation Index: P1
Time: 2:00 p.m.
Department: Statisitics and Computer Networking
Project Sponsor(s)
Onyiah, Leonard
Student Presenter(s):
Abba, Yannick

Anemometer (Wind Speed and Direction Detector)

The invention is a sensor pod for mounting on the surface of the fuselage of an aircraft. This sensor pod will accurately measure the humidity, pressure, temperature, and wind velocity. This invention will describe the development of a small, robust, and reliable ultrasonic wind speed and direction indicator, known as an anemometer. The ultrasonic technology is based on time–of–flight operating principle, which provides vector measurement of air velocity, given the dimensions and geometry of the pairs of sensors. Three pairs of sensors are used such that air velocity can be derived along orthogonal axis, and hence the air speed and direction can be computed. The method of measuring is based on the inverse transit time difference measurement of ultrasonic pulses on an upstream or downstream of the airflow.

Presentation Index: P2
Time: 2:20 p.m.
Department: Electrical and Computer Engineering
Project Sponsor(s)
Petzold, Mark
Student Presenter(s):
Balde, Abdourahamane; Patel, Pinkle; Svare, Bruce

Session P	Science and Engineering II	North Glacier

Proposed Design and Next Generation Application of Airport Surface Safety Systems

This report focuses on the design of an independent surveillance and alerting system for the prevention of runway incursions at airports within Class D, Class E, and Class G airspace. Human factors and existing airport surface infrastructure are heavily considered. Through a qualitative survey and interviewing process directed at pilots, air traffic controllers, and airport operators, the authors compiled necessary data to optimize a design that is practical for commercial application and is congruent with the goals of the Federal Aviation Administration (FAA).

Presentation Index: P3
Time: 2:40 p.m.
Department: Aviation
Project Sponsor(s)
Student Presenter(s):
Aceves, Robert
Walker, Cristl; Nichols, Thomas

Biometric: How Safe Are You?

Have you been to a grocery store lately? Apart from the credit/debit cards and personal checks, they have another option – the "Touch and Go". This is just one example of a biometric device which is gaining popularity ever since the terrorist attacks of 9/11. It promises to maintain our identities without the inconvenience of carrying identity (ID) cards and/or memorizing passwords. Biometric authentication includes the use of technology that examines the physical and behavioral traits of individuals for the purpose of validation. Some examples of such traits are fingerprints, iris, facial patterns, signature, gait and typing patterns. However, the world of biometrics has not been spared from identity theft and even though carrying ID cards and memorizing passwords can be inconvenient, the questions that arise are, "Is biometric doing what it is supposed to do?" and "How safe are we?" This paper is going to discuss the concept, traits, advantages, disadvantages and concerns of the biometric system. Additionally, multibiometric system and the problems of conventional biometric authentication will also be discussed. Further, solutions to the existing problems will be suggested by making proposals to come up with better and more protected systems that will not only be superior to the current ones but also more secure.

Presentation Index: P4
Time: 3:00 p.m.
Department: Business Computer Information Systems
Project Sponsor(s)
Student Presenter(s):
Schmidt, Mark
Kumar, Vijay

Session R	Performance	Little Theatre

A Surprise Play From the Siglo de Oro

This is a surprise play from the Spanish Siglo de Oro, Spain's Golden Age (roughly 1580-1680,) when the Spanish Empire was at its height. At this time Spain held the Americas, parts of Italy and the Netherlands and it was said that the sun never set in her empire. In the Siglo de Oro, theater was the most popular art form as much of the population could not read; even bigger than television or movies today. The title of the piece will not be announced until the performance (therein lies the first surprise!) The play will be performed in an older form of Spanish by students of Spanish 432 and a translation will be provided. The students did not know they would be performing this piece (surprise number 2!) and some of the actors may have to wear tights (surprise number 3!) in keeping with the costume of the day. We hope you enjoy it!

Presentation Index: R1
Time: 2:00 p.m.
Department: Foreign Languages and Literature
Project Sponsor(s)
Student Presenter(s):
Splittgerber, Lisa
Asquith, Daniel Boerger, Mitzi; Bourke, Molly; Cinker, Kari; Danielson, Trevor; Denny, Matthew; Holthaus, Bethanne; Huttes, Corrin; Isaacson, Kelly; Kelley, Joseph; Kuschel, Russell; Ledeboer, Rebecca; Litterst, Graham; Lumley, Ryan; Lynch, Katherine; Martinez, Andres; Mikolchak, Lisa; Nguyen, Emily; Olson, Erin; Palin, Kelsi; Palmquist, Valerie; Priem, Jennifer; Semmler, Jana; Thornton, Makenzie; Williams, Nicole; Dahl, Karen—violin; Athman, Rachel—viola; Cansen, Amanda—cello; Allen, Carissa—guitar; Landon, Kara—vocals; Swantz, Josh—vocals/ composition

Turkey's Membership to the European Union: An Image Problem and PR Challenge

Turkey's membership to the European Union has been a controversial issue and one of Turkey's foreign policy problems. The door to EU membership remains shut on Turkey despite domestic reforms as a requirement to join the EU. A European sense of distrust has always been present during EU talks on Turkey due to several historical and contemporary factors, among which is an image problem toward Turkey. EU's frequent rejections to Turkey's membership are derived from the two sides' lack of understanding European and Turkish values. The research study shows whether or not an image problem is the barrier to Turkey's membership. It suggests a public relations plan for Turkey in an attempt to win the hearts of EU governments. Interviews were conducted with Turkish citizens to gain more insights of the issue as well as to find the effective public relations plan to launch. It also shows the importance of a public relations effort, based on contemporary and historic events that will win EU membership. The significance of this research is that a Turkish public relations effort derived from a historical context is possible to create a common ground and understanding between the EU and Turkey and, therefore, to accept Turkey as a member of the EU. A public relations campaign that is derived from Turkey's and EU's common values and history is more likely to facilitate and speed up Turkey's membership to the EU. The campaign will focus on the role of public relations specialists with a specific message to promote (message consistency) that will win the EU's support for Turkey. In-depth interviews were conducted with Turkish citizens in Turkey and the United States. Since the study focuses on the Turkish side of the EU membership, insights and opinions from Turkish citizens were helpful in knowing obscured aspects of Turkey's membership to the EU.

Presentation Index: S1 Time: 2:00 p.m.
Department: Mass Communications Project Sponsor(s)
Student Presenter(s): Bashir, Manaf Heinrich, Lisa

Quality Survey at St. Cloud State University

Quality in education is important to the student, the institution, future employers, and other institutions. In today's global marketplace, a definite Quality Improvement program must be in place to ensure organizational survival and growth. This study seeks to present a benchmark of the Quality system at St. Cloud State University against common elements of AQIP and the ISO 9000: 2000 requirements. A mini-audit of the College of Business was conducted as a cluster-sample to project the status of the university's Quality program. The purpose is to establish a basis for continual improvement of SCSU's Quality effort.

Presentation Index: S2 Time: 2:20 p.m.
Department: Management Project Sponsor(s)
Student Presenter(s): Redington, Josh; Kelsey, Sean Polacco, Alex

Integrative Learning in Teams

Integrative learning is the ability to connect information from various sources and experiences, and apply it to new situations. In recent years working on teams has become an important part of the education process. Successful teamwork draws upon diverse skills and combined knowledge of the members. Integrative learning and subsequent teaching processes are necessary to ensure student success in teamwork and goals. Adopting integrative learning into teams involves removing individual rewards from the team, defining and building the character of team members, and directing the team towards a single, unified goal. From a student's perspective, adopting an integrative learning style into teams is seldom done in the college setting. Students' drive for individual success severely hampers their ability to adopt an integrative learning style; however, integrative learning is crucial to future success.

Presentation Index: S3 Time 2:40 p.m.
Department: Management Project Sponsor(s)
Student Presenter(s): Polacco, Alex
Pegg, George

Session S	Communications	Lady Slipper

Are Women More Objectified Than Men?: A Content Analysis of Feature Images in Maxim Magazine

Based on the existing literature, female models are more likely than male models to be portrayed as sexual objects and to be objectified in advertising, in women's lifestyle magazines and in men's lifestyle magazines. Moreover, white models are more likely to be depicted in all three media previously reported. Research is lacking in the depiction of women in men's lifestyle magazines. The content of the most popular men's lifestyle magazine, Maxim, were analyzed to determine if feature imagery portrays sexualized and objectified models. Utilizing the work of Jean Kilbourne as a theoretical backdrop, which presents the concepts of the tyranny of the beauty ideal and the dismemberment of women's bodies in advertising, female imagery in Maxim was compared to male imagery. The content analysis was also coded for race to determine if white models are depicted more often than non-white models. A coding scheme was applied to test three hypotheses: 1) female models are more likely than male models to be depicted in the sex object role, 2) female models are more likely than male models to be objectified and 3) white models are more likely to be found than non-white models within Maxim. Findings from this study and areas for further research will be presented.

Presentation Index: S4
Department: Sociology and Anthropology
Student Presenter(s):
Jackelen, Tamarah

Time: 3:00 p.m.
Project Sponsor(s)
Davis, Tricia

Session T	All Disciplines	Ballroom

Comet 73P/Schwassmann-Wachmann 3: O(1D) and H2O Production Rates

In May 2006, comet 73P/Schwassmann-Wachmann 3 (SW3) made the closest approach (0.075 AU) to the Earth of a short period comet in more than 75 years. During the comet's 1995/1996 apparition it split into several fragments and, as of March 2006, SW3 was in eight major pieces. From May 1, 2006 through May 6, 2006 we performed a series of [OI] and NH2 (near 6300 Å) observations of the two brightest fragments, SW3-B and SW3-C, using the dual-etalon Fabry-Perot spectrometer that comprises the Wisconsin H-alpha Mapper (WHAM). At the time of our observations the Doppler shift of the comet was within a few km/s of the spectral resolving limit of WHAM (12 km/s), and great care was needed to isolate the blended cometary [OI] emission from the bright terrestrial [OI] emission line. In this poster we will discuss our analysis procedure and our preliminary total O(1D) production rates. Given the photodissociation of H2O and OH as sources of O(1D), we will also present an estimate of the H2O production rates for fragments SW3-B and SW3-C based on our WHAM O(1D) observations. This work was supported by the National Science Foundation's REU program and the Department of Defense's ASSURE program through NSF Award AST-0453442

Presentation Index: T1
Department: Physics, Astronomy and Engineering Science
Student Presenter(s):
Hall, Tanya

Time 3:00 p.m.
Project Sponsor(s)
Mierkiewicz, Ed

Discussion of an Anomalous Boulder and its Possible Origin in Chippewa County, Wisconsin

A boulder of sedimentary origin was unearthed in topsoil surrounded by sand in the NW ¼ of the SE ¼, Sec. 27, T 28 N, R 8 W Lake Wissota quadrangle in Chippewa County, Wisconsin. The complete description of the boulder will be included along with information from local geologic resources and field work in an attempt to determine its origin. Two possible origins to be discussed include glacial or as part of a fractured Cambrian bedrock. Data to be included will be stratigraphy based off well logs, local outcrop descriptions, and sand descriptions from well logs. The Cambrian bedrock in the study area is Mt. Simon sandstone which is fine to coarse grained, light brown to yellow quartz, white to green siltstone and shale, thinly to thickly bedded, sandstone displays cross beds and parting lineations; bedrock is exposed at surface. This area was glaciated between 30,000 to 300,000 years ago between the Illinoian to pre-late Wisconsin.

Presentation Index: T2
Department: Earth and Atmospheric Sciences
Student Presenter(s):
Normand, Kevin

Time: 3:00 p.m.
Project Sponsor(s)
Pound, Kate

Taratogenic Effects of Ethylene Glycol Ethers on *Xenopus Laevis* Development and Role of Aldehyde Dehydrogenases in Determining Taratogenicity

Aldehyde Dehydrogenases (ALDHs) are polymorphic, accordingly they catalyze oxidation of both biogenic and xenobiotic aldehydes. Ethylene glycol ethers (EGEs) produce aldehyde intermediates during their metabolism. *Xenopus laevis* and other aquatic animals are exposed to these EGE aldehydes. The morphogenic changes in xenopus development, ALDH expression and role of these ALDHs in oxidation of EGE aldehydes is not known, therefore the purpuse of this research project is to profile ALDHs in xenopus and their ability to catalyze oxidation of EGE aldehydes. We have collected xenopus at differing stages of development and ALDH has been quantified. We have also exposed xenopus embryos to EGE and EGE aldehydes to study the teratogenic effects of early exposure to the chemicals.

Presentation Index: T3 Time: 3:00 p.m.
Department: Chemistry Project Sponsor(s)
Student Presenter(s): Sreerama, Lakshmaiah
Petersen, David; Piotrowski, Aaron

Searching for Key Indicators of Well-Being of Fathers and Families

The purpose of this report is to examine key indicators associated with fathers and their families in an attempt to gauge the strengths and shortcomings related to fatherhood issues. The ultimate goal of this project was to facilitate a compilation of facts and figures to be used by legislatures, services providers, educators, and others involved with the implementation of policies pertaining to fathers and their families. The report contains an exhaustive literature review of census data, government agency data, and information from organizations collecting fatherhood information. The report consists of three sections, part one, explores the facts and figures extracted in the literature review, part two, contains information collected from a survey conducted involving father involvement and a survey of service providers to fathers, and lastly in part three recommendations were made to better track and assess the needs of fathers and their families.

Presentation Index: T4 Time 3:00 p.m.
Department: Child and Family Studies Project Sponsor(s)
Student Presenter(s): Palm, Glen
Niehoff, Loren

Salivary Cortisol, DHEA and Testosterone Levels in Teenagers During High Stakes Competition

Emotional and behavioral changes are associated with the outcomes of high-stakes competitive events. Few studies have determined these changes in teenagers. Further, the biological bases of these changes are not well understood, but have been speculated to involve hormonal changes. In the current study, we determined changes in salivary cortisol, dehydroepiandosterone (DHEA), and testosterone that are associated with winning or losing in a high-stakes competition. Sixteen teenagers, consisting of eight boys and girls of similar ages, participated in the study with hopes of winning an unnamed prize. The subjects played a Nintendo game in a round-robin fashion until a winner emerged. Saliva samples were obtained fifteen minutes before, at the start, halfway, at the end and fifteen minutes after the end of every round of competition. Cortisol, DHEA and testosterone concentrations were determined in salivary samples using radioimmunoassays. Baseline salivary testosterone was dependent on gender (1435 ± 316 pg/mL in boys and 187± 316 pg/mL in girls; p= .0113). Testosterone levels tended to increase in winners (p=0.08) and this trend was more prominent in teenage boys. Baseline salivary DHEA levels were similar between boys and girls (1652 ± 384 pg/mL in boys vs. 1412 ± 348 pg/mL in girls) and salivary DHEA was not affected by either winning or losing. Salivary cortisol tended to be higher in girls relative to boys and winners tended to have higher cortisol than losers. These results confirm that gender differences in testosterone can be measured by salivary assays. Further, the almost significant effect of winning on increasing testosterone but not DHEA concentrations suggests that changes in the earlier but not the latter hormone may account for behavioral changes usually associated with competition in teenagers.

Presentation Index: T5 Time: 3:00 p.m.
Department: Biological Sciences Project Sponsor(s)
Student Presenter(s): Abass, Victoria Gazal, Oladele

Global Warming

This research was done to discover the behavior, knowledge and belief system of SCSU science students in regards to global warming. Many individuals do not dispute the presence of this warming. What I believe needs to be addressed is the perception that surrounds global warming. The lack of urgency and complacency that some people exhibit when questioned about the subject of global warming and the underlying issues, are a mystery I would like to solve. The population sample was SCSU science students of which I was interested in collecting opinions for my survey. The variables being examined were commuting/driving habits, knowledge on global warming programs and beliefs on causes and solutions to global warming. The materials and methods for this research involved the use of many web sites and links mostly of which were found on the Kare 11 web sites. This proved to be useful in cross referencing various articles on research, opinion, news related subjects and viewpoints both political and social. Other searches included key words such as debates on global warming and specific scientist names. Please see the bibliographies for reference site locations located at the end of the reports. A survey was taken over a few days during spring semester in the halls of the Wick science building. One hundred students were surveyed on what they thought about the effects of global warming and their knowledge on the matter. An attempt was made to survey earth science students however other science major students were also sampled to reach the one hundred mark. The following results are given on St. Cloud State students perceptions of global warming.

Presentation Index: T6 Time: 3:00 p.m.
Department: Biological Sciences Project Sponsor(s)
Student Presenter(s): h Minger, Mark
Dickmeyer, Elizabet

Body Modification and Self-Harm

How do we define self-harm? Does the definition allow for therapists to see and understand other actions that could be considered self-harm? Are we limited by the assumed definitions that are available? Are people going without treatment, because their act of self-harm is beautiful? This research looks at the ways in which body modification can be a form of self harm. Following feminist perspectives, the research is based off of interviews and open-ended surveys, and it dives beyond the skin of body modification and looks at the emotional and physical reactions to body modification, and how that reaction can be related to acts of self-harm. This work is an attempt to open the lines of discussion on self-harm, and allows participants to regain their voice on a silent topic.

Presentation Index: T7 Time: 3:00 p.m.
Department: Sociology and Anthropology/Women's Studies Project Sponsor(s)
Student Presenter(s): Warns, Courtny Scheel-Keita, Elizabeth; Berila, Elizabeth

Degeneracy Pressure in a Quark-Gluon Plasma

An area of research that is currently motivating great interest is the study of high energy nuclear physics. Using particle accelerators such as the one at Fermi National Laboratory near Chicago, IL, physicists use electric fields to accelerate heavy nuclei to speeds approaching the speed of light and then magnetic fields to force them to collide in front of a detector. Much of the kinetic energy is deposited in a very small volume where quarks (elementary particles inside of protons and neutrons) exist very briefly separate from one another in what is called a quark-gluon plasma. The quarks recombine into stable particles that can be observed using different types of detectors. This methodology was used to find the top quark and many other exotic particles. Current models involve pressures that ultimately predict velocities for the particles ejected from the collision to be about one half of the velocities actually observed. This means that there must be something adding to the pressures of these plasmas that has not been included in the models. Three models of temperature and mass distribution in a quark-gluon plasma were used in our research to find the contribution to pressure from degeneracy effects. Quantum statistics were used to develop the degeneracy pressure's dependence on temperature, mass, Fermi energy, and number of degrees of freedom in the plasma. Results showed a significant contribution to pressure from degeneracy in all three models for a range of temperatures and Fermi energies. For the most sophisticated model, the pressure at a temperature of 0.170 GeV and a Fermi energy of .903 GeV was found to be 3.6 GeV/fm^3. This pressure is greater then the thermodynamic pressure at this temperature.

Presentation Index: T8 Time: 3:00 p.m.
Department: Physics, Astronomy and Engineering Science Project Sponsor(s)
Student Presenter(s): Haglin, Kevin
Swanson, Joshua; Stephen, Horvat

Charge Carrier Mobilities of Semiconductor Materials Determined Through Time-of-Flight Measurements

In the last decade the interest in using organic crystals and conjugated polymers as semiconductor materials has been increasing. The speed of the charge carriers (electrons or holes) in organic semiconductor films is important to device performance (e.g. transistor switching speed). The charge carrier mobility is defined as how easily the carriers move through the material. An experimental technique used to study these mobilities is referred to as time of flight charge mobility measurements (TOF). In this technique a packet of charge carriers is created near the surface of the sample using a laser pulse of ultraviolet light. The charge carriers then will move across the sample under the influence of an applied electric field. The time it takes for this packet of charge carriers to move across the sample is proportional to the charge carrier mobility. By determining these mobilities we can infer the quality of the organic semiconductor devices. This can lead to improved design and synthesis techniques to enhance the carrier mobilities of the material. We report the results of ongoing efforts in characterizing the charge carrier mobilites using varying temperature conditions in organic semiconductor materials such as single crystals of tetracene and rubrene using TOF.

Presentation Index: T9
Time: 3:00 p.m.
Department: Physics, Astronomy and Engineering Science
Project Sponsor(s)
Student Presenter(s):
Lidberg, Russell

Pundsack, Thomas; Smith, Brandon; Haugen, Neale

Coral Reef Destruction

Florida's coral reefs are being destroyed by human activity at an alarming rate. Roughly one quarter of marine life use the coral reefs as their homes, and the reefs are of great economic and pharmaceutical value to the United States. We as humans know what is being done to destroy the reefs, and we know their value, yet little is done to prevent reef loss. The purpose of this study was to find what college students in St. Cloud, MN know about methods of reef destruction, the value of reefs, and how they personally feel about what should be done to save Florida's coral reefs.

Presentation Index: T10
Time: 3:00 p.m.
Department: Biological Sciences
Project Sponsor(s)
Student Presenter(s):
Simpson, Patricia

Litzinger, Erin

Welfare to Work: A Closer Look

With growing concern about the number of people staying on welfare, the federal government responded by implementing the "welfare to work" program. The goal of the program was to limit the amount of time an individual could stay on welfare by requiring the person to obtain employment and become self-sufficient. While it seems on the surface the program is helping people get jobs, the number of people staying in poverty and ultimately returning back to public assistance remains high. In an effort to examine the dynamics of why recidivism remained high, the Stearns-Benton Workforce Center enlisted the help of Community Counseling graduate students who were studying career development to help determine what barriers recipients of the Minnesota Family Investment Program (MFIP) face to obtaining employment that will keep them off welfare. The graduate researchers conducted semi-structured interviews with recipients of public assistance who were utilizing the services at the Stearns-Benton Workforce Center. In addition, interviews were also conducted with career planners assigned to cases to get a better understanding of the individuals who are trying to help MFIP individuals obtain employment. Upon completion of the case studies, the information was compiled to provide a summary to the Stearns-Benton Workforce Center of the information obtained during the interview process and potential barriers that could be faced by individuals in the MFIP program.

Presentation Index: T11
Time: 3:00 p.m.
Department: Community Psychology
Project Sponsor(s)
Student Presenter(s):
Jorgensen, Leeann

Ormson, Renee, Rach, Sarah

Effects of Black Cohosh (*Actaea Racemosa L.*) on Virgin and Pregnant Uterine Contractility

The herb *Cimicifuga racemosa* (Black Cohosh) has the potential to be used in treatment of premature labor or other gynecologic applications that might benefit from uterine quiescence despite its common use to induce or accelerate parturition. The objective was to test the effects of black cohosh on rat uterine contractile amplitude and frequency in virgin uteri with and without oxytocin (a known stimulator of uterine contractions), and in pregnant uteri. The rat uteri were weighed and placed in an organ bath to measure the spontaneous contractility of the smooth muscle. The determined doses of oxytocin were administered and the effects measured. The dose response to black cohosh was repeated in the presence of the drug with known effects. The shifts in responsiveness were analyzed to determine force and rate of the contractions and then statistically compared. This research would provide direction toward understanding the mechanisms by which this herbal extract acts, more informed regulation in the production of black cohosh pharmaceuticals, results in the development of new combined drug use for premature labor, and treating undesirable menopausal symptoms with fewer side effects.

Presentation Index: T12
Time: 3:00 p.m.
Department: Biological Sciences
Project Sponsor(s)
Student Presenter(s):
Tubbiola, Maureen
Lyon, Catherine

Remote Perimeter Access via Wireless Fingerprint Identification

Security of one's personal belongings and sensitive information is an important issue for most people. The current state of the world demands higher and higher levels of security. Passwords are commonplace for computers, locks, even cell phones. Encrypted signals are used for government transmissions and corporate information sharing. This project will implement a handheld device that incorporates fingerprint recognition used to gain access to a door on a house or office facility.

Presentation Index: T13
Time: 3:00 p.m.
Department: Electrical and Computer Engineering
Project Sponsor(s)
Student Presenter(s):
Thamvichai, Ratchaneekorn
Smith, Brandon; Schulz, Adam; Plautz, Matthew

Investigation of Feedlot Contribution to Coliform Contamination in the Sauk River

The degradation of water quality due to anthropogenic activity is destroying both recreational and natural values of waterways worldwide. Some agricultural practices may be largely responsible for this degradation. The problem is becoming so severe that waters in the St. Cloud area are unsafe for recreational purposes. Animal feedlots are sites intended for confined feeding, raising, or holding of livestock. These areas of confinement result in an accumulation of manure and often limited vegetation. The lack of vegetative cover and manure accumulation combine to create a number of surface runoff issues, most notably coliform contamination, which can be harmful to human life. A monitoring study conducted between 2005 and 2006 by the author of this study concluded that rainfall events contributed dangerous levels of E. coli bacteria to the Sauk River. While the previous study focused only on water quality, this study will focus on coliform contamination and its relationship with animal feedlots. Animal wastes from feedlots may contain harmful coliform bacteria, such as fecal coliform and E.coli, the latter of which is a direct threat to human health. On September 16, 2006, 17 sites along the entire stretch of the Sauk River were examined for coliform contamination. Findings from this study will be analyzed using Geographic Information System (GIS) software, and any correlation between location of animal feedlots and levels of coliform bacteria will be investigated.

Presentation Index: T14
Time: 3:00 p.m.
Department: Environmental and Technological Studies
Project Sponsor(s)
Student Presenter(s):
Bender, Mitch
Galzki, Jacob

Developing a Dementia Training Manual: Outcomes of an Intergenerational Service-Learning Project

Intergenerational service-learning has been shown to promote civic engagement in students, while providing needed service to the community. In the current project, gerontology graduate students in a course on "Aging and Community" were approached by a local long-term care facility for assistance in creating accessible staff training in dementia. The training materials were to be directed toward staff in newly opened Memory Loss Cottages which were designed to provide dementia care for residents in the early to moderate stages of dementia. The staff were Certified Nursing Assistants but had received no formal dementia training. After touring the facility, the class researched and created a dementia training manual that began with an overview of dementia in later life. Communication, challenging behaviors, catastrophic reactions, sundowning, environmental modifications, and dealing with day to day caregiving were all covered in detail. The manual also included a pre-test and post-test for staff to assess their own learning. In addition, the class developed a dementia-appropriate box of activity ideas for staff and visitors tailored to the needs of the current residents. At the end of the semester, the class shared their material with the agency and taught in-services to the staff. Outcomes of this service-learning project, including the staff training materials, students' reflection on their learning experience, and agency satisfaction with the service provided will be presented.

Presentation Index: T15 Time: 3:00 p.m.
Department: Gerontology Project Sponsor(s) Karasik, Rona
Student Presenter(s):
Smith, Abby, Jones, Sarah; Snyder, Suzanne; Forbregd, Wendy; Kuhlmann, Michelle

Effect of WHI-P131 on Mixed Lymphocyte Reaction (MLR)

It has been recently described that WHI-P131 (P131), a specific inhibitor of JAK3 kinase, prevents autoimmune, T-cell-induced diabetes in a mouse model (NOD mice) for human autoimmune type 1 diabetes. However, the mechanism of P131 action is not known. It has been recently found in Dr. Cetkovic-Cvrlje's laboratory at SCSU that the P131 can inhibit T-cell proliferation induced by mitogen. Mitogen is an "artificial" activator of T-cells. Therefore, the aim of this study was to determine the effects of P131 on T-cell proliferation induced by natural antigen (alloantigen) using the mixed lymphocyte reaction (MLR). T-cells (responders) were obtained from the spleens of BALB/c mice. They were stimulated in vitro by T-cells (stimulators) from another mouse strain (C57BL/6 mice). Stimulators were treated by mitomycin C (0.5 mg/mL) to prevent their proliferation to responders' alloantigens. Single cell suspensions of BALB/c splenocytes were made, and 4 x 10^6 cells/mL were plated in 96-well-plate. Mitomycin C-treated C57BL/6 splenocytes were added to the plate in three different concentrations (4 x 10^6 - "high", 1 x 10^6 - "medium", and 5 x 10^5 cells/mL - "low" concentration). The P131 was added in the concentration range of 0 – 25 mg/mL. The proliferation of BALB/c splenocytes was measured after five days of culturing by WST-1 assay, using plate reader at 480 nm. It is found that P131 induced a dose-dependent inhibition of MLR stimulated by either "high", "medium" or "low" dose of stimulators. Moreover, even the lowest dose of P131 (0.8 mg/mL) induced statistically significant inhibition of MLR (P=0.001, Student t-test). These data confirm that P131 acts on T-cell level, and that P131 affects alloantigen-induced T-cell proliferation in vitro. Our further studies will be focused on defining the exact population of T-cels affected by that powerful drug.

Presentation Index: T16 Time: 3:00 p.m.
Department: Biological Sciences Project Sponsor(s)
Student Presenter(s): Cetkovic-Cvrlje, Marina
Messner, Emily; Dayama, Gargi; Hobbs, Joseph

In What Ways Have the new ESB Ordinances Affected the Patterns of Green Space in Sartell, Minnesota's New Housing Developments.

This research project examines the relationship between new housing developments and the patterns of green space around them. This study focuses on the city of Sartell, MN and the green space patterns existent before and after their newly enacted ESA Ordinance. This study also shows how the city of Sartell and the land developers in the area are conforming to this new ordinance. Other parts of this study include the GIS mapping of both pre and post ESB ordinance Sartell developments and their relative locations to green spaces. Also included in this study are the different land developers in the Sartell area, and their progress usage of green space connectivity.

Presentation Index: T17 Time: 3:00 p.m.
Department: Geography Project Sponsor(s)
Student Presenter(s): John, Gareth
Hoffman, Brad

Design and Synthesis of a Novel RAS Farnesyl Protein Transferase Inhibitor

RAS proteins play a key role in the signal transduction pathways that regulate cell proliferation. In order to perform their function as an "on"/ "off" switch for cell growth, RAS proteins must first undergo a series of post-translational modifications. The key step in this process is the addition of a fifteen carbon, farnesyl substituent to the RAS protein. This addition is catalyzed by the enzyme farnesyl protein transferase (FPTase). Mutations in RAS proteins have been implicated in approximately 30% of all human cancers. It has been demonstrated that compounds that inhibit FPTase prevent mutant RAS proteins from promoting unregulated cell growth. This project describes the design and synthesis of a novel RAS farnesyl protein transferase inhibitor. The compound was prepared in eight linear steps and mimics farnesyl pyrophosphate, the natural substrate of FPTase. The analogue incorporates an aromatic ring in the farnesyl "tail" and it is anticipated that this ring will increase the inhibitor's binding affinity to the FPTase active site.

Presentation Index: T18
Time: 3:00 p.m.
Department: Chemistry
Project Sponsor(s)
Student Presenter(s):
Mechelke, Mark
Nichols, Todd

Solution Studies of Vanadium-5-Hydroxyflavanoid Complex

The possibility of using vanadium-flavanoid complexes as a potential therapeutic agent for diabetes is gaining a great deal of interest. Diabetes results in the lack of insulin secretion or the resistance of cells to insulin and thus resulting in unregulated glucose levels in the blood. While vanadium has shown great potential as an insulin mimicking agent, flavanoids on the other hand work as antioxidants and thus help in reducing the amount of reactive oxygen species created due to diabetes. Therefore, carrying out solution studies on vanadium-flavanoid complexes will provide us with a better understanding of the biochemical behavior of these compounds in solution and help to better understand their behavior in animal tissues. Solution state chemistry of two previously synthesized vanadium(IV) flavonoid complexes, vanadium-5-hydroxyflavone, $VO(5fl)_2$ (1), and vanadium-3-hydroxyflavone, $VO(3fl)_2$ (2), was studied by using NMR and UV-vis spectroscopies. These studies indicate that both complexes exhibit different stabilities in solution state. NMR spectroscopic results reveal that the vanadium in both complexes does not oxidize in a coordinating solvent dimethylsufoxide (DMSO) over a period of twenty four hours. Whereas, in chloroform ($CHCl_3$), 2 shows a peak in ^{51}V NMR spectrum over time indicating oxidation of V(IV) to V(V) while 1 does not oxidize even after 24 hours. UV-vis spectroscopic studies support the results obtained from NMR spectropscopy. Results of these studies will be presented.

Presentation Index: T19
Time: 3:00 p.m.
Department: Chemistry
Project Sponsor(s)
Student Presenter(s):
Mahroof-Tahir, Mohammad
Fernando, Koshali

Risk Assessment of Manure Basin Abandonment Alternative

Use of manure basins to store animal wastes is a common practice throughout Minnesota due to their effectiveness and relatively inexpensive construction costs. Manures within these basins are a valuable source of nutrients for crops, however they must also be managed appropriately to protect water resources. Some contaminants found within animal manures can pose a potential human or environmental health risk. For example, nitrate in manure poses one of the greatest risks to groundwater contamination; due to its ability to travel through soil easily. One area of manure management which has not been thoroughly investigated is the risk posed by manure basin closures to water resources. In cooperation with a larger study being administered by the Stearns County Soil and Water Conservation District and Minnesota Pollution Control Agency, the Risk Assessment of Manure Basin Abandonment Alternative project will perform a thorough risk assessment of eight basins studied within the larger experimental project. The risk assessment will determine the amount and forms of contaminants present, document changes in water quality, and assess the overall human and environmental health risks associated with manure basin closure, if any. Initial sampling data from two sites suggests that contaminant levels near the basin do not greatly exceed background levels. Conclusions can not be drawn to determine whether manure basin closures pose a significant human or environmental health risk with these preliminary results; further investigation is required.

Presentation Index: T20
Time: 3:00 p.m.
Department: Environmental and Technological Studies
Project Sponsor(s)
Student Presenter(s): Storlien, Joseph
Bender, Mitch

Interaction of Ruthenium Complexes with DNA

The study of cancer and methods to alleviate its effects is never-ending. Many drugs are found to provide cytotoxic activities in human tumor cell lines. Recently transition metals have entered the picture as having applications to this field. A class of benzimidazole-ruthenium complexes and their ligands has shown cytotoxic effects on certain breast cancer cell lines. How these compounds bring about cytoxicity is not clear and we hypothesize this to be due to their interactions with DNA and Oligonucleotides. Complexes RuCl3(o-OHPhBzlH)3 and RuCl3(o-HPhBBzl)2 have been studied using a combination of analytical techniques including UV-vis spectroscopy, Proton NMR, Fluoremetry, and gel electrophoresis. These techniques were used to illustrate slight correlation with this hypothesis. This project is allowing the further understanding of the conceptual basis of the ruthenium complexes and their anticancer properties.

Presentation Index: T21
Time: 3:00 p.m.
Department: Chemistry
Project Sponsor(s)
Student Presenter(s):
Sreerama, Lakshmaiah
Krekelberg, Elizabeth

Irradiation Patterning of Co/Cu/Co GMR Layers for Use in Magnetic Random Access Memory

Magnetic Random Access Memory (MRAM) concepts were introduced in the mid-1980's and consist of small sub-micron elements called bits. The bits are made up of ferro-magnetic materials that are patterned on a common substrate material, for example, silicon. The bits are essentially tiny magnets that change magnetization with an externally applied field. The mechanisms that the bits take advantage of exist in two types - Anisotropic Magnetic resistance (AMR) and Giant Magneto resistance (GMR). This project will focus on the GMR.

Presentation Index: T22
Time 3:00 p.m.
Department: Electrical and Computer Engineering
Project Sponsor(s)
Student Presenter(s):
Vogt, Timothy
Smith, Brandon

Development of Novel Latent Fingerprinting Techniques Based on Binding/Complexing Properties of 8-Quinolinol Sulfate

Fingerprinting is one of the common techniques used in criminalistics. We have developed a new process that uses reagents and metals that are currently used in trace metal detection techniques and in bloody print detection in order to detect whether these chemicals can be applied to enhance prints. In theory, the oils and minerals secreted from the fingertips can absorb metals and these metals can be treated with 8-quinolinol sulfate, which will bind to the metal complexes in the print and fluoresce under a UV light. We have tested 8-quinolinol sulfate and a variety of metals and metal salts to detect fingerprints. Under several testing conditions, we have successfully detected latent fingerprints. In a small number of cases, the prints were visible but not the print ridge characteristics. A limitation of this technique is that an alternative light source, e.g., UV radiation, is needed to view the images and at least one of the metal salts tested, the prints are short lived and they need to be recorded immediately.

Presentation Index: T23
Time: 3:00 p.m.
Department: Chemistry
Project Sponsor(s)
Student Presenter(s):
Sreerama, Lakshmaiah
Desm, Rosa

The Effects of Red Clover on Bovine Trachea

The purpose of this study was to determine the effects of red clover on bovine trachea smooth muscle. Red clover is known to relax the smooth muscle in uterus tissue. If red clover has the same effect on trachea, it could be used for the treatment of asthma and other respiratory problems. The smooth muscle was set up in an organ bath and attached to a force transducer to measure contractions. Acetylcholine was administered to produce contractions of the trachea which could then be exposed to red clover to determine any relaxant effects.

Presentation Index: T24
Time: 3:00 p.m.
Department: Biological Sciences
Project Sponsor(s)
Student Presenter(s):
Tubbiola, Maureen
Johnson, Loretta; Knott, Tyler

Sub-Cloning ALDH 6A1 by Restriction Digestion and Transfection into MCF7 Human Cancer Cells to Determine Possible Toxicity and Detoxification Effects

Aldehydes are highly reactive molecules that are important in numerous physiological and biochemical processes. Aldehyde dehydrogenases are enzymes that catalyze the pyridine nucleotide-dependent oxidation of aldehydes to carboxylic acids. Certain members of the aldehyde dehydrogenase family, such as ALDH 3A1 have been shown to be useful in cancer chemotherapy by detoxifying anti cancer drugs such as cyclophosphamide and its analogues. Members of this family have also been demonstrated to have toxicological and forensic application by playing roles in the toxification of ethylene glycol ether aldehydes. The goal of this research is to determine if a less studied member of the aldehyde dehydrogenase family, ALDH 6A1 has similar effects on these compounds. This was determined through sub-cloning the gene by restriction digestion and transforming the gene into the bacteria E. coli. After over expression in E. coli, the enzyme for which the gene codes, methylmalonate-semialdehyde dehydrogenase, was purified with affinity chromatography. A series of assays were then done to determine if this enzyme plays a role in either of the pathways of interest.

Presentation Index: T25
Department: Chemistry
Student Presenter(s):
Christian, Curt

Time: 3:00 p.m.
Project Sponsor(s)
Sreerama, Lakshmaiah

Identification of ALDH3A1 Polymorphism in the Human Saliva

Aldehyde dehydrogenase 3A1 is NAD(P) dependent enzymes and plays significant roles in detoxification of aldehydes formed during UV-induced lipid peroxidation, bioactivation of ethyl glycol ether aldehydes, and metabolic function for promoting survival of epithelial cells through cell cycle regulation. Two forms of aldehyde dehydrogenase 3A1 were detected: ALDH3A1*1 and ALDH3A1*2, and these polymorphic forms result from C ¨G transversion in exon 2 at base #35 and T ¨G transversion in exon 4 at base #400. This paper will present results of ALDH3A1 polymorphism found in human populations. In that regard, we have tested a total of 62 saliva samples collected from 19 individuals of African origin, 19 individuals of European origin, 19 individuals of Asian origin, 1 mixed race, and 4 individuals of Hispanic origin. Through those experiments, we hope to show correlation of ALDH3A1 polymorphism and ethnicity.

Presentation Index: T27
Department: Chemistry
Student Presenter(s):
Shionome, Yoshimi

Time: 3:00 p.m.
Project Sponsor(s)
Sreerama, Lakshmaiah

Interstate Highways and Population Growth Patterns In Metro Regions

The United States is becoming an ever increasing urban society. Populations are growing out towards the suburbs and out of the center cities at an astonishing rate in some cities. One influencing factor on the way the suburbs grow is the main highways in the area, mainly the Interstate Highway System. I believe that the Interstates have a very big part in how cities will grow in the future. In this paper, I will look at three different metropolitan areas and see how the Interstate affects the growth of suburbs that it passes through, and how it affects suburbs that it doesnt pass through.

Presentation Index: T28
Department: Geography
Student Presenter(s): Smith, Andrew

Time: 3:00 p.m.
Project Sponsor(s)
John, Gareth

Characterization of Organic Crystal Surfaces by Atomic Force Microscopy

Organic single crystals of small conjugated organic molecules have the potential of serving as alternatives to traditional inorganic semiconductors. In a number of electronic devices such as field effect transistors, solar cells and chemical sensors, the transport of the charge carriers (electrons and holes) is on or near the surface of the material. To understand this transport, it is essential to characterize the surface of the crystal. As crystals grow, the surface of the crystals can have areas of defects and dislocations (steps). These defect areas can act as traps for the charge carriers thus impeding the transport of the carriers across the material. The speed of the carrier transport is important in the performance of the device such as in the switching time of a transistor or response time of a chemical sensor. Atomic Force Microscopy (AFM) allows one to probe the surface of a material on a nanometer scale. Information on the topography and carrier transport can be collected. In AFM, a probe that is sharpened to a point of a few atoms is scanned along the surface of a sample and the resulting trace is displayed in a three-dimensional image. This type of microscopy can detect imperfections at the atomic level. While topography of the crystal surface is an important objective, what is equally if not more important, is the surface conductivity of the crystal. The AFM can be combined with conductive probes to measure numerous electrical properties of a sample. Initial results of these studies will be presented.

Presentation Index: T29 Time: 3:00 p.m.
Department: Physics, Astronomy and Engineering Science Project Sponsor(s)
Student Presenter(s): Lidberg, Russell
Janisch, Robert; Gainey, Josh

Feeding Biomechanics of Silvery Minnow Fishes

The silvery minnow has been placed on the endangered species list in New Mexico. This has been a result of its declining numbers which is largely believed to be due to the drying of the river caused by drought and irrigation of the river for farmland. As a result, scientists have taken actions to save these shiny silver fishes. One aspect of the study to save this species in our research has been focusing on the feeding biomechanics of the silvery minnow. High-speed (250 frames/second) recordings of dorsal, lateral and ventral feeding of the silvery minnow larvae were analyzed through NIH Image digitization. Ten landmarks including the tip of the snout, hyoid bone, eye, pectoral fin, and several points along the midline were marked in each successive frame. The data obtained were used to calculate the velocity of the silvery minnow upon approaching the feeding substrate and the distance from which the approach was initiated. Approach velocities averaged about 5 bodylengths/second and approaches were initiated from a distance of approximately 5.9905 mm. A suction feeding with buccal expansion was observed in most cases although burrow feeding was apparent in some occasions. The high approach velocities indicate intense competition for food resources, which may limit the species ability to increase population size quickly.

Presentation Index: T30 Time: 3:00 p.m.
Department: Biological Sciences Project Sponsor(s)
Student Presenter(s): Schoenfuss, Heiko
Saleh, Amir

Characterization of Fathead Minnow and Frog Aldehyde Dehydrogenase with Regard to Their Role in Metabolism of Ethelene Glycol Ethers.

Ethylene glycol ether (EGE) metabolism in mammals has been shown to parallel ethanol metabolism. ALDHs catalyze the oxidation of EGE aldehydes to their corresponding acids, it is believed to be the rate determining step in EGE metabolism and the acid metabolite is toxic to mammals. EGEs are common solvents in industrial and household products and are discharged into waterways at relatively large concentrations. EGEs impart toxicities in mammals including carcinogenesis. Effect of EGEs in aquatic animals, e.g., Fathead Minnows (Pimephales promela and Frogs (*Xenopus laevis*), the first aquatic animals expected to first encounter EGEs, is not known. Metabolism of EGEs in these aquatic models is expected to be similar to mammals. We have determined the presence of ALDH isozymes in various tissues of Pimephales promela and in various developmental stages of Xenopus laevis using EGE aldehydes as substrates. These ALDHs are now being identified by immunological techniques.

Presentation Index: T31 Time: 3:00 p.m.
Department: Chemistry Project Sponsor(s)
Student Presenter(s): Yanjon, Tsering Sreerama, Lakshmaiah

Genetically Modified Foods

Throughout the past two decades the technological advances made in the science field have allowed geneticist to make new strides in developing hybrid forms of agricultural crops. These advances have provided the harvesters and consumers with a greater quality product. One aspect many have over looked is the harmful effects that these changes in genetic sequence have on the consumers and ecosystem. The research I have compiled shows the number of people who are conscious of the changes and possible harms that genetically modified foods may have on their body and environment.

Presentation Index: T32 Time: 3:00 p.m.
Department: Biological Sciences Project Sponsor(s)
Student Presenter(s): Cunningham, Nickoli Minger, Mark

Analysis of Shoreline Soil Along the Sauk River

Indirectly and directly, soil is affected by the degradation of water quality due to anthropogenic activity. Agriculture is one of the main contributors of this degradation. Fertilizers are being over used on agricultural land, and animal waste is frequently not managed accurately. Fertilizers and animal wastes contain nutrients which can be carried to waterways during rainfall events and eventually travel down into the soil. From September 2006 through May 2007, a study was conducted to examine the basic characteristics in the soil along the banks of the Sauk River near St. Cloud. In early October, grab samples were taken from the topsoil along the banks of the Sauk River. The soil was then analyzed for pH, soil texture, phosphorus, nitrate, and ammonia. Results from this study will be used to help determine the influence of shoreline soil on the Sauk River water quality.

Presentation Index: T33 Time 3:00 p.m.
Department: Environmental and Technological Studies Project Sponsor(s)
Student Presenter(s): Nadeau, Daniel Bender, Mitch

Cloning, Purification and Characterization of Human Aldehyde Dehydrogenase ALDH5A1 and Its Ability to Catalyze Detoxification of Certain Chemotherapeutics and Environmental Contaminants

Aldehyde dehydrogenases (ALDHs) are a group of enzymes that catalyze the oxidation of aldehydes, including aldehyde intermediates of (i) chemotherapeutics (cyclophosphamide and ifosfamide) usually with detoxifying effects and (ii) environmental contaminants (ethylene glycol ethers) usually with toxic effects. There are 17 human genes that code for the ALDHs and the role of some of these enzymes including ALDH5A1 in the detoxification of cyclophosphamide and ifosfamide or the toxification of ethylene glycol ethers is not known. With this in mind, we have cloned ALDH5A1 with the aim of purification of ALDH5A1, and characterization of the role of this isozyme in detoxification of chemotherapeutic agents and toxification environmental agents listed above. The cDNAs coding for ALDH5A1 has been cloned into pET15b, pET44EkLIC bacterial expression vectors using restriction enzymes Kpn1 and Xho1. Further purification and characterization of this protein is on-going.

Presentation Index: T35 Time: 3:00 p.m.
Department: Chemistry Project Sponsor(s)
Student Presenter(s): Hoffmann, Todd Sreerama, Lakshmaiah

50 Lanterns

Imagine not being able to study and do homework after the sun goes down. Many people in the world come home without the luxury of turning the lights on. Fifty Lanterns International has been a nonprofit organization. The mission of Fifty Lanterns has been, "to provide vulnerable people around the world with solar and renewable energy sources such as solar powered lanterns." Fifty Lanterns focuses their efforts on vulnerable groups including orphans, widows, and those of whom are disaster victims. Our goal at St. Cloud State University is to raise money by selling bracelets, coffee, and collecting donations to purchase solar lanterns. With your donation, each solar lantern can give a household, clinic, or a school safe light for more than ten years in the environment where electricity is not readily available.

Presentation Index: T36 Time 3:00 p.m
Department: Human Relations and Multicultural Education Project Sponsor(s)
Student Presenter(s): Huber-Warring, Tonya
Berndtson, Daniel; McAlpine, Brian; Kovac, Tom, Papenguth, Ally; Fruth, Kayla
King, Kelsey; Verdeja, Cassie; Evens, Malarie; Brown, Stacy

Vulcan

The emergence of Unattended Ground Vehicles (UGV) over the last five years has made it accessible to the average person in the work force. The objective of our project is to create a UGV capable of deploying and retrieving unattended ground sensors over a one-mile range. In addition, we conducted research on the many different ways in which a user can control a vehicle. As UGVs become more prevalent in aiding humans to perform hazardous, tedious, or remote tasks, it will be necessary to develop a refined graphical user interface (GUI) as well as an effective method of vehicle control. In order to create an effective layout for our GUI, we conducted research on the positioning, availability, and functionality of the sensor information sent back from the UGV. We also determined whether it is more effective to control the vehicle with a direct or indirect pointing method. This research was done by consulting both ends of the user spectrum. Combining the feedback from both professionals and volunteers, we adjusted our GUI and control method to employ a carefully crafted and considered design. The combination of these two findings assisted us in determining the most effective design for UGV control that will accommodate the widest variety possible of user backgrounds.

Presentation Index: T37
Time: 3:00 p.m.
Department: Electrical and Computer Engineering
Project Sponsor(s)
Student Presenter(s):
Petzold, Mark
Idziorek, Joseph; Ficker, Justin; Boesche, Josh

Internet Telephony

In the ongoing rapid evolution of digital communication field there is a new name called Internet Telephony. Internet Telephony refers to voice and voice-messaging applications that are transported via the Internet rather than the Public Switched Telephone Network (PSTN). Our main objective for this project is to design a reliable Internet telephony system at a minimal cost. This system can be used in the same way as a regular phone with the only difference being dialing an Internet Protocol (IP) address instead of a phone number. The caller dials the destination Internet protocol (IP) address from a keypad; the phone rings on the receiving end and the other user may pick up the handset and have regular communication through handsets. The basic steps involved in originating an internet telephone call are conversion of the analog voice signal to digital format and compression/translation of the signal into IP packets for transmission over the Internet. The process is reversed at the receiving end. With this system, one can use their internet network as regular phone service to

Presentation Index: T38
Time 3:00 p.m.
Department: Electrical and Computer Engineering
Project Sponsor(s)
Student Presenter(s):
Hou, Ling; Deng, Xidong; Glazos, Michael
Karmacharya, Bipin; Shakya, Rajish; Opasnawakun, Komgrich;

Temporary Increases in Problem Behavior and Sleep Disruption

Conditional rates of problem behavior for weeks that followed medication decreases and no medication changes were compared for 12 individuals who exhibited severe problem behavior (e.g., self-injury, aggression). The results indicate that conditional rates of problem behavior were higher following medication decreases than following no changes in medication. During the subsequent week, rates of problem behavior typically decreased without reinstating the prior dosage of medication. Additional analyses suggest that the first medication decrease typically produced the highest increase in problem behavior. Decreases in medication also disrupted sleep patterns for several individuals. Possible operant conceptualizations of behavior changes produced by medication decreases are discussed.

Presentation Index: T39
Time: 3:00 p.m.
Department: Community Psychology
Project Sponsor(s)
Student Presenter(s):
Rapp, John
Swanson, Gregory

Isothiocyanates

Isothiocyanates are prominent in industrial and environmental systems. Gaining knowledge of the photochemical reactions of isothiocyanates under laboratory conditions will help build a platform to reach an understanding of the nature of these structures in their natural environments. Presently there are two main areas this research is approaching in regards to isothiocyanates. The first area primarily deals with the differential effects, if any, of adding a –N=C-S group to form the isothiocyanate versus just adding a –N=C=O group, as for a regular isocyanate. The second area of this research is focused on determining why isothiocyanates differ from the isocyanates. These questions will be answered photochemically using a Rayonet, an instrument that emits highly ultraviolet light, causing the sulfur atom in the isothiocyanate to become excited and jump into a triplet state, leaving the isothiocyanate yielding a positively charged nitrogen triple bonded to a negatively charged carbon. Measurements will be accomplished through quantum yields and calibration curves obtained using the GC/MS. Understanding the reactivity of isothiocyanates will build an overall understanding of how they will act in the environment and their applications to the industry.

Presentation Index: T40
Department: Chemistry
Student Presenter(s):
Ohman, Chris

Time: 3:00 p.m.
Project Sponsor(s)
Gregory, Daniel

Bioinfomatic Analysis of *Toxoplasmid Gondii* cDNA Sequences

T*oxoplasma gondii* is an obligate intracellular parasite from the phylum *Apicomplexa*. This parasite is known to be an important cause of abortions and stillbirths in many mammals. Humans may become infected through contact with cat feces or by eating undercooked meat. A cDNA is a DNA synthesized from a mature mRNA template through reverse transcription. By sequencing *T.gondii* cDNAs, the parasite cell functions and metabolism can be more understood. *T.gondii* cDNAs are inserted in plasmid vectors and sequenced in a bi-direction sequencing reaction. Genbank sequence database is an open access, annoted collection of all publicly available nucleotide sequences and their protein translations. This database is produced at National Center for Biotechnology Information (NCBI). Our objective is to sequence a portion of cDNA library from *T.gondii*, compare the sequenced cDNAs to Toxodb and NCBI database and re-align them to the coding sequences from Toxodb database through LASERGENE® DNA and Protein analysis software. A summary of *T.gondii* cDNA sequences with corresponding proteins are listed. In a collection of 150 cDNA sequences, 90 sequences are found to have a corresponding protein from Toxodb database. These cDNA sequences are then submitted to Genbank.

Presentation Index: T41
Department: Biological Sciences
Student Presenter(s):
Wong, Kuan Shen

Time: 3:00 p.m.
Project Sponsor(s)
Kvaal, Christopher

Development of Topological Thinking

Topology is the study of spaces and the concomitant study of the transformation and deformation of spaces. In terms of cognitive development, topological thinking is unusual that many of its tenets are intuitive and yet others are counterintuitive. Although the mathematical properties of topology have been investigated since Euler (1736), the emergence and the development of topological cognition has not been widely investigated. This study investigates the intuitions of children, adolescents, and adults regarding topology. Data are collected using card sorts, interview, interview plus realia, a transformation/deformation protocol, and response latencies. The data suggest an atypical developmental trajectory for topological thinking and show the effects of alternative conceptions on learning topological concepts. Ultimately the results from this study will be used to develop alternative means for teaching mathematics to students with learning disabilities and cognitive delays.

Presentation Index: T42
Department: Special Education
Student Presenter(s):
SPED 416 516 Class

Time: 3:00 p.m.
Project Sponsor(s)
Pickle, Michael, Waletzko, Patty; Beutel, Dory

Pattern of Under-Representation in Special Education Classes: Academic Engagement

Minnesota has marked shortage of teachers licensed to work with students who have emotional and behavioral disorders. As a result of this shortage, the Minnesota Department of Education has attempted to recruit teachers from populations that are typically underrepresented on special education faculties. Men are one of these identified groups. The lack of male special education teachers has been linked with social and cultural expectations, with low salaries, and with the perception that teaching is not a prestigious career. In this study, the effects of extant teacher preparation programs are addressed. At St. Cloud State University, women outnumber men in special education courses by a 7-to-1 ratio, and often this ratio shows even a higher representation of women. The attitudes and behaviors of male special education majors and non-majors are compared and contrasted. Data were collected using classroom observations and surveys. The results suggest that perceptions of academic rigor and of intellectual prestige affect the decision to choose special education as a career. In this poster session, these results are addressed and methods for increasing the number of male special education teachers are promulgated.

Presentation Index: T43 Time 3:00 p.m.
Department: Special Education Project Sponsor(s)
Student Presenter(s): Sandbulte, Tony Pickle, Michael

An Interactive Geographic Information System: Pre-Park Exploration on the Upper Yellowstone River, 1869-1872

In the spring of 1872, President Ulysses S. Grant signed a bill passed by the 42nd Congress that set aside a tract of land to be “reserved and withdrawn from settlement, occupancy, or sale under the laws of the United States, and dedicated and set apart as a public park or pleasuring-ground for the benefit and enjoyment of the people” (House Report 764, 42nd Congress, February 27, 1872, quoted from Merrill, p. 233). Before the park was formed, many explorations and expeditions, conducted by mining interests and civilian and government funded parties, sought to discover exactly what the area had to offer. This thesis project is concerned with the three major expeditions between 1869-1871. The Folsom-Cook expedition of 1869, the Washburn-Doane expedition of 1870 and the Ferdinand V. Hayden expedition of 1871 will be the focus of this project. The main goal of this project is going to integrate the historical background of these explorations with modern geographical techniques - especially the use of geographic information systems (GIS). Historical GIS (HGIS), the theoretical and methodological approach of the thesis, provides the tools to combine them to study patterns of change over space and time (Knowles, xii). HGIS is becoming an increasingly important way for historians and geographers alike to conduct research, store digital archives as a way of providing a spatial and visual dimension to the historical journals and writings. In this project, GIS will be used to create a series of interactive historical maps that provide researchers and the general public alike the ability to link to journals, images and other archival material and highlight spatial connections inherent to the production of the historical artifacts. The overriding question, in this research and project, will address the ability of these maps to present an accurate and informative spatial representation of the past.

Presentation Index: T44 Time: 3:00 p.m.
Department: Geography Project Sponsor(s)
Student Presenter(s): Forstner, Jay John, Gareth

The Branching Instability of Dendrites

Dendrites, the textbook six-armed snowflakes, are complex structures created as ice crystals grow. Most commonly grown around -15° C, the crystals are elaborate, time-dependent interactions between temperature, atmospheric humidity, and pressure. All ice crystals' shapes are controlled by the rate of vapor diffusion towards the crystal during growth. This diffusion-limited growth, a function of pressure, determines whether a crystal can develop an appearance that is more "branched" (long, intricate arms), or "faceted" (plate-like). While extremes exist, most dendrites are a delicate balance between faceting and branching. Diffusion-limited growth begins when water vapor is drawn towards the crystal. Diminutive corners of plates protrude further than the rest of the crystal; therefore water vapor reaches the edges first. These tips continue to collect more water vapor, emerging away from the crystal. The crystal continues to develop, by branching or faceting, on its journey to earth. This study aims at finding how diffusion-limited growth, at various pressures below standard sea level pressure, affects branching instability (and in turn, a dendrite's final appearance). Using a water bottle, hot water, dry ice, sponge, and thin fishing line, a supersaturated, subfreezing atmosphere was simulated for crystal growth. Temperature, supersaturation and pressure were held constant for crystal growth. Crystals were first grown at standard atmospheric pressure. A vacuum was then employed to pump air out of the chamber. Through a series of experiments, the chamber pressure was decreased each trial. This allowed examination of how pressure affected vapor diffusion, which in turn affected the growth of the crystal. Using photography and a camera recorder, images were taken to better study the sophisticated dendrite morphology. Results are compared to the standard-pressure crystals to draw conclusions on whether or not lower pressure affects branching instability.

Presentation Index: T45 — Time: 3:00 p.m.
Department: Earth and Atmospheric Sciences — Project Sponsor(s)
Student Presenter(s): Anderson, Stephanie — Kubesh, Rodney

Patterns of Under-Representation in Special Education Classes: Social Engagement

Males are less likely than females to become special education teachers, and as a result, the Minnesota Department of Education has initiated programs designed to increase the number of men entering special education. Previous research suggests that three factors decrease the likelihood of men becoming teachers. First, stereotypes suggest that teaching is "women's work" (NEA, 2007). Second, teachers' salaries are perceived as a typically low. Finally, teaching is not perceived as a prestigious career. In this study, the effects of teacher preparation programs on the recruitment of male special education teachers are examined. Four special education classes were followed for a semester. Data on the social structure and on the group interactions of the classes were collected. The initial results suggest that social factors affect the recruitment and the retention of male special education students.

Presentation Index: T46 — Time: 3:00 p.m.
Department: Special Education — Project Sponsor(s)
Student Presenter(s): Peterson, Tyler — Pickle, Michael

Negative Emotions after Viewing Relational Aggression

This study will explore emotions that may be evoked by viewing relational aggression. Research has shown that aggression whether relational or overt can evoke similar emotions in the perpetrator and the victim (see Hoglund & Nicholas,1995). As Proeve and Howells (2006) revealed; emotions, such as guilt, anger, and shame have the possibility to appear after committing an act of aggression. Gerbner (see Reith, 1999), demonstrated that viewing a crime drama increases fear in the viewer. In my research project I look at how emotions are effected by viewing relational aggression in contrast to a control condition. I predict that viewing a relational aggression video will cause higher ratings of shame, guilt, fear, and anger than viewing a travel video. Also, girls who view the relational aggression video will experience higher emotion ratings than boys viewing the same video. First, the experiment will be made available on Experimentrak to all psychology students seeking extra credit. Participants will be greeted at the psychology lab and given the consent form. After signing the consent form and any questions answered, they will view either an evocative video portraying relational aggression or a non-evocative travel video. Participants will complete a 40-item survey measuring shame, guilt, anger, and fear. Items are modified from the Guilt Inventory (Jones, Schratter, & Kugler, 1992) and The Clinical Anger Scale (Snell, Gum,Shuck, Mosley, & Hite, 1995). A debriefing sheet will be given and participants are thanked for their time. An interaction is expected between gender and the experimental condition. Viewing relational aggression can evoke emotions related to past experiences with such relational aggression. Girls generally have experienced more relational aggression, so they will have higher negative emotion ratings after viewing the experimental video.

Presentation Index: T48 — Time: 3:00 p.m.
Department: Psychology — Project Sponsor(s)
Student Presenter(s): Williams, Casey — DeVoe, Marlene

Cloning, Purification and Characterization of Human Aldehyde Dehydrogenase 7A1

Aldehyde dehydrogenases (ALDHs) are a group of enzymes that catalyze the oxidation of aldehydes, including aldehyde intermediates in the metabolism of chemotherapeutics, usually with detoxifying effects. Some chemotherapeutics detoxified by ALDHs include cyclophosphamide and ifosfamide. There are 17 human genes that code for the ALDHs and their role in the detoxification of the above drugs is not known. With this in mind, our goals are to create recombinant E. coli containing plasmids encoding the human genes, and to isolate, purify, and characterize the enzymes, with the ultimate goal of developing methods to prevent to detoxification of chemotherapeutic agents. This project deals with cloning and characterization of human ALDH7A1. The cDNA coding for ALDH7A1 was obtained from the University of Colorado Health Sciences Center. The gene was excised using restriction enzymes (BamH1 and Xho1, New England Biolabs) and the DNA fragment coding for the ALDH7A1 protein will be cloned into an expression the vector pET21a (Novagen, Darmstadt, Germany). An additional effort is also being made to clone this fragment into an alternate vector, pET15b (Novagen, Darmstadt, Germany). Each of these vectors allows for the expression of His-Tag-proteins that can be affinity purified. Future goals include the purification of the proteins by affinity \ chromatography and the subsequent characterization of the human protein by enzymatic activity assays using aldehyde intermediates of cyclophosphamide and ifosfamide, the most commonly used chemotherapeutics in the treatment of leukemia and metastatic breast cancers.

Presentation Index: T49
Time 3:00 p.m.
Department: Chemistry
Project Sponsor(s)
Student Presenter(s): Pitcher, Austin
Sreerama, Lakshmaiah

Biological Effects of Endocrine Disrupting Chemicals on Fathead Minnow Reproductive Endpoints

Endocrine disrupting agents have adverse effects on aquatic ecosystems, and more specifically, the reproductive biology of fish. Endocrine disrupting compounds include estrogen mimics in the form of birth control pills, and alkylphenols found in soaps. In this study, we will determine if suspected endocrine disrupting compounds have a synergistic effect. The proposed study will focus on three classes of endocrine disrupting compounds that are likely to affect the hypothalamus-pituitary-gonad axis: (1) alkylphenols, (2) natural and synthetic estrogens, and (3) the pharmaceuticals fluoxetine, cambamazepine, and triclosan (antimicrobic agent in many personal care products). The three pharmaceuticals were chosen as they have been documented in numerous North American surface waters, are designed to interact with neurochemical pathways of the hypothalamus-pituitary-gonad axis, and have been suggested to adversely affect exposed fish. We will expose fathead minnow larvae to singular chemicals, mixtures of classes of chemicals and, mixtures of alkylphenols and chemical classes to determine whether reproductive fitness is adversely affected by exposure to mixture in a non-linear fashion. In order to assess the effects of complex mixtures of endocrine disrupting chemicals on relevant biological endpoints, we will focus on individual survival and reproductive ability which are both integrally linked to reproductive fitness. In order to assess survival, we will measure factors associated with feeding performance and locomotion. Reproductive ability will be measured by female fecundity and offspring survival. Rather than attempting to develop new and not fully validated methodology, we propose to use a strategy of linking validated protocols and experimental infrastructure in water chemistry, aquatic toxicology and reproductive physiology. The proposed series of experiments will determine whether the effects of several classes of suspected endocrine disrupting chemicals are inhibitory or are synergistic concerning reproductive fitness.

Presentation Index: T50
Time 3:00 p.m.
Department: Biological Sciences
Project Sponsor(s)
Student Presenter(s): McGee, Meghan
Schoenfuss, Heiko

Voice-to-Text Display

The aviation community is a world where fast paced technologies integrated with aircraft have taken over the travel industry. To execute feasible flying conditions, pilots and air traffic control (ATC) must have a clear understanding of each other to allow an error free setting. Existing technology allows controllers and pilots to communicate effectively through high frequency radio signals. Directions by ATC dictate a pilot to stay at a current altitude, heading, and clearance to land, takeoff, or accept instrument or visual rules. Visualize a system that allows a pilot/controller friendly environment through two primary channels of communication. Our group has designed an idea that will be a breakthrough in the aviation industry if implemented correctly. The idea will improve communication with ATC and pilots effectively. The design consists of a product allowing any communication over aviation radios to be displayed in a live text format. The messages will be displayed in the cockpit and the control tower. This will be achieved through a software program that uses voice recognition to encode the pilot's or ATC voice to be sent via electronic message between the plane and the ATC. Designing Voice to Text Display (VTD) will enhance three main ideas, making it a very attractive software system. Through existing technology VTD will be easier to design. Once implemented into the avionics systems it will increase overall safety, situational awareness, and airport capacity. These aspects are pertinent to making a successful aviation business. Copyright 2006 Patent Pending Jeremy Bos, Silas Simone, Kyle Pokorney

Presentation Index: U1
Department: Aviation
Student Presenter(s): Bos, Jeremy

Time: 5:00 p.m.
Project Sponsor(s)
Aceves, Robert

Different Styles of Code-Switching between Chinese and English in Diverse Networks: An Introspection Study

This ethnographic study was conducted to explore the code-switching behavior of bilinguals who speak Mandarin Chinese and English. The researchers, two bilingual speakers of Mandarin and English, audio-taped themselves while they were interacting with each other and with people around. The data collection process, which provided plenty of recordings for further analysis, lasted for more than one month. The focus of data analysis was on the correlation between code-switching and network and code-switching style. The results indicated that the researchers were involved in four types of networks in each of which they used code-switching differently. It was also found that there were three styles of code-switching, depending on the role each language played in conversation. Through this introspection study, a self-reflect example was provided for bilingual speakers so that they can consciously take advantage of code-switching to communicate effectively within different networks.

Presentation Index: U2
Department: English
Student Presenter(s): Liao, Yuanyuan; Wang, Tingting

Time: 5:20 p.m.
Project Sponsor(s)
Koffi, Ettien

ESL Students' Reactions to Written Comments in Composition Revision

This study examines how second language writers incorporate teachers' written feedback in their revision process. 46 impromptu essays from college-level second language writers were graded and commented, each of which was commented by two different readers. 10 English as a Second Language teachers, 5 new and 5 experienced, participated as essay readers. Students revised their compositions based on both readers' feedback. The students also rated the usefulness of the comments they had received and completed a questionnaire about which teacher's comments they preferred and how they reacted to the comments that they had difficulty in understanding. The revised essays were graded and compared with the original essays to see whether the students improved or not in the following categories: content, organization, vocabulary, language use, and mechanics. In this study, various types of data were collected and analyzed in order to explore the effect of written comments on second language writers' revision of writing. The findings from this study offer pedagogical information for second language teachers.

Presentation Index: U3
Department: English
Student Presenter(s): Wang, Tingting

Time 5:40 p.m.
Project Sponsor(s)
Kim, Choonkyong

La historia oficial: El lado triste de la Argentina

The "Official Story" is an Argentinean movie that won the Academy Award in 1985 for being the best foreign language film. It is a story of a middle-aged, upper-class high school teacher (Alicia) in Buenos Aires who is married to a businessman (Roberto) with former government ties. They have a five-year-old adopted daughter (Gaby). Several events take place that expose Alicia to question the circumstances under which she and her husband gained custody of their child. She begins to suspect that her daughter is one of the children who were victims of what was called "The Dirty War" in the 1970 dictatorial government. The military junta took over the government during this time and thousands of people disappeared.

Presentation Index: V1
Department: Foreign Languages and Literature
Student Presenter(s):
Larson-Zepeda, Linda

Time: 5:00 p.m.
Project Sponsor(s)
Splittgerber, Lisa

The Evolution of the Great Banana

This presentation will make you go bananas, well at least know more about them anyway. You will learn the discovery, history, breeding, growth, transportation and a lot more you didn't know about bananas. For example, did you know that having a banana milk shake with a dab of honey can help a hangover? Or how about eating bananas to help you quit smoking? Learn all of this and more!

Presentation Index: V2
Department: Foreign Languages and Literature
Student Presenter(s):
Backes, Brandon

Time: 5:20 p.m.
Project Sponsor(s)
Splittgerber, Lisa

German Soccer World Cup Success and the Societal Implications

German fotball (soccer) history has been littered with much success when looking at the sport's ultimate and most important competition: The World Cup. This is not just teams or clubs going toe to toe but rather Nations and national teams against one another. Two of Germany's World Cup (WC) achievements that stand out most are a post-war championship from West Germany at the 1954 WC in Austria and an unexpected fairytale to 3rd place in their own backyard at last summers (2006) WC in Germany. I will interweave case studies of each - not only with perspective of Germany's football crazed fans but also regarding the implications of a society and culture formerly divided, since reunited - using reference to films, books, research and human accounts.

Presentation Index: V3
Department: Foreign Languages and Literature
Student Presenter(s):
Egan, Patrick

Time: 5:40 p.m.
Project Sponsor(s)
Mueller, Isolde

Just another War Theory?

While just war theory is making substantial ground in being more readily accepted by moral philosophers, I believe that this is simply mistaken. Given the other two choices, pacifism and realism, just war theory provides a great middle ground to those who wish to abolish war completely or those who realize that warfare is not going to disappear anytime soon. However just war theory's foundation is irreconcilably flawed, in general due to its application of morality to the topic of warfare, and specifically because of its use of the "minimally just society." Realism neither requires morality nor the concept of a minimally just state, which gives it a devastating advantage against just war theory. My paper discusses the problems that just war theory has built itself on, and shows how realism makes up for these problems.

Presentation Index: V4
Department: Philosophy
Student Presenter(s):
Sulander, Travis

Time: 6:00 p.m.
Project Sponsor(s)
Gill, Kate

Session V	Humanities	Lady Slipper

Othering in Iraq

Soldiers have done terrible things in wars throughout history. The specific motivations of these acts are diverse but their justification follows a pattern. This pattern is the process of labeling the enemy in a way that allows the soldier to draw a distinction between themselves and the 'other'. Once the distinguishing characteristics are noted, the soldier can then view the other as subhuman and as a result no longer give the same value to the life of the other. The most common label is 'savage,' or something related. The term plays on fears of what the other might do to the soldier if given the opportunity. One would expect a 'savage' to do savagery; scalping, torturing, killing in gruesome ways, and delighting in the act if violence. Another expectation is that the savage should be inferior, intellectually and culturally. My experience in Iraq followed this pattern very closely. In place of savage, we called the Iraqis 'Hajjis', where we understood Hajji to mean 'enlightened old man who has made his trip to Mecca'. We used the term equally for men and women, old and young, as we attached all our fear and hate to the word. Hajjis were the people who were trying to kill us, but Hajjis were also the school aged children on the corner. The same term was applied to everyone, and everyone was seen as a threat. Such labeling devalued the Iraqis as a people and as individuals, and degraded an honorific term from the Iraqi culture by changing its meaning. This paper analyzes the process of labeling the 'other' in order to devalue their humanity with special attention paid to American soldiers in Iraq.

Presentation Index: V5
Time 6:20 p.m.
Department: Foreign Languages and Literature
Project Sponsor(s)
Student Presenter(s): Stephen, Horvat
Splittgerber, Lisa

Session W	Natural Sciences	Oak

Radical Scavenging Studies of Potential Anti-Diabetic Vanadium Flavonoid Complexes.

Diabetes is a health concern in our world affecting every 1 in 20 individuals in the society today. Current studies have shown that an increased amount of free radicals formed by glucose oxidation is a factor responsible in the development and progression of diabetes and its complications. Compounds that can scavenge these free radicals produced, have a great potential in diabetes treatment. Antioxidants or free-radical scavengers detoxify and counter the harmful action of the free radicals. Plants containing flavonoids have been shown to possess strong antioxidant or free-radical scavenging activities. Flavonoids show antidiabetic properties whereas vanadium has also shown promising antidiabetic properties. To explore the synergistic effect on antidiabetic properties, vanadium flavonoids complexes were synthesized and characterized. To correlate the antioxidant and antidiabetic properties, the free radical scavanging properties of these complexes are explored using a stable radical 1, 1-Diphenyl-1-Pichydrazyl (DPPH). The decrease in the DPPH radical absorbance in the presence of vanadium and flavonoids is measured spectrophotometrically. The antioxidant concentration required for the 50% reduction of the DPPH radicals, the IC50 value, determined for flavonoids and vanadium flavonoid complexes will be presented.

Presentation Index: W1
Time: 5:00 p.m.
Department: Chemistry
Project Sponsor(s)
Student Presenter(s): Kabata, Faith
Mahroof-Tahir, Mohammad

DNA Incubation Project

Douglas Scientific produces High Throughput Screening Instruments that perform DNA testing. One step in the DNA testing procedure is to amplify the prepared samples through an incubation process known as a Polymerase Chain Reaction (PCR). The amplified DNA samples will then be scanned using genetic analyses that range from paternity tests to criminal forensic analyses. Douglas Scientific has purchased the patent for a prototype DNA water bath incubator that will amplify the DNA samples. This DNA water bath incubation system is operational, but does not perform to the required needs, which is to achieve a high yield in the PCR process. The PCR process is carried out by subjecting the DNA samples to three distinct temperatures for a pre-determined amount of time. The goal of this project is to look at new and innovative designs that can perform the PCR process in the most efficient way. The designs were analyzed and ranked according to various criteria and the highest scoring design was then pursued for the new DNA water bath incubator system.

Presentation Index: W2
Time 5:20 p.m.
Department: Mechanical and Manufacturing Engineering
Project Sponsor(s)
Student Presenter(s): Roth, Andrew; Stromberg, Adam; Bump, Jacob
Byun, Jeongmin

Session W	Natural Sciences	Oak

Design and Synthesis of Photoaffinity Labeling Ligands of the PLG Binding Site Involved in the Modulation of the Dopamine Receptor

Pro-Leu-Gly-NH2 (PLG), in addition to its endocrine effects, possesses the ability to modulate dopamine D2 receptors within the central nervous system. However, the precise binding site of PLG is unknown. A Potential photoaffinity-labeling ligand of the PLG binding site was designed as a tool to be used in the identification of the macromolecule that possesses this binding site. A photoaffinity-labeling ligand was designed and synthesized on the basis of the ã-lactam PLG peptidomimetic 1. The 4-azidobenzoyl photoaffinity-labeling moiety was placed at opposite end of PLG peptidomimetic 1 to generate a ligand that potentially could be used to map the PLG binding site.

Presentation Index: W3
Department: Chemistry
Student Presenter(s):
Gay, Bryant

Time 5:40 p.m.
Project Sponsor(s)
Leenay, Tamara

Effects of Genetically Altered Plants on Honeybees

It is a widely unknown fact that the percentage of honeybees has decreased in the US. Approximately 80% of all insect pollination is performed by the honeybee. Scientists Gene E. Robinson of the University of Illinois reports forager bees who work outside the hive collecting nectar and pollen have lower activity levels of the acetylcholingesterase (AChE) protein in their brains than do younger nurse bees. Pesticides along with other chemical products might affect the honeybee's memory retention allowing them to return to the hive. The decline in worldwide population of bees might soon become critical. The purpose of our research is to critically analyze scientific evidences that are pertinent to the issue and examine a potential link to human health.

Presentation Index: W4
Department: Chemistry
Student Presenter(s):
Mareini, Fatuma; Nang, Quincy; Leet, Jason; Pickrell, Charles; Meyer, Andrew

Time: 6:00 p.m.
Project Sponsor(s)
Sadrai, Mahin

Session X	Science and Engineering III	Mississippi

Quick Die Change

Whirltronics is a lawn mower blade manufacturing company. Blades are sheared out of a roll of strip metal. This is done by a press that uses shear dies. When a job is finished another die must be placed in the press. This procedure is called a die changeover. The die changeover time on one of the shear press cells is too slow for the company's liking. Our team's goal is to: re-design the layout of the press bed and the dies to make die changing quicker and easier, work with the operators to make sure our design benefits them as well as the company, and work with the operators to develop a written procedure for die changeovers. Our design should reduce the die changeover time and increase revenue for the company.

Presentation Index: X1
Department: Mechanical and Manufacturing Engineering
Student Presenter(s):
Larson, Troy; Linhoff, Sam

Time: 5:00 p.m.
Project Sponsor(s)
Bekkala, Andrew

Session X	Science and Engineering III	Mississippi

Digitally Controlled Wireless Relay Switch

The purpose of this project is to automate digitally controlled power supply relay box used in Hot Plug reliability test for enterprise hard drives manufactured in Seagate Technology. For the hot plug test currently Seagate is using manual switching to turn the drive on and off to do test on drive. Each power supply box will supply voltage to 8 different hard drives where hard drives are connected through one data bus to the computer servers. Motivation on doing this project is to build multiple automatic power supply box each box supplying power to 8 different drives at lower cost than other product available in market which can be controlled by user friendly GUI from computer interfaced by serial and Wireless connection. Also output can be monitored on user side to see amount of current flowing on each port. The main purpose of this digital power relay box is to supply power to number of drive. The reliability test actually is done to see effect of one hard drives on the others when the power is switched on and off sequentially. In this project we are only building power supply box to control the switch. The requirements for this project is to supply 5VDC, 12VDC and grounds to all the drives where 12VDC is used to drive the motor and 5VDC is used for other electronics in the hard drive. Each power relay box supplies both voltages to 8 different drives where each of the supply is digitally controlled by GUI through serial interface to turn on or off. Beside the basic requirement we have proposed to make it more versatile by adding wireless connectivity and also power monitor for each drive that will be send back to computer.

Presentation Index: X2
Department: Electrical and Computer Engineering
Student Presenter(s):
Lohani, Ummid; Upreti, Rapan

Time 5:20 p.m.
Project Sponsor(s)
Yao, Aiping

Unattended Ground Vehicle

Hostile environments have traditionally been surveyed and monitored by highly trained professionals. The risk for human injury or fatality can be greatly reduced by first examining these dangerous areas with a variety of sensors delivered by unmanned guided vehicles (UGVs). A project is being conducted by a group of MME and ECE senior students to design and prototype an operational UGV suitable for rugged terrains and adverse weather conditions. This presentation focuses on the mechanical design of mechanisms to carry, deploy, and retrieve a minimum of two sensor pods in coordination with GPS and radio signals.

Presentation Index: X3
Department: Mechanical and Manufacturing Engineering
Student Presenter(s):
Sahr, Mark; Borscheid, Gabriel

Time: 5:40 p.m.
Project Sponsor(s)
Yu, Warren

Session Y	Communications	North Voyageurs

Nonverbal Communication Research Projects

Nonverbal communication surrounds us everyday and provides a significant amount of the meaning we derive from our interaction with others. Three students present research projects completed for a Nonverbal Communication class in which they examined the meanings ascribed to common nonverbal variables.

Presentation Index: Y1
Department: Communication Studies
Student Presenter(s):
Doucette, Neil; Nutter, Jacquelynn; Schulte, Elizabeth

Time 5:00 p.m.
Project Sponsor(s)
Rehling, Diana

Student Presenter Index

Hed, Michelle	9:00 a.m.	Ballroom
Heilig, Sarah	9:00 a.m.	Ballroom
Helm, Renee	2:00 p.m.	South Voyageurs
Hommerding, Jessica	9:00 a.m.	Ballroom
Honeck, Kelly	9:00 a.m.	Ballroom
Idziorek, Joseph	3:00 p.m.	Ballroom
Ilstrup, Rachel	9:00 a.m.	Ballroom
Iserberg, Andy	9:00 a.m.	Ballroom
Jackelen, Tamarah	3:00 p.m.	Lady Slipper
Jahns, Nathan	10:00 a.m.	South Voyageurs
Jangu, Neema	9:00 a.m.	Ballroom
Janisch, Robert	9:00 a.m.	Ballroom
	3:00 p.m.	Ballroom
Janke, Naomi	9:00 a.m.	Ballroom
Jeannot, Lori	9:00 a.m.	Ballroom
Johnson, Kari	9:00 a.m.	Ballroom
Johnson, Loretta	3:00 p.m.	Ballroom
Jones, Sarah	9:00 a.m.	Ballroom
Jordan, Paul	9:00 a.m.	Ballroom
Joshi, Aneesh	9:00 a.m.	Ballroom
Juma, Peter	12:00 p.m.	Lady Slipper
Kabata, Faith	5:00 p.m.	Oak
Kalar, Anne	9:00 a.m.	Ballroom
Kariniemi, Jodi	9:00 a.m.	Ballroom
Karmacharya, Bipin	3:00 p.m.	Ballroom
Karnik, Laura	9:00 a.m.	Ballroom
Kelsey, Sean	2:20 p.m.	Lady Slipper
Kerfeld, Russel	10:20 a.m.	Oak
Khadka, Megha	11:00 a.m.	North Glacier
Khambhampati, Sri , Aparna	9:00 a.m.	Ballroom
King, Kelsey	3:00 p.m.	Ballroom
Knisley, Nikki	9:00 a.m.	Lady Slipper
Knott, Tyler	3:00 p.m.	Ballroom
Kondari, Vamsi	9:00 a.m.	Ballroom
Kovac, Tom	3:00 p.m.	Ballroom
Kovac, Tom	3:00 p.m.	Ballroom
Krekelberg, Elizabeth	11:00 a.m.	Oak
	3:00 p.m.	Ballroom
Krippner, Darcy	9:00 a.m.	Ballroom
Krippner, Mark	9:00 a.m.	Ballroom
Krzenski, Sara	10:00 a.m.	South Glacier
Kuehn, Monica	9:00 a.m.	Ballroom
Kuhlmann, Michelle	3:00 p.m.	Ballroom
Kukkala, Swetha	9:00 a.m.	Ballroom
Kumar, Vijay	3:00 p.m.	North Glacier
Lange, Erica	10:00 a.m.	North Voyageurs
Larson, Teresa	9:00 a.m.	Ballroom
Larson, Troy	5:00 p.m.	Mississippi
Larson-Zepeda, Linda	5:00 p.m.	Lady Slipper
Leahy, Eric	9:00 a.m.	Ballroom
Leet, Jason	6:00 p.m.	Oak
Legatt, Graig	9:00 a.m.	Ballroom
Lenz, Matthew	9:00 a.m.	Ballroom
Leyk, Candace	10:00 a.m.	Oak
Liao, Yuanyuan	9:20 a.m.	North Voyageurs
	5:20 p.m.	North Glacier
Lieser, Elizabeth	9:00 a.m.	Ballroom
Linhoff, Sam	5:00 p.m.	Mississippi
Litzinger, Erin	3:00 p.m.	Ballroom
Loch, Alex	11:20 a.m.	South Glacier
Loehlein, Mike	2:00 p.m.	South Voyageurs
Lohani, Ummid	5:20 p.m.	Mississippi
Lohrman, Sara	2:00 p.m.	South Voyageurs
Lor, Fong	2:00 p.m.	North Voyageurs
Lundquist, Britta	9:00 a.m.	Ballroom
Lymer, LaRae	9:00 a.m.	Ballroom
Lyon, Catherine	3:00 p.m.	Ballroom
Maas, Casey	9:00 a.m.	Ballroom
Mack, Larisa	9:00 a.m.	Ballroom
Mahoney, Ryan	10:20 a.m.	Granite
Malchow, David	9:00 a.m.	Ballroom
Mareini, Fatuma	10:00 a.m.	Lady Slipper
Mareini, Fatuma	6:00 p.m.	Oak
McAdams, Sheila	9:00 a.m.	Ballroom
McAlpine, Brian	3:00 p.m.	Ballroom
McGee, Meghan	3:00 p.m.	Ballroom
McGowan, Emily	9:00 a.m.	Ballroom
Melsha, Maria	11:40 a.m.	Oak
Melykson, Mitchell	9:00 a.m.	Ballroom
Messner, Emily	3:00 p.m.	Ballroom
Mevissen, Laura	9:00 a.m.	Ballroom
Meyer, Andrew	6:00 p.m.	Oak
Meyer, Dana	9:40 a.m.	South Glacier
Michalski, Kathryn	11:00 a.m.	Oak
Moen, Dana	9:00 a.m.	Ballroom
Mom, Mary	9:00 a.m.	Ballroom
Montanez, Melissa	2:00 p.m.	North Voyageurs
Murdy, Sue	9:00 a.m.	Ballroom
Nadeau, Daniel	3:00 p.m.	Ballroom
Nang, Quincy	6:00 p.m.	Oak
Nang, Quincy	6:00 p.m.	Oak
Nelson, Bryan	9:00 a.m.	Ballroom
Nelson, Pam	9:00 a.m.	Ballroom
Nere, Andrew	9:00 a.m.	Ballroom
Nichols, Thomas	2:40 p.m.	North Glacier
Nichols, Todd	3:00 p.m.	Ballroom
Niehoff, Loren	3:00 p.m.	Ballroom
Nilsson, Kaara	9:00 a.m.	Ballroom
Nord, Kristin	9:00 a.m.	Ballroom
Normand, Kevin	3:00 p.m.	Ballroom
Nutter, Jacquelynn	5:00 p.m.	North Voyageurs
Ogaja, Jermaine	9:20 a.m.	Lady Slipper
Ohman, Chris	3:00 p.m.	Ballroom
Olmscheid, Derek	9:00 a.m.	Ballroom
Olson, Rebekah	9:00 a.m.	Ballroom

Opasnawakun, Komgrich	3:00 p.m.	Ballroom
Ormson, Renee	3:00 p.m.	Ballroom
Osbeck, Angela	9:00 a.m.	Ballroom
Otieno, Nelly	10:00 a.m.	Lady Slipper
Ouro-Sama, Azolo	2:00 p.m.	North Voyageurs
Ouro-Sama, Azolo	2:00 p.m.	North Voyageurs
Pamplona, August	9:00 a.m.	Ballroom
Papenguth, Ally	3:00 p.m.	Ballroom
Patel, Pinkle	2:20 p.m.	North Glacier
Pederson, Daved	9:00 a.m.	Ballroom
Pederson, Scott	9:00 a.m.	Ballroom
Pegg, George	2:40 p.m.	Lady Slipper
Perish, Gayle	2:00 p.m.	South Voyageurs
Petersen, David	3:00 p.m.	Ballroom
Peterson, Timothy	9:00 a.m.	Ballroom
Peterson, Tyler	3:00 p.m.	Ballroom
Pickens, Alexandra	9:40 a.m.	North Voyageurs
Pickrell, Charles	6:00 p.m.	Oak
Piotrowski, Aaron	3:00 p.m.	Ballroom
Pitcher, Austin	3:00 p.m.	Ballroom
Pitman, Amber	9:00 a.m.	Ballroom
Plautz, Matthew	3:00 p.m.	Ballroom
Plumski, Duane	11:40 a.m.	Mississippi
Pundsack, Thomas	3:00 p.m.	Ballroom
Rach, Sarah	3:00 p.m.	Ballroom
Rassier, Justin	2:00 p.m.	South Voyageurs
Razim-Fitzsimons, Mary Ann	9:00 a.m.	Ballroom
Reberg, Alexander	9:20 a.m.	South Voyageurs
Redfall, Tansy	10:20 a.m.	Granite
Redington, Josh	2:20 p.m.	Lady Slipper
Reed, Bryan	12:00 p.m.	North Glacier
Reed, Liz	9:00 a.m.	Ballroom
Renn, Corinne	9:00 a.m.	Ballroom
Resman, Nate	12:00 p.m.	Mississippi
Robillard, Jordan	10:00 a.m.	North Glacier
Roiko, Marijo	9:40 a.m.	South Voyageurs
Roth, Andrew	5:20 p.m.	Oak
Rupp, Adam	9:00 a.m.	South Glacier
Sahr, Mark	5:40 p.m.	Mississippi
Saleh, Amir	3:00 p.m.	Ballroom
Sandbulte, Tony	3:00 p.m.	Ballroom
Sanoski, Brian	9:00 a.m.	Ballroom
Savchuk, Alla	9:00 a.m.	Ballroom
Saxton, Kelsey	9:00 a.m.	Ballroom
Schafer, Jason	9:40 a.m.	South Glacier
Schlabach, Gabriel	11:20 a.m.	Lady Slipper
Schlegal, Craig	9:20 a.m.	Oak
Schnobrich, Charlene	9:00 a.m.	Ballroom
Schulte, Elizabeth	5:00 p.m.	North Voyageurs
Schulz, Adam	3:00 p.m.	Ballroom
Schumann, Jennifer	9:00 a.m.	Ballroom
Schumann, Jennifer	9:00 a.m.	Ballroom
Schwenzfeier, Jon	9:00 a.m.	Ballroom
Scully, Shanna	9:00 a.m.	Ballroom
Segura, Monica	11:00 a.m.	Lady Slipper
Semph, Shawn	9:40 a.m.	Granite
Shakya, Rajish	3:00 p.m.	Ballroom
Shionome, Yoshimi	3:00 p.m.	Ballroom
Sipic, Neven	11:40 a.m.	North Glacier
Smith, Abby	3:00 p.m.	Ballroom
Smith, Andrew	3:00 p.m.	Ballroom
Smith, Brandon	3:00 p.m.	Ballroom
Smith, Renee	9:00 a.m.	Oak
Snyder, Suzanne	3:00 p.m.	Ballroom
Solinger, Jodie	9:00 a.m.	Ballroom
Spaulding, Nicole	9:00 a.m.	Ballroom
SPED 416 516	3:00 p.m.	Ballroom
Speich, Brittany	2:00 p.m.	South Voyageurs
Splittstoesser , Andrew	10:00 a.m.	Granite
Stainbrook, Lisa	9:00 a.m.	Ballroom
Staples, Ashley	9:00 a.m.	Ballroom
Steinbach, Ryan	9:00 a.m.	Ballroom
Stephen, Horvat	3:00 p.m.	Ballroom
	6:20 p.m.	Lady Slipper
Storlien, Joseph	3:00 p.m.	Ballroom
Stromberg, Adam	5:20 p.m.	Oak
Sulander, Travis	6:00 p.m.	Lady Slipper
Sullivan, Angela	9:00 a.m.	Ballroom
Sunderland, Toby	10:00 a.m.	Granite
Svare, Bruce	2:20 p.m.	North Glacier
Swanberg, Breanna	10:20 a.m.	Lady Slipper
	2:00 p.m.	North Voyageurs
Swanson, Gregory	3:00 p.m.	Ballroom
Swanson, Jackie	2:00 p.m.	South Voyageurs
Swanson, Joshua	3:00 p.m.	Ballroom
Swenson, Samuel	9:00 a.m.	Ballroom
Tack, Martha	9:00 a.m.	Ballroom
Thell, Alex	11:40 a.m.	Oak
Toenjes, Ashley	9:40 a.m.	Lady Slipper
Tomczik, Kelly	9:00 a.m.	Ballroom
Triemstra, Jennifer	9:00 a.m.	Ballroom
Tsan, Fei Chin	9:00 a.m.	Ballroom
Tschida, Adam	11:40 a.m.	Mississippi
Unanaowo, Arit	9:00 a.m.	Ballroom
Upreti, Rapan	5:20 p.m.	Mississippi
Verdeja, Cassie	3:00 p.m.	Ballroom
Vogt, Matthew	11:20 a.m.	North Glacier
Walcheski, Christina	9:00 a.m.	Ballroom
Walker, Cristl	2:40 p.m.	North Glacier
Walters, Kerrie	9:00 a.m.	Ballroom
Wang, Tingting	5:20 p.m.	North Glacier
	5:40 p.m.	North Glacier
Warns, Courtny	3:00 p.m.	Ballroom
Watson, Cory	10:20 p.m.	North Glacier

Weber, Nina	9:00 a.m.	Ballroom
Weiley, Kelly	9:00 a.m.	Ballroom
Wheeler, Jamie	9:20 a.m.	North Glacier
Wiant, Molly	11:00 a.m.	South Glacier
Wieland, Carl	9:00 a.m.	South Glacier
Williams, Casey	9:20 a.m.	Oak
	3:00 p.m.	Ballroom
Winkelman, Angela	9:00 a.m.	Ballroom
Winkelman, Angela	9:00 a.m.	Ballroom
Wong, Kuan Shen	3:00 p.m.	Ballroom
Yaeger, Kelly	9:00 a.m.	Ballroom
Yanjon, Tsering	3:00 p.m.	Ballroom
Zeleke, Hermon	2:00 p.m.	North Voyageurs

Faculty Sponsor Index

Faculty Sponsor	Department	Presentation Index	Time	Room
Aceves, Robert	Aviation	G1	9:00 a.m.	Granite
		G2	9:20 a.m.	Granite
		G3	9:40 a.m.	Granite
		G4	10:00 a.m.	Granite
		G5	10:20 a.m.	Granite
		M1	11:00 a.m.	Mississippi
		M2	11:20 a.m.	Mississippi
		P3	2:40 p.m.	North Glacier
		U1	5:00 p.m.	North Glacier
Ahmed, Niaz	Mass Communications	A32	9:00 a.m.	Ballroom
Arriagada, Jorge	Biological Sciences	A41	9:00 a.m.	Ballroom
Baker, Randal	Geography	I3	11:40 a.m.	North Glacier
Banaian, King	Economics	D2	9:20 a.m.	Lady Slipper
Bejan, Alina	Computer Science	A22	9:00 a.m.	Ballroom
Bekkala, Andrew	Mechanical and Manufacturing Engineering	X1	5:00 p.m.	Mississippi
Bender, Mitch	Environmental and Technological Studies	A30	9:00 a.m.	Ballroom
		A39	9:00 a.m.	Ballroom
		T14	3:00 p.m.	Ballroom
		T20	3:00 p.m.	Ballroom
		T33	3:00 p.m.	Ballroom
Berila, Elizabeth	Women's Studies	T7	3:00 p.m.	Ballroom
Beutel, Dory	Special Education	T42	3:00 p.m.	Ballroom
Buswell, Brenda	Psychology	A29	9:00 a.m.	Ballroom
		H3	9:40 a.m.	Oak
Byun, Jeongmin	Mechanical and Manufacturing Engineering	W2	5:20 p.m.	Oak
Casanova, Steve	Ethnic Studies	N1	2:00 p.m.	North Voyageurs
Cetkovic-Cvrlje, Marina	Biological Sciences	A38	9:00 a.m.	Ballroom
		T16	3:00 p.m.	Ballroom

Faculty Sponsor	Department	Presentation Index	Time	Room
Cha, Dia	Ethnic Studies	D5	10:20 a.m.	Lady Slipper
Chen, Jim	Business Computer Information Systems	C 5	10:20 a.m.	South Glacier
Covey, Steven	Mechanical and Manufacturing Engineering	C 1	9:00 a.m.	South Glacier
		M3	11:40 a.m.	Mississippi
Davis, Tricia	Sociology and Anthropology	S4	3:00 p.m.	Lady Slipper
DeBruycker, Jo	Nursing Science	A5	9:00 a.m.	Ballroom
Deng, Xidong	Electrical and Computer Engineering	T38	3:00 p.m.	Ballroom
DeVoe, Marlene	Psychology	A11	9:00 a.m.	Ballroom
		A13	9:00 a.m.	Ballroom
		H1	9:00 a.m.	Oak
		H2	9:20 a.m.	Oak
		T48	3:00 p.m.	Ballroom
Dorn, Judith	English	F3	9:40 a.m.	North Voyageurs
Eickhoff, Carol	Nursing Science	A2	9:00 a.m.	Ballroom
		A9	9:00 a.m.	Ballroom
Fish, Marjorie	Mass Communications	K4	12:00 p.m.	Lady Slipper
Frank, Stephen	Political Science	O1	2:00 p.m.	South Voyageurs
Gazal, Oladele	Biological Sciences	T5	3:00 p.m.	Ballroom
Gill, Kate	Philosophy	V4	6:00 p.m.	Lady Slipper
Glazos, Michael	Electrical and Computer Engineering	A44	9:00 a.m.	Ballroom
		T38	3:00 p.m.	Ballroom
Greaves, Edward	Political Science	D3	9:40 a.m.	Lady Slipper
Gregory, Daniel	Chemistry	A15	9:00 a.m.	Ballroom
		J2	11:20 a.m.	Oak
		T40	3:00 p.m.	Ballroom
Guster, Dennis	Business Computer Information Systems	C 4	10:00 a.m.	South Glacier
Haeg, Claire	Political Science	K2	11:20 a.m.	Lady Slipper
Haglin, Kevin	Physics, Astronomy and Engineering Science	T8	3:00 p.m.	Ballroom
Havir, Linda	Sociology and Anthropology	D1	9:00 a.m.	Lady Slipper
		K1	11:00 a.m.	Lady Slipper
Heinrich, Lisa	Mass Communications	K4	12:00 p.m.	Lady Slipper
		S1	2:00 p.m.	Lady Slipper
Hochmair, Henry	Geography	C 2	9:20 a.m.	South Glacier
Hope, Liddy	Sociology and Anthropology	K3	11:40 a.m.	Lady Slipper
Hou, Ling	Electrical and Computer Engineering	T38	3:00 p.m.	Ballroom

Faculty Sponsor	Department	Presentation Index	Time	Room
Huber-Warring, Tonya	Human Relations and Multicultural Education	A19	9:00 a.m.	Ballroom
		A48	9:00 a.m	Ballroom
		A49	9:00 a.m.	Ballroom
		A54	9:00 a.m.	Ballroom
		T36	3:00 p.m.	Ballroom
Illies, Jody	Psychology	A35	9:00 a.m.	Ballroom
Jacobson, Bruce	Biological Sciences	A28	9:00 a.m.	Ballroom
Jazwinski, Christine	Psychology	A17	9:00 a.m.	Ballroom
		A33	9:00 a.m.	Ballroom
Jeannot, Michael	Chemistry	A20	9:00 a.m.	Ballroom
		M4	12:00 p.m.	Mississippi
John, Gareth	Geography	B1	9:00 a.m.	North Glacier
		B2	9:20 a.m.	North Glacier
		B3	9:40 a.m.	North Glacier
		B4	10:00 a.m.	North Glacier
		B5	10:20 p.m.	North Glacier
		I1	11:00 a.m.	North Glacier
		I2	11:20 a.m.	North Glacier
		I4	12:00 p.m.	North Glacier
		T17	3:00 p.m.	Ballroom
		T28	3:00 p.m.	Ballroom
		T44	3:00 p.m.	Ballroom
Johnson Warner, Susan	Nursing Science	A3	9:00 a.m.	Ballroom
Jorgensen, Leeann	Community Psychology	T11	3:00 p.m.	Ballroom
Julius, Matthew	Biological Sciences	E4	10:00 a.m.	South Voyageurs
Karasik, Rona	Gerontology	T15	3:00 p.m.	Ballroom
Kellogg, Polly	Human Relations and Multicultural Education	K1	11:00 a.m.	Lady Slipper
Kim, Choonkyong	English	U3	5:40 p.m.	North Glacier
Koffi, Ettien	English	U2	5:20 p.m.	North Glacier
Kubesh, Rodney	Earth and Atmospheric Sciences	A46	9:00 a.m.	Ballroom
		T45	3:00 p.m.	Ballroom
Kuhlman, Brad	Counselor Education and Educational Psychology	A31	9:00 a.m.	Ballroom
Kvaal, Christopher	Biological Sciences	E2	9:20 a.m.	South Voyageurs
		E3	9:40 a.m.	South Voyageurs
		T41	3:00 p.m.	Ballroom

Faculty Sponsor	Department	Presentation Index	Time	Room
Lee, Kathy		E4	10:00 a.m.	South Voyageurs
Leenay, Tamara	Chemistry	E5	10:20 a.m.	South Voyageurs
		W3	5:40 p.m.	Oak
Lehman, Christopher	Ethnic Studies	K4	12:00 p.m.	Lady Slipper
Lenz, Brenda	Nursing Science	A2	9:00 a.m.	Ballroom
		A3	9:00 a.m.	Ballroom
		A4	9:00 a.m.	Ballroom
		A5	9:00 a.m.	Ballroom
		A7	9:00 a.m.	Ballroom
		A8	9:00 a.m.	Ballroom
		A9	9:00 a.m.	Ballroom
Lidberg, Russell	Physics, Astronomy and Engineering Science	T29	3:00 p.m.	Ballroom
		T9	3:00 p.m.	Ballroom
Mahroof-Tahir, Mohammad	Chemistry	T19	3:00 p.m.	Ballroom
		W1	5:00 p.m.	Oak
McKenna, Jack	Chemistry	A10	9:00 a.m.	Ballroom
Mechelke, Mark		A1	9:00 a.m.	Ballroom
		A23	9:00 a.m.	Ballroom
		A24	9:00 a.m.	Ballroom
		T18	3:00 p.m.	Ballroom
Melcher, Joseph	Psychology	A53	9:00 a.m.	Ballroom
Mierkiewicz, Ed	Physics, Astronomy and Engineering Science	T1	3:00 p.m.	Ballroom
Miller, Kenneth	Mechanical and Manufacturing Engineering	J3	11:40 a.m.	Oak
Minger, Mark	Biological Sciences	T32	3:00 p.m.	Ballroom
		T6	3:00 p.m.	Ballroom
Mohrbacher, Carol	English	F1	9:00 a.m.	North Voyageurs
Mueller, Isolde	Foreign Languages and Literature	L4	12:00 p.m.	South Glacier
		V3	5:40 p.m.	Lady Slipper
Murphy, Robert	Statistics and Computer Networking	E4	10:00 a.m.	South Voyageurs
Mwangi, Mumbi	Women's Studies	D4	10:00 a.m.	Lady Slipper
Neu, Don	Chemistry	A43	9:00 a.m.	Ballroom
Onyiah, Leonard	Statistics and Computer Networking	P1	2:00 p.m.	North Glacier
Palm, Glen	Child and Family Studies	T4	3:00 p.m.	Ballroom
Petzold, Mark	Electrical and Computer Engineering	A46	9:00 a.m.	Ballroom
		P2	2:20 p.m.	North Glacier
		T37	3:00 p.m.	Ballroom

Faculty Sponsor	Department	Presentation Index	Time	Room
Pickle, Michael	Special Education	T42	3:00 p.m.	Ballroom
		T43	3:00 p.m.	Ballroom
		T46	3:00 p.m.	Ballroom
Polacco, Alex		S2	2:20 p.m.	Lady Slipper
		S3	2:40 p.m.	Lady Slipper
Pound, Kate	Earth and Atmospheric Sciences	T2	3:00 p.m.	Ballroom
Przytula, Tomasz	Mass Communications	H4	10:00 a.m.	Oak
Rangamani, Grama	Communication Sciences and Disorders	A21	9:00 a.m.	Ballroom
Rapp, John	Community Psychology	A50	9:00 a.m.	Ballroom
Rapp, John	Community Psychology	T39	3:00 p.m.	Ballroom
Rehling, Diana	Communication Studies	Y1	5:00 p.m.	North Voyageurs
Restani, Marco	Biological Sciences	A34	9:00 a.m.	Ballroom
Robinson, David	Statistics and Computer Networking	O1	2:00 p.m.	South Voyageurs
Robinson, James	English	F2	9:20 a.m.	North Voyageurs
Rose, Charles	Environmental and Technological Studies	A51	9:00 a.m.	Ballroom
Sadrai, Mahin	Chemistry	A40	9:00 a.m.	Ballroom
		J1	11:00 a.m.	Oak
		W4	6:00 p.m.	Oak
Scheel-Keita, Elizabeth	Sociology and Anthropology	T7	3:00 p.m.	Ballroom
Schmidt, Mark	Business Computer Information Systems	P4	3:00 p.m.	North Glacier
Schoenfuss, Heiko	Biological Sciences	E4	10:00 a.m.	South Voyageurs
		T30	3:00 p.m.	Ballroom
		T50	3:00 p.m.	Ballroom
Schorn-Rhoda, Mary Ann	Nursing Science	A4	9:00 a.m.	Ballroom
		A7	9:00 a.m.	Ballroom
		A8	9:00 a.m.	Ballroom
Schuh, Timothy	Biological Sciences	T3	3:00 p.m.	Ballroom
Simpson, Patricia		A14	9:00 a.m.	Ballroom
		A18	9:00 a.m.	Ballroom
		A27	9:00 a.m.	Ballroom
		T10	3:00 p.m.	Ballroom
Splittgerber, Lisa	Foreign Languages and Literature	F4	10:00 a.m.	North Voyageurs
		L1	11:00 a.m.	South Glacier
		L2	11:20 a.m.	South Glacier
		R1	2:00 p.m.	Little Theatre

Faculty Sponsor	Department	Presentation Index	Time	Room
Splittgerber, Lisa	Foreign Languages and Literature	V1	5:00 p.m.	Lady Slipper
		V2	5:20 p.m.	Lady Slipper
		V5	6:20 p.m.	Lady Slipper
Sreerama, Lakshmaiah	Chemistry	A12	9:00 a.m.	Ballroom
		A16	9:00 a.m.	Ballroom
		A42	9:00 a.m.	Ballroom
		A6	9:00 a.m.	Ballroom
		J2	11:20 a.m.	Oak
		T21	3:00 p.m.	Ballroom
		T23	3:00 p.m.	Ballroom
		T25	3:00 p.m.	Ballroom
		T27	3:00 p.m.	Ballroom
		T3	3:00 p.m.	Ballroom
		T31	3:00 p.m.	Ballroom
		T35	3:00 p.m.	Ballroom
		T49	3:00 p.m.	Ballroom
Thamvichai, Ratchaneekorn	Electrical and Computer Engineering	T13	3:00 p.m.	Ballroom
Triana-Echeverria, Luz C.	Foreign Languages and Literature	L3	11:40 a.m.	South Glacier
Tubbiola, Maureen	Biological Sciences	A37	9:00 a.m.	Ballroom
		T12	3:00 p.m.	Ballroom
		T24	3:00 p.m.	Ballroom
Valdes, Leslie	Psychology	H3	9:40 a.m.	Oak
		H5	10:20 a.m.	Oak
Villanueva, Margaret	Community Studies	K1	11:00 a.m.	Lady Slipper
Vogt, Timothy	Electrical and Computer Engineering	A45	9:00 a.m.	Ballroom
		A47	9:00 a.m.	Ballroom
		T22	3:00 p.m.	Ballroom
Wagner, Steven	Political Science	O1	2:00 p.m.	South Voyageurs
Waletzko, Patty	Special Education	T42	3:00 p.m.	Ballroom
Whites, Margery	Communication Sciences and Disorders	A25	9:00 a.m.	Ballroom
		A26	9:00 a.m.	Ballroom
		A36	9:00 a.m.	Ballroom
Yao, Aiping	Electrical and Computer Engineering	X2	5:20 p.m.	Mississippi
Yu, Warren	Mechanical and Manufacturing Engineering	C 3	9:40 a.m.	South Glacier
		X3	5:40 p.m.	Mississippi

Acknowledgements

Planning Committee members for the 10th Annual St. Cloud State University Student Research Colloquium 2007 include the following:

- Leslie Valdes, Department of Psychology
- Irene Voth, College of Science and Engineering
- Linda Donnay, Office of Sponsored Programs
- Balsy Kasi, Department of Environmental and Technological Studies
- Stuart Umberger, University Organizations and Leadership Development

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- Gary Bailey from University Communications
- Staff of Printing Services
- Staff of Center for Information Services
- General Maintenance Workers for the Atwood Memorial Center
- Session Moderators
- Registration Table Volunteers
- Best Poster Judging Team
- Psychology Students (registration table)

Sponsoring Organizations

The annual St. Cloud State University Student Research Colloquium is sponsored by the following organizations:

- Office of Academic Affairs
- Office of Sponsored Programs
- College of Science and Engineering
- College of Fine Arts and Humanities

Donors

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- Student Government
- Phi Kappa Phi Honor Society
- Husky Bookstore
- Bernick's Pepsi

If you wish to support the Student Research Colloquium, donations may be submitted to the Student Research Colloquium account (#27602) at the St. Cloud State University Foundation, Alumni and Foundation Center, 720 Fourth Avenue South, St. Cloud, MN 56301-4498.

Floor Plan for Atwood Memorial Center