4-16-2013

# Student Research Colloquium Proceedings 2013

St Cloud State University

SCHOLARSHIP

CREATIVITY

# STUDENT RESEARCH COLLOQUIUM

DISCOVERY

DEVELOPMENT

ACTIVE LEARNING

2013

INTERDISCIPLINARY

ENGAGEMENT

PARTNERSHIP

COMMUNITY

EXPLORATION

GLOBALIZATION

COLLABORATION

INNOVATION

## PROCEEDINGS

**TUESDAY, APRIL 16, 2013**

8 AM - 8 PM • Atwood Memorial Center

ST. CLOUD STATE UNIVERSITY™

EDUCATION FOR LIFE.

# 16th Annual Student Research Colloquium

**April 16, 2013**


**WORKSHOPS:** 12:30 – 1:30 PM

**"GRADUATE SCHOOL MYSTERY REVEALED"** – Voyageurs North

- Who and how questions answered about graduate school

**"GRANT WRITING 101 FOR STUDENTS"** – Voyageurs South

- Intro to searching for fellowships, scholarships and external funds to support academic projects

**RECEPTION AND CLOSING CEREMONY** – CASCADE ROOM

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

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

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

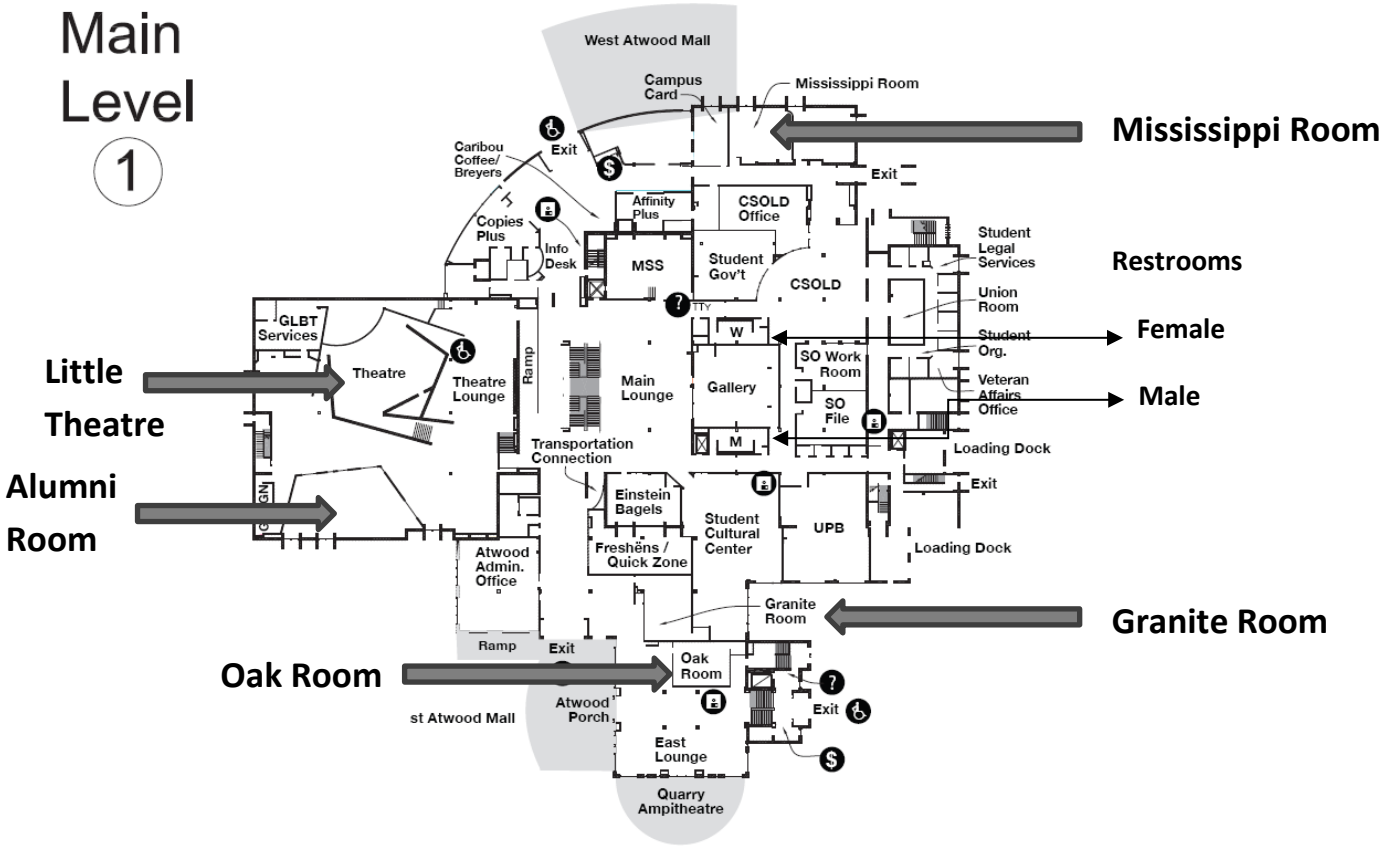
As a green initiative, the full Proceedings booklet, which includes project abstracts, is available on CD at the registration desk and on the Student Research Colloquium website at www.stcloudstate.edu/src/proceedings.

## SCHEDULE OF EVENTS

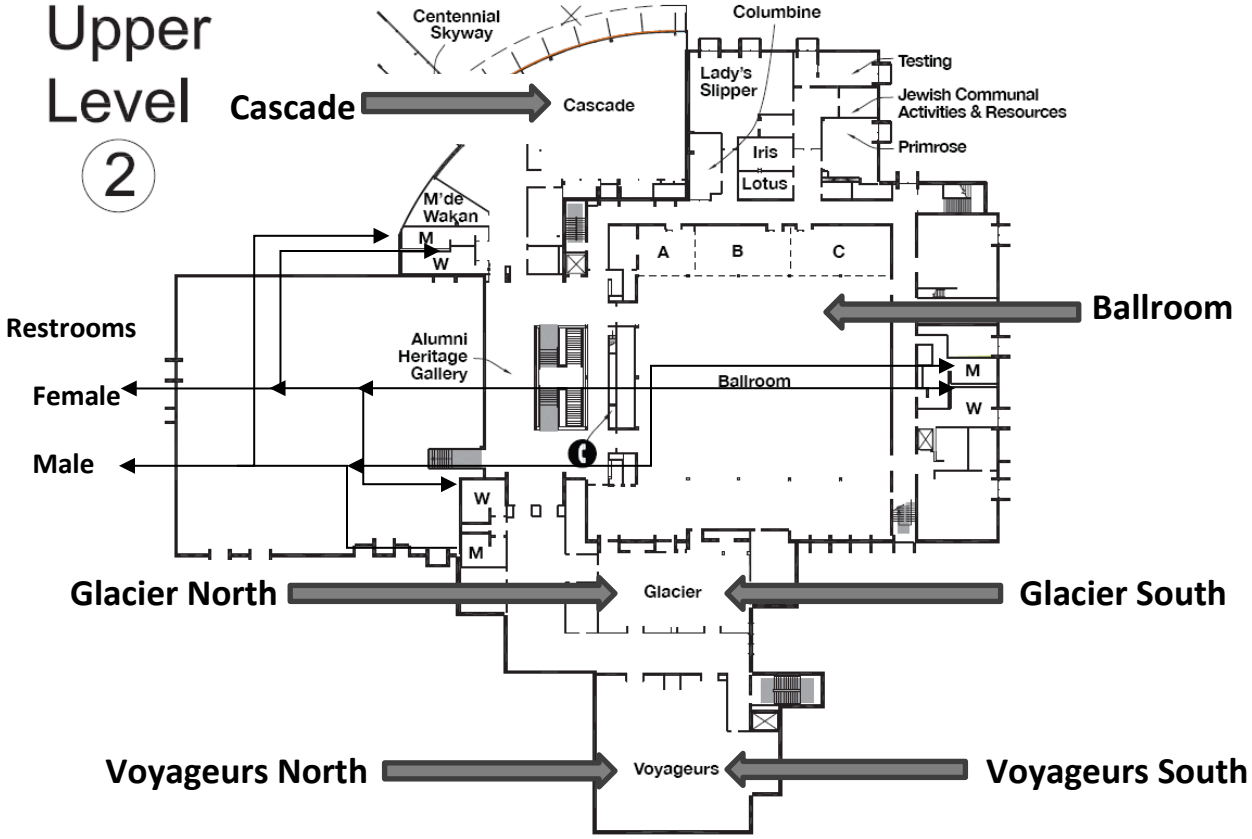
| Session | Event | Time | Room |
|---|---|---|---|
| Session A-GN | Leadership | 8:00 AM - 9:20 AM | Glacier North |
| Session A-GS | Spring Survey 2013 | 8:00 AM - 9:20 AM | Glacier South |
| Session A-VN | Information Systems I | 8:00 AM - 9:20 AM | Voyageurs North |
| Session A-VS | Science and Engineering I | 8:00 AM - 9:20 AM | Voyageurs South |
| Session B-B | Poster Presentations I | 9:00 AM - 10:30 AM | Ballroom |
| Session C-A | Language and Culture | 9:30 AM - 10:50 AM | Alumni |
| Session C-C | Paper Competition I | 9:30 AM - 10:50 AM | Cascade |
| Session C-GN | Community and Culture | 9:30 AM - 10:50 AM | Glacier North |
| Session C-GS | Computer Forensics I | 9:30 AM - 10:50 AM | Glacier South |
| Session C-VN | Statistics I | 9:30 AM - 10:50 AM | Voyageurs North |
| Session C-VS | Science and Engineering II | 9:30 AM - 10:50 AM | Voyageurs South |
| Session D-C | Paper Competition II | 11:00 AM - 12:20 PM | Cascade |
| Session D-GN | System Design | 11:00 AM - 12:20 PM | Glacier North |
| Session D-GS | Diversity and Media | 11:00 AM - 12:20 PM | Glacier South |
| Session D-LT | Creative Performances | 11:00 AM - 12:20 PM | Little Theatre |
| Session D-VN | Social and Behavioral Studies I | 11:00 AM - 12:20 PM | Voyageurs North |
| Session D-VS | Science and Engineering III | 11:00 AM - 12:20 PM | Voyageurs South |
| Session E-VN | Graduate School Mystery Revealed | 12:30 PM - 1:30 PM | Voyageurs North |
| Session E-VS | Grant Writing 101 for Students | 12:30 PM - 1:30 PM | Voyageurs South |
| Session E-C | Paper Competition III | 12:50 PM - 2:40 PM | Cascade |
| Session F-A | Humanities and Fine Arts | 2:00 PM - 3:20 PM | Alumni |
| Session F-GN | Statistics II | 2:00 PM - 3:20 PM | Glacier North |
| Session F-GS | Computer Forensics II | 2:00 PM - 4:00 PM | Glacier South |
| Session F-VN | Social and Behavioral Studies II | 2:00 PM - 3:20 PM | Voyageurs North |
| Session F-VS | Rhetoric and Writing | 2:00 PM - 3:20 PM | Voyageurs South |
| Session G-B | Poster Presentations II | 2:00 PM - 3:30 PM | Ballroom |
| Session H-GN | Cultural and Social Influences on Behavior and Self Expression | 3:30 PM - 4:50 PM | Glacier North |
| Session H-VN | Improving and Preserving Systems | 3:30 PM - 4:50 PM | Voyageurs North |
| Session H-VS | Information Systems | 3:30 PM - 4:50 PM | Voyageurs South |
| Session I-B | Poster Presentations III | 4:00 PM - 5:30 PM | Ballroom |
| Session J-GN | Productivity | 5:00 PM - 6:20 PM | Glacier North |
| Session J-VN | Engineering | 5:00 PM - 6:20 PM | Voyageurs North |
| Session K-C | Reception and Awards Ceremony | 6:30 PM - 8:00 PM | Cascade |

# Floor Plan for Atwood Memorial Center

## Main Level 1




## Upper Level 2



## STUDENT RESEARCH COLLOQUIUM PROGRAM

**Session A-GN Leadership** **Glacier North**

**Moderator** Bassey Eyo, Professor, Communication Studies; Coordinator, SCSU Global Leadership Institute

| Time | Index | Presenter(s) | Project Title |
|---|---|---|---|
| 8:00 AM | 1 | Panchyshyn, Vanessa | The 50% We Don't Know: Followership |
| 8:20 AM | 2 | Hartzell, Kaitlyn | Ethical Leadership and the LGBT Community |
| 8:40 AM | 3 | Rogers, Lindsey | Merging Corporate and Social Leadership: A New Model |
| 9:00 AM | 4 | Poepping, David | Influences on the Boston Stamp Act Crisis |

**Session A-GS Spring Survey 2013** **Glacier South**

**Moderator** Michelle Kukoleca Hammes, Associate Professor, Political Science

| Time | Index | Presenter(s) | Project Title |
|---|---|---|---|
| 8:00 AM | 1 | Stay, Karen; Amisi, Thierry; Ilboudo, Patrick; Kafle, Bikal; Kelly, Kimberly; Moulder, Breanna; Smith, Jacob; Svendsen, Benjamin | Spring Survey of SCSU Students 2013 |

**Session A-VN Information Systems I** **Voyageurs North**

**Moderator** Susantha Herath, Professor, Information Systems

| Time | Index | Presenter(s) | Project Title |
|---|---|---|---|
| 8:00 AM | 1 | Yang, Allen; Roelle, Gregory; Katzmarek, Angela; Pitts, Terry; Scotting, Amanda | Processing Speed Variation |
| 8:20 AM | 2 | Paulson, Benjamin; Schwarting, Joel | Can a Distributed Key System Broken up Over Multiple Nodes Provide Greater Security Robustness While Meeting System Performance Requirements? |
| 8:40 AM | 3 | Pearson, Anthony | Should I Use Open Source Software? |

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

**Moderator** Kenneth Miller, Associate Professor, Manufacturing and Mechanical Engineering

| Time | Index | Presenter(s) | Project Title |
|---|---|---|---|
| 8:00 AM | 1 | Irving-Hewey, Ruby | A Comparative Analysis of Contaminant Removal in Two Residential Stormwater Ponds |
| 8:20 AM | 2 | Baumann, Travis | Muscle Differentiation in the Waterfall Climbing Hawaiian Goby |
| 8:40 AM | 3 | Graff, Isaac; Young, Timothy; Flatz, Cole | FSAE: Car Project |
| 9:00 AM | 4 | Johnston, Faith; Magnan, Logan; Gould, Peter | Medical Device Design Process |

## STUDENT RESEARCH COLLOQUIUM PROGRAM

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

**Moderator** Jonathan Foss, Assistant Director for Fraternity and Sorority Life

| Time | Index | Presenter(s) | Project Title |
|---|---|---|---|
| 9:00 AM | 1 | Schwieters, Rita; Sperzel, Kristin | Twitter in the Chemistry Classroom |
| 9:00 AM | 2 | Horn, Jacob; Anderson, Benjamyn | Alignment and Test of an All-Reflection Real Fringe DASH Interferometer |
| 9:00 AM | 3 | Anderson, Benjamyn; Ulrich, Keith | Automated Robot Chassis |
| 9:00 AM | 4 | Wang, LuLu; Kettlewell, Jason; Horn, Jacob | Sleep Cycle Monitoring Alarm Clock |
| 9:00 AM | 5 | Muhonen, Rianne; Herrala, Brent; Ackerman, Jacque; Riordan, Megan; Rudziva, Tatenda; Weber, Laura; Richter, Danielle; Brezinka, Katie; Goerdt, Briana; Engh, Kaycie | Buffalo Trail-Marker Survey |
| 9:00 AM | 6 | Fuchs, Matt; Emslander, Erin | Pesticides and Parkinsons |
| 9:00 AM | 8 | Erickson, Sarah; Athmacharan, Varshni; Stenerson, Sandra; Anderson, Robert; Hoyme, Alissa | Resources and Strategies Used by Speech-Language Pathologists to Address Ethical Dilemmas |
| 9:00 AM | 9 | Edwards, Bretta; Erdahl, Thomas; Gaikwad, Sampada; Halonen, Daniel; Lo, Siu-Pong; Nwoke, Uchechukwu | Investigation of Success in Blended Learning Sections of ENGL 191 and LIB 180, Using ISRS and Map-Works Data |
| 9:00 AM | 10 | Teachout, Jenita; Klinkhammer, Nichole; Martell, Heather; Gip, Melanie; Lee, Seng Tiong; Holstad, Maren; Igoe, Jacob; Gruis, Thomas; Omoke, Emmanuel; Rajkarnikar, Sagun | Stearns County Public Health Breastfeeding Resources |
| 9:00 AM | 11 | Thapa, Jenny | Comparison of Full-time and Part-time Students at SCSU |
| 9:00 AM | 12 | Ferguson, Connor | Travels Through the Air |
| 9:00 AM | 13 | Manuel, Laura; Andersen, Joshua; Blumhoefer, Michael | A Comparison of Flight Experiences |
| 9:00 AM | 14 | Chitrakar, Baadal; Lea, Allan; Phung, Huong; Lamsal, Vivek; Gong, Hwee Kiat | Effect of Persistent Organic Pollutants on Proliferative Capacity of Immune Cells |
| 9:00 AM | 15 | Dumke, Addison | Synthesis of an Anti-Cancer Drug Using Goniothalamin as a Natural Product Template |
| 9:00 AM | 16 | Osborne, Tashiana | Distinctive Characteristics of Blue Hole 5, San Salvador Island, Bahamas |
| 9:00 AM | 17 | Gopali, Bishow | Expression, Isolation, Purification and Analysis of ALDH-9A1, a Fusion Protein from *E.Coli* |
| 9:00 AM | 18 | Simon, Tricia | Motivational Interviewing and Student Alcohol Use |
| 9:00 AM | 19 | Schleppenbach, Alexis; Larson, Jillian; Phuyal, Samjhana; Greenwaldt, Courtney; Twinawe, Sarah; Ezepue, Patricia; Hill, Mackenna; Leet, Tracey | Accessibility to Oral Care in Litchfield |

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|---|---|---|---|
| 9:00 AM | 20 | Ivancich, Kelsey | International Student Usage of Campus Recreation Facilities at the College of St. Benedict |
| 9:00 AM | 21 | Kowalke, Lori; Fischer, Kelsey; Larson, Halie; Berry, Julie; Traczek, Cara; Eschrich, Alyssa; Hicks, Elizabeth | What is the Origin of the Holocaust? |
| 9:00 AM | 22 | Willaert, Emily | The Capability of a Random Forest to Predict Crouch Gait Status of Adolescents with Cerebral Palsy |
| 9:00 AM | 23 | Holmes, Kelley | Perceived Importance of Strength and Conditioning Relative to Sports Orientation in Junior Alpine Ski Racers |
| 9:00 AM | 24 | Jagodzinski, Nicole; Pakhreen, Sushma | A Comparative Study of Success Measures in Off-Campus and On-Campus First Year Students at St. Cloud State University |
| 9:00 AM | 25 | Grussing, Cara; Richards, Pauline | Creating a Peer Mentor Program for Underprepared Students at a Technical and Community College |
| 9:00 AM | 27 | Duerkop, Peter | Plant Functional Response to Prescribed Fire Regime Variables |
| 9:00 AM | 28 | Khan, Adib; Maharjan, Kuldip; Shrestha, Gamir | Smart Mug |
| 9:00 AM | 29 | Yahya, Nawal | Effects of Age and Gender on Thyrotropin and Thyroid Hormones Among Western Sudanese |
| 9:00 AM | 30 | Tamang, Ritu; Khadka, Elina | Flu Vaccine - So How Effective is it? |
| 9:00 AM | 31 | Palmer, Justin | Century Farms of Melrose Township |
| 9:00 AM | 32 | Smiles, Deondre | St. Cloud State and the Graduate Geographic Hinterland |
| 9:00 AM | 33 | Zhang, Borui | Study and Analysis of Intelligibility Problems on Consonants Between Chinese English and General American English |
| 9:00 AM | 34 | Alfaro Cruz, Jose | Acoustic Vowel Space of Low Vowels |
| 9:00 AM | 35 | Kroll, Alastriona | Punk Goes Criminal: Does Music Transform Youth Into a Political Threat? |
| 9:00 AM | 36 | Ruanglertsilp, Ekkarat | Acoustics Fricatives and Affricates |
| 9:00 AM | 37 | Haugen, Leah | Phonetic Variation Between P and B |
| 9:00 AM | 38 | Larson, KatiLee | Do Re Me: Sight Reading Music Notation |
| 9:00 AM | 39 | McInnis, Marnie; Berthiaume, Alissa; Bowen, Syrena; Miller, Meghan; Swanson, Rochelle | Speech-Language Pathologists Satisfaction with Workplace Ethics Policies and Procedures |
| 9:00 AM | 40 | Frank, Kendall; Greiner, Eric; Kelm, Jordan | Choosing a Vendor Managed Inventory System |
| 9:00 AM | 41 | Soderling, Stephanie | Study of Science and Society's Views on the Benefits of Space Experiments |
| 9:00 AM | 42 | Bendoraitis, Emily; Proell, Hannah; Onken, Jessica; Qualen, Paula; Regnier, Stacy | Steps Speech-Language Pathologists Take to Resolve Ethical Dilemmas |
| 9:00 AM | 43 | Gebremariam, Bereket; Mitiku, Aida | Remote Air Quality Monitor Device |

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|---|---|---|---|
| 9:00 AM | 44 | Engelen, Kelsey | Environmental Development and Human Displacement: An Analysis of the Divergence and Integration of Environmental and Human Needs in Botswana and Nepal |
| 9:00 AM | 45 | Vallis, Amanda | Contact Zones of the Winnebago: Tracing Cultural Exchange from Wisconsin to Nebraska, 1634-1874 |
| 9:00 AM | 46 | Acharya, Jyotindra; Sze Tho, Min Soon | Robotic Applications in Small Businesses |
| 9:00 AM | 47 | Beaudry, Katherine | Obesity in America and Education of Healthy Living |
| 9:00 AM | 48 | Panek, Kimberly | Would You Like Aresenic With That? |
| 9:00 AM | 49 | Milkovich, Steven | Comparison of Barefoot and Shod, Sub Maximal Triple Jumping |
| 9:00 AM | 50 | Klinkner, Brandy | How Safe is Fluoride in Our Water? |
| 9:00 AM | 51 | Studniski, Hien | CSB/SJU Bonner Program |
| 9:00 AM | 52 | Cline-Cole, Anita | Student Workshop on Networking, Image Savvy and First Impressions |
| 9:00 AM | 53 | Staszewski, Zachary | Be a Community Superhero Workshop |
| 9:00 AM | 54 | O'Doherty, Adam | Culminating Experience at the SCSU Minnesota Teacher Licensure Exam Center |
| 9:00 AM | 55 | Huwe, Gretchen | Practicum in the Office of Residential Life |
| 9:00 AM | 56 | Holstad, Deb | Individual Learning Styles |
| 9:00 AM | 57 | Thorstad, Kimberly | Understanding The Minnesota Teacher Licensure Exams (MTLE) |
| 9:00 AM | 58 | Hughes, Tyla | Attention and Aging Stereotypes |
| 9:00 AM | 59 | Meade, Jesse | Immigration Path and Livelihood of Somali People in Stearns County |
| 9:00 AM | 62 | Rogers, Meredith | Community College Connection (SCSU/SCTCC) |
| 9:00 AM | 64 | Arola, Kyle | Restoration of Eastern White Pine at Mille Lacs Kathio State Park |
| 9:00 AM | 65 | Duran, Terren | Fostering Faculty & Student Engagement in Research within the Academy |
| 9:00 AM | 66 | Songnaba, Pengdwende | Bioinformatic Analysis of Cysteine and Methionine Biosynthesis Pathway in the *Bacillus cereus* ATCC 14579 |
| 9:00 AM | 67 | Sheikh, Mohamed Deq | Development and Monitoring of a Lignin Depolymerization by Laccase Using Cellulolytic Microorganisms |
| 9:00 AM | 68 | Girtz, Stephen | Investigation into the Knowledge, Beliefs and Behaviors of Midwesterners into Issues Regarding the Great Lakes |
| 9:00 AM | 69 | Yang, Dia | Adult Basic Education College Transition Program |
| 9:00 AM | 70 | Golden, Kadylyn | Global Population Growth |
| 9:00 AM | 71 | Swanson, Jacob | Characterization of Magnetite (111) Surface Oxidation Using Conductance Atomic Force Microscopy (CAFM) |

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|---|---|---|---|
| 9:00 AM | 72 | Harter, Joseph; Schulzetenberg, Aaron; Paulsen, Justin | Lateral Field Time-of-Flight for Determination of Surface Charge Carrier Mobility |
| 9:00 AM | 73 | Malone, Kayla | Germination Requirements for Native Minnesota Prairie Forbs |
| 9:00 AM | 74 | Froelich, Jonathan | An Investigation Into the Knowledge and Beliefs of Earthquakes in California and the Rebuilding Process |
| 9:00 AM | 75 | Johnson, Jeffrey; Neu, Jennifer | Optimization of Electrochemical Deposition |
| 9:00 AM | 76 | Horn, Rocky | A Look at SCSU Athletics |
| 9:00 AM | 77 | Quesada Montoya, Maria | Hispanic Speakers English Vowel Pronunciation Problems |
| 9:00 AM | 79 | Bates, Stephanie | The Value of Amateurs |
| 9:00 AM | 80 | Wacker, Tina | E-Waste in the United States |
| 9:00 AM | 82 | Welinski, Michael | How Playing Video Games Affects Attention |
| 9:00 AM | 83 | Heck, Tara | School Psychology & Attention |
| 9:00 AM | 84 | Stein, Brandon | The Effects of Forest Disturbance on Beetle Diversity and Abundance |
| 9:00 AM | 85 | Zimmerman, Rhonda | The Impact of Forest Fragmentation on Vegetative and Avian Inhabitants |
| 9:00 AM | 86 | Poepping, Brittany | The Impact of Forest Fragmentation on Vegetative and Avian Inhabitants |

**Session C-A** **Language and Culture** **Alumni**

**Moderator** John Madden, Associate Professor, Teaching English as a Second Language

| Time | Index | Presenter(s) | Project Title |
|---|---|---|---|
| 9:30 AM | 1 | Almuqrin, Afrah | Corpus Consultation of Inflectional Morpheme -s and Evaluation of Arab Learners of English |
| 9:50 AM | 2 | Vos, Evan | Digital Humanities and Pedagogy in Medieval History and English Studies |
| 10:10 AM | 3 | Gordon, Rebekah | The Use and Usefulness of Collocations Dictionaries |
| 10:30 AM | 4 | Colpaert, Kathrine | The Role of English in Saudi Arabia |

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

**Moderator** Kimberly Mielke, Personnel Aide, Human Resources

| Time | Index | Presenter(s) | Project Title |
|---|---|---|---|
| 9:30 AM | 1 | Keyworth, Paul | The Acoustic Correlates of Stress-Shifting Suffixes in Native and Nonnative English |
| 9:55 AM | 2 | Kramer, Richard | Expression and Characterization of Lytic *Staphylococcus Aureus* Phage P68 Holin Proteins in *Escherichia Coli* |
| 10:20 AM | 3 | Tham, Jason | Tomorrow's College: An Analysis of a Blended Learning Pilot Project for First-Year Composition |

## STUDENT RESEARCH COLLOQUIUM PROGRAM

**Session C-GN Community and Culture** **Glacier North**

**Moderator** J. Michael Pickle, Associate Professor, Chair, Special Education

| Time | Index | Presenter(s) | Project Title |
|---|---|---|---|
| 9:30 AM | 1 | Tham, Jason | Leadership Without Borders: Celebrating Diversity and Inclusion of International Student Leaders |
| 9:50 AM | 2 | Doumbia, Aminata; Abebe, Ayda | Communicating Common Ground |
| 10:10 AM | 3 | Smith, John | Unintended Consequences of Public Policy |
| 10:30 AM | 4 | Nelson Ramos, Kristy | Working Mom vs. Stay-at-home Mom |

**Session C-GS Computer Forensics I** **Glacier South**

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

| Time | Index | Presenter(s) | Project Title |
|---|---|---|---|
| 9:30 AM | 1 | Tripathi, Dipendra; Paudel, Badri | Analysis of Used Hard Drives Using Computer Forensics Tool |
| 9:50 AM | 2 | Chilukuri, Koushik; Muddu, Sai Mohit | Digital Tracing: Revolutionary Methods for Crime Scene Investigation |
| 10:10 AM | 3 | Adhikari, Subash; Ofori-Amoah, Evans | Mobile Forensics Analysis |
| 10:30 AM | 4 | Abeykoon, Kasun; Abeykoon, Thusith | Computer Crime Analysis Using Digital Forensics |

**Session C-VN Statistics I** **Voyageurs North**

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

| Time | Index | Presenter(s) | Project Title |
|---|---|---|---|
| 9:30 AM | 1 | Chase, Taryn; Duong, Quyen; Thomas, Jumoke; Lu, Shan | Judicial System Funnel |
| 9:50 AM | 2 | Bloch, Daniel; Brunette, Kirsten | Predicting Successful Clients for Stearns County Community Corrections |
| 10:10 AM | 3 | Li, Zhengyi; Bauer, Lauren; Kang, Hyemi | Predicting Duration of Stay in Jail |
| 10:30 AM | 4 | Idifle, Abdikadir; Willis, Ashley | Analysis of Recidivism Among Stearns County Corrections Clients |

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

**Moderator** Aref Hassan, Assistant Professor, Political Science

| Time | Index | Presenter(s) | Project Title |
|---|---|---|---|
| 9:30 AM | 1 | Rearick, Daniel | Anatomical, Behavioral, and Molecular Responses of Minnows Exposed to Pharmaceuticals Using Field and Laboratory Approaches |
| 9:50 AM | 2 | Minor, Maxwell | Effluent-Impacted Systems: Effects on Wildlife Diversity, Behavior and Morphology |
| 10:10 AM | 3 | Meemaduma, Dayan; Murphy, Joseph; Campion, Ryan | Demineralization System Piping Evaluation |

| | | | |
|---|---|---|---|
| 10:30 AM | 4 | Rolstad, Nancy | The Ubiquitin-Mediated Regulation of the Proto-Oncogene Myc by DNA Damage |

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

**Moderator** Theresa Estrem, Associate Professor, Communication Sciences and Disorders

| Time | Index | Presenter(s) | Project Title |
|---|---|---|---|
| 11:00 AM | 1 | Mohite, Mayur | Application of DOE in Metal Coating Process Improvement at RIE Coatings |
| 11:25 AM | 2 | Carpenter, Mary | (Central) Auditory Processing in Young Adults on the Autism Spectrum |
| 11:50 AM | 3 | Tham, Jason | We're All In This Together. RT @BarackObama: Social Media Use and College Students' Civic Engagement During the 2012 Presidential Election. |

**Session D-GN** **System Design** **Glacier North**

**Moderator** Carolyn Ruth A. Williams, Associate Dean, Multicultural Affairs and STEM Initiatives

| Time | Index | Presenter(s) | Project Title |
|---|---|---|---|
| 11:00 AM | 1 | Gourisetty, Ramya; Kanne, Sunandha; Vallabhaneni, Santhosh Kumar; Chapala, Naveenbabu | Improvement in Facilities Layout of a Restaurant |
| 11:20 AM | 2 | Hartzell, Kaitlyn; Olmscheid, Emily | Three Generations of Flight Experience |
| 11:40 AM | 3 | Khan, Maham; Pavuluri, Snigdha; Katagowni, Goutham Raj | Optimization of Maintenance Repair and Operating Supplies (MRO) Process at an Appliance Manufacturing Company |
| 12:00 PM | 4 | Yin, Mengmei | Chinese Style Privatization and its Impact on GDP Growth |

**Session D-GS** **Diversity and Media** **Glacier South**

**Moderator** Lisa Heinrich, Professor, Mass Communications

| Time | Index | Presenter(s) | Project Title |
|---|---|---|---|
| 11:00 AM | 1 | Becker, Christopher | Diversity in Media: On-Air Minorities in Twin Cities Television News |
| 11:15 AM | 2 | Udofia, David | Diversity in Media: Perceptions & Attitudes Towards Muslim Americans |
| 11:30 AM | 3 | Schroden, Melissa | Diversity in Media: Latinos and Immigration |
| 11:45 AM | 4 | Christianson, Marjorielee | Diversity in Media: Halloween Costume Advertising |
| 12:00 PM | 5 | Spoden, Derek | Diversity in Media: Color Me Bad-African Americans in Fitness Advertising |

## STUDENT RESEARCH COLLOQUIUM PROGRAM

**Session D-LT** **Creative Performances** **Little Theatre**

**Moderator** Eddah Mutua-Kombo, Associate Professor, Communication Studies

| Time | Index | Presenter(s) | Project Title |
|---|---|---|---|
| 11:00 AM | 1 | Gahm, Noah | Gayly Celebrating Minnesota: A Musical Program |
| 11:20 AM | 2 | Ndayiziga, Mika; Mumukunde, Inga; Byiringiro, Janvier; Munezero, Darlene; Gahungu, Guy Armel; Nsengiyumva, Sybille; Sengwiza, Loris | Twese Hamwe (All of us) |

**Session D-VN** **Social and Behavioral Studies I** **Voyageurs North**

**Moderator** Chukwunyere Ugochukwu, Associate Professor, Geography, Planning and Community Development

| Time | Index | Presenter(s) | Project Title |
|---|---|---|---|
| 11:00 AM | 1 | Cenolli, Eglantina | Promoting Leadership for Women in Higher Education |
| 11:20 AM | 2 | Koethe, Matthew | Using Social Media to Promote Small Organizations |
| 11:40 AM | 3 | Stanton, Dexter | Afro-American Apathy Around Issues of Voting Rights |
| 12:00 PM | 4 | Zelinski, Tyler | Play Call And Noise: Ignoring The Roar Of The Crowd |

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

**Moderator** John Sinko, Assistant Professor, Chemistry and Physics

| Time | Index | Presenter(s) | Project Title |
|---|---|---|---|
| 11:00 AM | 1 | Heikkila, William | Effects of Multigenerational Exposure of Fathead Minnows to 17β-Estradiol Alters Predator Performance and Survival |
| 11:20 AM | 2 | Noyes, Joseph | Cloning, Induction, And *In Silico* Analysis Of A Putative Cyclin Of *T. Gondii* In *E. Coli* |
| 11:40 AM | 3 | Srivastava, Shipra; Ramdin, Priyanka; Choksi, Rujuta; Mogal, Priyanka | Analyzing and Improving Current Layout of Grocery Stores Using 5S Tools |
| 12:00 PM | 4 | Tellapally, Anusha; Vanga, Shruthi; Kodali, Prudhvi Krishna; Reddy, Seshagiri | Inventory Management at a Grocery Store |

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

**Moderator** Md Mahbub Hossain, Associate Professor, Electrical and Computer Engineering

| Time | Index | Presenter(s) | Project Title |
|---|---|---|---|
| 12:50 PM | 1 | Olson, Marin | Environmental Contaminants and Disease |
| 1:15 PM | 2 | Metzger, Nathan | Regulation of PGC-1beta: A Protein Implicated in Neurodegenerative Disorders |
| 1:40 PM | 3 | Najmee, Taha; Tan, Chung Keong; Wickremasuriya, Boosabaduge A. | Home Automation System |
| 2:15 PM | 4 | Rhodes, Mark | Tracing Scottish Migration to Minnesota Through Religious, Cultural, and Social Landscapes, 1840-1930 |

## STUDENT RESEARCH COLLOQUIUM PROGRAM

**Session E-VN Graduate School Mystery Revealed** — **Voyageurs North**

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

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

**Session E-VS Grant Writing 101 for Students** — **Voyageurs South**

**Moderator** Jodi Kuznia, Director of Grants and Contracts, Sponsored Programs

| Time | Index | Presenter(s) | Project Title |
|---|---|---|---|
| 12:30 PM | 1 | | Grant Writing 101 for Students |

**Session F-A Humanities and Fine Arts** — **Alumni**

**Moderator** Isolde Mueller, Professor, Foreign Language

| Time | Index | Presenter(s) | Project Title |
|---|---|---|---|
| 2:00 PM | 1 | Kohler, Benjamin | Second Language Acquisition with Rosetta Stone |
| 2:20 PM | 2 | Colpaert, Kathrine | How Do We Know What Our Students Know? An Alternative Method of Assessment. |
| 2:40 PM | 3 | Elker, Eric | The Roles of Percussion in the Romantic and Post-Romantic Periods of Music |

**Session F-GN Statistics II** — **Glacier North**

**Moderator** Hui Xu, Associate Professor, Mathematics and Statistics

| Time | Index | Presenter(s) | Project Title |
|---|---|---|---|
| 2:00 PM | 1 | Udvig, Colin | Data Analysis of SCSU Students Applying During Free App Week |
| 2:20 PM | 2 | Li, Zhengyi | High Dimensional Model Selection and Validation: A Comparison Study |
| 2:40 PM | 3 | Zuluaga, Juan | Optimal Matching - Does It Reveal Deep Structure? |
| 3:00 PM | 4 | Nwoke, Uchechukwu | Using Time Series Methods to Predict Emergency Department Patient Flow |

**Session F-GS Computer Forensics II** — **Glacier South**

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

| Time | Index | Presenter(s) | Project Title |
|---|---|---|---|
| 2:00 PM | 1 | Biehl, Michael; Shehadeh, Bashar | Solving a Virtual Crime Using Digital Forensics Tools |
| 2:20 PM | 2 | Xu, Liheng; Chen, Zepu | Computer Forensics Project |
| 2:40 PM | 3 | Tuladhar, Dibesh; Tamanag, Priyanka | Fictitious Crime Investigation Using Digital Forensics |
| 3:00 PM | 4 | Rice, Erich; G.C., Deepak | A Digital Forensic Quandary: Who Done it? |
| 3:20 PM | 5 | Malla, Sandesh; Redman, James | Analysis of Solid State Drive |

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|---|---|---|---|
| 3:40 PM | 6 | Tetali, Venkata; Robarge, Rachel | Computer Forensics Case Solutions |

**Session F-VN Social and Behavioral Studies II** — **Voyageurs North**

**Moderator** Jodi Kuznia, Director of Grants and Contracts, Sponsored Programs

| Time | Index | Presenter(s) | Project Title |
|---|---|---|---|
| 2:20 PM | 2 | Wolfe, Bradley | Sexual Expression in the GLBTQ Community |
| 2:40 PM | 3 | Chrisinger, Alyssa | The Analysis of the Culture, Issues, and Economic Impact of the Spanish Speaking Community in the St. Cloud Area |

**Session F-VS Rhetoric and Writing** — **Voyageurs South**

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

| Time | Index | Presenter(s) | Project Title |
|---|---|---|---|
| 2:00 PM | 1 | Hennes, Jack | Resisting the Mechanistic Model: Praxis, Technology, and Meaningful Practice |
| 2:20 PM | 2 | Ferguson, Elizabeth | Slaves in 19th-Century St. Cloud: Presenting the Rhetoric of Race in a Digital Archive |
| 2:40 PM | 3 | Blank, Shawn | Teaching to the New Rhetorical Expectations of Audiences and Authors |

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

**Moderator** Jonathan Foss, Assistant Director for Fraternity and Sorority Life

| Time | Index | Presenter(s) | Project Title |
|---|---|---|---|
| 2:00 PM | 1 | Prodoehl, Caitlin | Temperature Versus Emergence of Emerald Ash Borer In Minnesota |
| 2:00 PM | 2 | Yiadom, Atuobi | Analytical Extraction Methodology: Developing an Efficient Single Drop Microextraction (SDME) Method for Diphenhydramine |
| 2:00 PM | 3 | Yiadom, Atuobi | EEG Activity Show Differences Between True and False Memory For Video Recall |
| 2:00 PM | 4 | Olson, Hailey | Study Abroad Returnee Programs Benefit Students' Futures |
| 2:00 PM | 5 | Thielen, Amanda | How Career Services Can Better Serve International Students |
| 2:00 PM | 6 | Johnson, Zach | Stem Cells and Society: What Secondary Students Know and Believe About Regenerative Medicine |
| 2:00 PM | 7 | Tripathi, Dipendra; Malla, Sandesh | Using Agile Project Management Technology in Dynamic Environments |
| 2:00 PM | 8 | Duong, Quyen | Verification Bias Correction in the ROC Curve Estimation for Continuous Outcomes |
| 2:00 PM | 9 | Gehrman, Diana; Piehl, Katherine; Mahoney, Johanna | Community Assessment of Diabetic Foot Ulcers in Concepcion, Chile |
| 2:00 PM | 10 | Quillo, Kori; Olson, Sarah | Antibiotics in Meat |

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|---|---|---|---|
| 2:00 PM | 11 | Louis, Deborah; Weckwerth, Marissa; Setrum, Holly; Galloway, Ashley; Zaiser, Kelly; Michael, Kimberly; Perske, Greta | Kandioyohi County Public Health Customer Satisfaction |
| 2:00 PM | 12 | Habisch, Courtney | Occupational Therapy In A School Setting |
| 2:00 PM | 13 | Seefeldt, Lacey | University Honors Program Outcomes |
| 2:00 PM | 14 | Carlson, Katie; Roberts, Alyssa; Peterson, Ronni | Teaching Easy Onsets Effectively for Optimum Retention |
| 2:00 PM | 15 | Nguyen, Nhan | What Men Do Not Know: They Can Get Breast Cancer (part II) |
| 2:00 PM | 16 | McWilliams, Erin; Rehnstrand, Wendy; Swanberg, Breanna | Teaching Pausing Effectively for Optimum Retention |
| 2:00 PM | 17 | Ghazal, Leila; Frempong, Nora; Thinamany, Sinduja; Knutson, Annie; Naga, Babita | Effect of DDE on Type 1 Diabetes Incidence in NOD Mouse Model |
| 2:00 PM | 18 | Klasen, Scott | Salt and pH-Dependent Swelling of Poly(N-isopropyl acrylamide-co-acrylic acid) Hydrogel Composites |
| 2:00 PM | 19 | Nemitz, Jessica; Thomas, Perrin; Brantley, Megan | Teaching Easy Onsets Effectively for Optimum Transfer Outside of the Clinical Setting |
| 2:00 PM | 20 | Berent, Taylor | Bioinformatic Analysis of the Valine, Leucine, and Isoleucine Biosynthetic Pathways in *Bacillus cereus* |
| 2:00 PM | 21 | Evans, Zoegar | Bioinfromatic Analysis of the Alanine, Aspartate and Glutamate Metabolism in the Pathway in *Bacillus cereus* |
| 2:00 PM | 22 | Gardner, Colin | Electrochemical and AFM Study of Oxide Over-Layers on Magnetite |
| 2:00 PM | 23 | Stumvoll, Tanner; Bajracharya, Arbindra; Collette, Ashlee | Smartphone Controlled Omni-Directional Tri-Wheel Robot (SCOTR) |
| 2:00 PM | 24 | Devries, Crystal; Rosenberger, Jamie; Chen, Li | Will Green Trends Result in More Insourcing in Global Supply Chains? |
| 2:00 PM | 25 | Warren, Nicholas | Corporate Externalities |
| 2:00 PM | 26 | Salzwedel, Rachel | Individual Differences in Attention: Optimism and Pessimism |
| 2:00 PM | 27 | Frost, Hannah | The Molding of Artisans: A Field Based Study on the Marketing Methods of Nicaraguan Ceramicists |
| 2:00 PM | 28 | Hallak, Rami | Creating a STELLA Software Model to Simulate Nitrogen Removal During the Wastewater Treatment Process |
| 2:00 PM | 29 | Fonss, Rebecca | Assessing the Kuder Journey Interest Inventory for the Career Service Center at SCSU |
| 2:00 PM | 30 | Lindberg, Jennifer | A Review of Mindfulness Benefits From Childhood to Young Adulthood |
| 2:00 PM | 31 | Rother, Elizabeth | The Effects of Riming and Aggregation on the Fall Velocities of Snowflakes |

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|---|---|---|---|
| 2:00 PM | 32 | Fitts, Carlos; Lyons, Alexandra; Johnson, Jared; Hemmesch, Scott; Murphy, Rebecca; Harstad, Brianna; Mulcrone, Rebecca; Hartzell, Kaitlyn; Hammad, Sarah | Psychology of Genocide |
| 2:00 PM | 33 | Hemmesch, Scott; Backes, Tiffany; Rothe, Jennifer | Honors Leadership Institute |
| 2:00 PM | 34 | Ilboudo, Patrick | On the Success of SCSU Students with High ACT Scores |
| 2:00 PM | 35 | Stolt, Brittany; Dahl, Elizabeth; Korman, Karlee | Teaching Pausing for Optimum Transfer Outside of the Clinical Setting |
| 2:00 PM | 36 | Turkowski, Kari; Elshikh, Amira; Geller, Karly; Rai, Arbin; De Silva, Samera; Hoganson, Jessica; Toft, Jamie | Effect of DDE on Insulitis Development and Insulin Expression in NOD Mouse Model of Type 1 Diabetes |
| 2:00 PM | 37 | Roberts, Kristina | Bootlegging in Stearns County from 1920 to 1933 |
| 2:00 PM | 38 | Scott, Andrew; Schindler, Broc; Scott, Alex; O'Brien, Haley; Prigge, Christopher; Hansen, Sarah | Characterization of Leukocytes Involved in Pathogenesis of Type 1 Diabetes in NOD Mice Exposed to a Persistent Organic Pollutant |
| 2:00 PM | 39 | Hislop, Travis | Gelatin Holography with Ferric Ammonium Citrate |
| 2:00 PM | 40 | Fettig, Samantha | Riluzole Reverses the Effects of Chemoconvulsants Acting on Glutamatergic Neurotransmission in Planaria |
| 2:00 PM | 41 | Kpaahkpai, Nathaniel | Offshore Drilling |
| 2:00 PM | 42 | Lauer, Michael | The Scenery of Urban Sprawl |
| 2:00 PM | 43 | Pilarski, Krista; Czech, Matt | The Great Lakes and Invasive Species |
| 2:00 PM | 44 | Prasomsack, Aektono | Global Connection: St. Cloud State University as a Primary Destination for Nepalese International Students |
| 2:00 PM | 45 | Heiber, Rachel | Forests |
| 2:00 PM | 46 | Holman, Whitney | Speech Planning in Persons with Parkinson's Disease: An Evoked Response Potential Study |
| 2:00 PM | 47 | Holman, Whitney; Carpenter, Mary; Peichel, Patricia | Counseling Young Adults on the Autism Spectrum Using Narrative Therapy |
| 2:00 PM | 48 | Yusuf, Habibo | Clean Water Access in Somalia |
| 2:00 PM | 49 | Honnold, Kistyn | Looking Good at a Cost |
| 2:00 PM | 50 | Pucel, Brendan | Minorities in Aviation |
| 2:00 PM | 51 | Erickson, Rikki | On the Graduation Rates of Students in Developmental Math |
| 2:00 PM | 52 | Voeller, Keith | Investigation of Low Temperature Hole Mobilities in Tetracene Single Organic Crystals by Time of Flight |
| 2:00 PM | 53 | Koh, Pei Yoong | On the Development of an Algorithm for Awarding Scholarships |
| 2:00 PM | 54 | Grave, Rachel | On the Relationship of ACT Reading Scores and Accuplacer Scores |

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|---|---|---|---|
| 2:00 PM | 55 | Lakings, Ross | Determination of Ibuprofen in Waste Water by Means of Single Drop Micro Extraction Coupled with Gas Chromatography/Mass Specrometer |
| 2:00 PM | 56 | Fiedler, Shawn; Lenz, Joseph; Dillon, Jeffrey | Green Manufacturing and Renewable Energy in Small Businesses |
| 2:00 PM | 57 | Park, Kyeongjong | Comparison Between General American English Pronunciation and Korean English Pronunciation |
| 2:00 PM | 58 | Saxton, Jeffery; Meissner, Tanner; Pufpaff, Adrian | Green Logistics |
| 2:00 PM | 59 | Piersak, Matthew | Attitude Towards the 2012 Minnesota Wolf Hunt |
| 2:00 PM | 60 | Beehler, Kevin | Periodic Table |
| 2:00 PM | 61 | McIntyre, Jennifer; Sivigny, Allison | High Potentials-Employee Assessment Tools |
| 2:00 PM | 63 | Neuman, Cassandra | Mindfulness in Children |
| 2:00 PM | 64 | Hamberg, Autumn; Zenzen, Matthew | Examination of Minnesota Diphthongs |
| 2:00 PM | 65 | Abat, Martina | Negative VOT |
| 2:00 PM | 66 | Mekuria, Tedi | Struggle of Assmilation in Somali Community; Assimilate or Maintain Ethnic Identity |
| 2:00 PM | 67 | Wollum, Bradley | Sulfide Mining in Minnesota |
| 2:00 PM | 68 | Feifarek, David | Modulation of Estrogenic Exposure Effects Mediated through Dietary and Temperature Regimens in Male Fathead Minnows |
| 2:00 PM | 69 | Stomberg, Ashley; Erpelding, Maren | Is Organic Food Really Healthier? |
| 2:00 PM | 70 | Weber, Amanda; Roebke, Mark | Rationale for Neither Agreeing nor Disagreeing: Person and Item Contributors |

**Session H-GN Cultural and Social Influences on Behavior and Self Expression Glacier North**

**Moderator** Gareth John, Associate Professor, Geography, Planning and Community Development

| Time | Index | Presenter(s) | Project Title |
|---|---|---|---|
| 3:30 PM | 1 | Maina, Naomi | Social Experiences of African Immigrant Women in St. Cloud, Minnesota |
| 3:50 PM | 2 | Imady, Essma | The Influence of Islamic Textiles on Matisse |
| 4:10 PM | 3 | Nguyen, Nhan | What Men Do Not Know: They Can Get Breast Cancer (part II) |
| 4:30 PM | 4 | Jesku, Eralda | Perceptions of Principals About Their Roles, Capacities and Difficulties in Implementing Decentralization Reform in Albania |

**Session H-VN** **Improving and Preserving Systems** **Voyageurs North**

**Moderator** Carolyn Ruth A. Williams, Associate Dean, Multicultural Affairs and STEM Initiatives

| Time | Index | Presenter(s) | Project Title |
|---|---|---|---|
| 3:30 PM | 1 | Azo, Loris | Effects of Compound of Emergent Concerns on Larval Fathead Minnow Swimming Behavior |
| 3:50 PM | 2 | Schaefer, Joshua; Vossen, Lucas; Loxtercamp, Nicholas | Design and Analysis of Grain Ship Unloaders |
| 4:10 PM | 3 | Redepenning, Timothy; Wojchouski, Devin; Olding, Matthew | Implementing a Lean Process at Suburban Manufacturing |
| 4:30 PM | 4 | Fonken, Gael | Ambiguous Liaisons, Oil Politics, and Indigenous Survival in the Amazon |

**Session H-VS** **Information Systems** **Voyageurs South**

**Moderator** Jodi Kuznia, Director of Grants and Contracts, Sponsored Programs

| Time | Index | Presenter(s) | Project Title |
|---|---|---|---|
| 3:30 PM | 1 | Shehadeh, Bashar | Vivid-Pass: A Dual Layer Authentication Method With Custom-Made Security Features |
| 3:50 PM | 2 | Savadogo, Alassane | Statistical Modeling of Educational Data |
| 4:10 PM | 3 | Rimal, Mahesh | A Comparison Study of Estimation of Conformance Proportion |
| 4:30 PM | 4 | Bennett, Adam | Political Geography in the Digital Age |

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

**Moderator** Jonathan Foss, Assistant Director for Fraternity and Sorority Life

| Time | Index | Presenter(s) | Project Title |
|---|---|---|---|
| 4:00 PM | 1 | Heuring, Benjamin | Color Preference |
| 4:00 PM | 2 | Yang, Samantha; Erickson, Sarah | Comparing the Preschool Language Scale: 4th and 5th Editions |
| 4:00 PM | 3 | Yang, Samantha; Weidner, Kristen; Bruner, Molly; Daleiden, Jillian; Schneider, Kristen | Types of Ethical Issues Faced by Speech-Language Pathologists |
| 4:00 PM | 4 | Bambrick, Christopher | Asian Carp as an Invasive Species in Minnesota |
| 4:00 PM | 5 | Howard, John; Dunnigan, Michael; Martin, Alexander | Smart Cart |
| 4:00 PM | 6 | Merrell, Bruce; Holm, Alex; Martin, James; Sellner, Tyrone | A New Information System to Track Graduation Time Lines |
| 4:00 PM | 7 | Gebur, Kevin; Wolter, Sarah; Fiecke, Amy; Roden, Lindsey; Smith, Ivy; Dahl, Callie; Barnes, Maya; Stensing, Allesson | Genocide Education in Minnesota's Public Schools |
| 4:00 PM | 8 | Roden, Lindsey; Swanson, Anna; Montag, Chelsea | I Believe I Can Fly |

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|---|---|---|---|
| 4:00 PM | 9 | Gebur, Kevin; Rothstein, Cory; Wilson, Caitlin | The Thrill of Flight |
| 4:00 PM | 10 | Hogrefe, Zachary | Geographic Literacy Between International and Non-International Students at SCSU |
| 4:00 PM | 11 | Chitrakar, Iva | Bioinformatic Analysis of the Arginine and Proline Biosynthetic Pathway in the *Bacillus cereus* |
| 4:00 PM | 12 | Waddell, Abby | Expert and Novice Study of Percent Yield |
| 4:00 PM | 13 | Brodt, Hanna; Herod, Alison; Halvorson, Alex | Our Height of Flight |
| 4:00 PM | 14 | Bedard, Marie; Ahmed, Faisa | Transgenerational Fathead Minnow Estrogen Exposure Study |
| 4:00 PM | 15 | Maly, Anthony | Leadership and Engagement of First-Year St. Cloud State University Students |
| 4:00 PM | 16 | Kroll, Stephanie | Southeast Asia Education Abroad Experience: Does it Benefit the Hmong Student |
| 4:00 PM | 18 | Wirth, Daniel | Histological Effects of Effluent Contaminated Water on Bluegill Sunfish |
| 4:00 PM | 19 | Morhardt, Mary | Bioinformatic Analysis of the Lysine Biosynthetic Pathway in *Bacillus cereus* ATCC 14579 |
| 4:00 PM | 20 | Shah, Anil; Lade, Daniel | Unmanned Aerial Vehicle: Quadrotor |
| 4:00 PM | 21 | Malla, Minesh | Bioinformatic Analysis of Tryptophan Biosynthetic Pathway in *Bacillus cereus* ATCC 14579 |
| 4:00 PM | 22 | Cox, Megan; Jenson, Grace; Miles, Kelly | Impacts of Estrogenic Effluents on Resident and Caged Fish in St. Croix Tributaries |
| 4:00 PM | 23 | Jendro, Milissa | Bioinformatic Analysis of the Phenylalanine and Tyrosine Biosynthetic Pathways of *Bacillus cereus* ATCC 14579 |
| 4:00 PM | 24 | Pillsbury, Makenzie | Goniothalamin: A Template for Chemotherapeutic Drug Design and Synthesis |
| 4:00 PM | 25 | Knutson, Rhiannon; Mezzano, Sara | Water Into...Jet Fuel? |
| 4:00 PM | 26 | Richards, Brandon | Task Switching and Breaks |
| 4:00 PM | 27 | Rollins, Lindsay | Hypnosis and Quitting Smoking |
| 4:00 PM | 28 | Overby, Bradley; Willert, Jonathon; Molnar, Brandon | Insourcing and Re-Shoring to Reduce Risk in Supply Chain Management |
| 4:00 PM | 29 | Chai, Joyce | Analysis of Multiple Repeats in Math Courses |
| 4:00 PM | 30 | Ren, Qing | On the Relationship of ACT Math Scores and Accuplacer Math Scores |
| 4:00 PM | 31 | Tangen, Stephanie | Paying Attention to Warnings on Prescription Labels |
| 4:00 PM | 32 | Drexel, Catherine | Journaling and Mood |
| 4:00 PM | 33 | Barett, Lorren | ADHD in the Workplace |
| 4:00 PM | 34 | Gill, Taylor; Allen, Rebecca | Mindfulness and Extraversion |
| 4:00 PM | 35 | Danzeisen, Ali | Bright Minds, Bright Futures: Empowering Young Minds to Lead |

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|---|---|---|---|
| 4:00 PM | 36 | Kanak, Samantha; Arnold, Brandon; Parsons, Jameson | Leadership Through Athletics and Gender |
| 4:00 PM | 37 | Ditoubilianou, Flamine marie | Global Leadership Compentencies: Implications for SCSU students |
| 4:00 PM | 38 | Albright, Courtney | Leadership in the Classroom |
| 4:00 PM | 39 | Orness, Joshua | Effective Mapping Techniques: Cartogram Versus Choropleth |
| 4:00 PM | 40 | Johnson, Derek; Ellis, Brittney; Kleven, Charles; Engstrom, Laura | Going Green Can Help Reduce Healthcare Costs |
| 4:00 PM | 42 | Schmid, Alyssa; Robeck, Julia; Steinmetz, Keri; Godding, Micah; Mills, Samantha; Mix, Rebekah | Comparing Genocides |
| 4:00 PM | 43 | Manuel, Laura; Vanoverbeke, Kyle; Curley, Isaac; McKimmy, Kent; Strand, Kaitlyn; Weinberg, Samantha; Notch, Jennifer; Lehrke, Hannah | Propaganda, Media and Genocide |
| 4:00 PM | 44 | Leo, Frank | American Maglev Trains |
| 4:00 PM | 45 | King, Bryan; Radermacher, Derek | Declared Major and Duration Analyses |
| 4:00 PM | 46 | Gebremariam, Reshet | Portable Water-Filter System From Third World Countries |
| 4:00 PM | 47 | Cox, Karlee | p38 MAP Kinase Activates PGC-1a by Inhibiting the EDD Ubiquitin Ligase |
| 4:00 PM | 48 | Wilson, Brittany | Levels of High School and College Engagement in First Year Honor Students |

**Session J-GN** **Productivity** **Glacier North**

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

| Time | Index | Presenter(s) | Project Title |
|---|---|---|---|
| 5:00 PM | 1 | Gunderson, Ross; Shiraz, Fathima; Redford, Garrett | Visibility in Medical Supply Chains |
| 5:20 PM | 2 | Ba, Alassane | I Have No Idea What is Installed in my Machine |
| 5:40 PM | 3 | Nguyen, Vien | Finger Tracking Using Depth Images |

**Session J-VN** **Engineering** **Voyageurs North**

**Moderator** Ratchaneekorn Thamvichai, Professor, Electrical and Computer Engineering

| Time | Index | Presenter(s) | Project Title |
|---|---|---|---|
| 5:00 PM | 1 | Lamichhane, Ujjwal; Onta, Uddar; Basnet, Santosh | Wind Tunnel |
| 5:20 PM | 2 | Tesfaye, Milkias; Boeck, Jason; Wardrip, Nathaniel | Air Water Generator |
| 5:40 PM | 3 | Raza, Faisal; Wyman, Matthew | Graphical User Interface Trivia Game |

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|---|---|---|---|
| 6:00 PM | 4 | Pruss, Mitchell; Anderson, Andrew; Toews, Andrew | Heat Treat Loading Station Improvement |

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

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

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

## FORMAL PAPER COMPETITION

The formal paper competition required submission of a four to eight page narrative (maximum 2,000 words) by March 1, 2013. Criteria for judging included: background, thesis, methodology, implications, and organization. Paper presentation categories include:

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

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

**(Central) Auditory Processing in Young Adults on the Autism Spectrum *** - Mary Carpenter

**Application of Design of Experiments in Metal Coating Process Improvement at RIE Coatings*** - Mayur Mohite

**Cloning, Induction, and in Silicon Analysis of a Putative Cyclin of T Gondi in E Coli** - Joe Noyes

**Environmental Contaminants and Disease ***- Marin Olson

**Expression and Characterization of Lytic *Staphylococcus Aureus* Phage P68 Holin Proteins in *Escherichia Coli* ***- Richard Kramer

**Home Automation System* -** Taha Najmee, Chung Keong Tan and Boosabaduge Wickremasuriya

**Leadership Without Borders: Celebrating Diversity and Inclusion of International Student Leaders** - Jason Chew Kit Tham

**Patents and Innovation - Do Patents Threaten Innovation?** - Natalie Shofner

**Regulation of PGC-1beta: A Protein Implicated in Neurodegenerative Disorders*** - Nathan Metzger

**The Acoustic Correlates of Stress-Shifting Suffixes in Native and Nonnative English*** - Paul Keyworth

**Tomorrow's College: An Analysis of a Blended Learning Pilot Project for First-Year Composition*** - Jason Chew Kit Tham

**Tracing Scottish Migration to Minnesota through Religious, Cultural and Social Landscapes, 1840-1930***- Mark Rhodes

**Visibility in Medical Supply Chain** – Ross Gunderson, Garrett Redford and Dheesh Shiaz

**We're all in This Together." RT @Barack Obama: Social Media Use and College Students' Civic Engagement During the 2012 Presidential Election***- Jason Chew Kit Tham

## POSTER PRESENTATION COMPETITION

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

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

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

**A Comparative Study of Success Measures in Off-Campus and On-Campus First Year Students at St. Cloud State University -** Nicole Jagodzinski and Sushma Pakhreen

**Acoustic Vowel Space of Low Vowels -** Jose Alfaro Cruz

**Analytical Extraction Methodology: Developing an Efficient Single Drop Microextraction (SDME) Method for Diphenhydramine -** Atuobi Yiadom

**Assessing the Kuder Journey Interest Inventory for the Career Service Center at SCSU -** Rebecca Fonss

**Bootlegging in Stearns County from 1920 to 1933 -** Kristina Roberts

**Characterization of Leukocytes Involved in Pathogenesis of Type 1 Diabetes in NOD Mice Exposed to a Persistent Organic Pollutant -** Christopher Prigge, Broc Schindler, Andrew Scott and Alex Scott

**Comparison of Barefoot and Shod, Sub Maximal Triple Jumping -** Steven Milkovich

**Contact Zones of the Winnebago: Tracing Cultural Exchange from Wisconsin to Nebraska, 1634-1874 -** Amanda Vallis

**Corporate Externalities -** Nicholas Warren

**Counseling Young Adults on the Autism Spectrum Using Narrative Therapy -** Mary Carpenter, Whitney Holman and Patricia Peichel

**Creating a Peer Mentor Program for Underprepared Students at a Technical and Community College -** Cara Grussing

**Creating a STELLA Software Model to Simulate Nitrogen Removal During the Wastewater Treatment Process -** Rami Hallak

**Distinctive Characteristics of Blue Hole 5, San Salvador Island, Bahamas -** Tashiana Osborne

**EEG Activity Show Differences Between True and False Memory For Video Recall -** Atuobi Yiadom

## POSTER PRESENTATION COMPETITION

**Effect of DDE on Insulitis Development and Insulin Expression in NOD Mouse Model of Type 1 Diabetes -** Kari Turkowski

**Effect of DDE on Type 1 Diabetes Incidence in NOD Mouse Model -** Nora Frempong, Leila Ghazal and Sinduja Thinamany

**Effect of Persistent Organic Pollutants on Proliferative Capacity of Immune Cells -** Allan Lea and Huong Phung

**Effects of Age and Gender on Thyrotropin and Thyroid Hormones Among Western Sudanese -** Nawal Yahya

**Electrochemical and AFM Study of Oxide Over-Layers on Magnetite -** Colin Gardner

**Environmental Development and Human Displacement: An Analysis of the Divergence and Integration of Environmental and Human Needs in Botswana and Nepal -** Kelsey Engelen

**Expression, Isolation, Purification and Analysis of ALDH-9A1, a Fusion Protein from E.Coli -** Bishow Gopali

**Gelatin Holography with Ferric Ammonium Citrate -** Travis Hislop

**Honors Leadership Institute -** Tiffany Backes

**How Career Services Can Better Serve International Students -** Amanda Thielen

**Individual Differences in Attention: Optimism and Pessimism -** Rachel Salzwedel

**Motivational Interviewing and Student Alcohol Use -** Tricia Simon

**Obesity in America and Education of Healthy Living -** Katherine Beaudry

**Perceived Importance of Strength and Conditioning Relative to Sports Orientation in Junior Alpine Ski Racers -** Kelley Holmes

**Plant Functional Response to Prescribed Fire Regime Variables -** Peter Duerkop

**Punk Goes Criminal: Does Music Transform Youth Into a Political Threat? -** Alastriona Kroll

**Remote Air Quality Monitor Device -** Bereket Gebremariam and Aida Mitiku

**Robotic Applications in Small Businesses -** Jyotindra Acharya and Min Soon Sze Tho

**Salt and pH-Dependent Swelling of Poly(N-isopropyl acrylamide-co-acrylic acid) Hydrogel Composites -** Scott Klasen

**Sleep Cycle Monitoring Alarm Clock -** Jacob Horn, Jason Kettlewell and LuLu Wang

**Smart Mug -** Adib Khan, Kuldip Maharjan and Gamir Shrestha

## POSTER PRESENTATION COMPETITION

**Smartphone Controlled Omni-Directional Tri-Wheel Robot (SCOTR) -** Arbindra Bajracharya, Ashlee Collette and Tanner Stumvoll

**Speech Planning in Persons with Parkinson's Disease: An Evoked Response Potential Study -** Whitney Holman

**St. Cloud State and the Graduate Geographic Hinterland -** Deondre Smiles

**Study Abroad Returnee Programs Benefit Students' Futures -** Hailey Olson

**Study and Analysis of Intelligibility Problems on Consonants Between Chinese English and General American English -** Borui Zhang

**Synthesis of an Anti-Cancer Drug Using Goniothalamin as a Natural Product Template -** Addison Dumke

**Teaching Easy Onsets Effectively for Optimum Retention -** Katie Carlson, Ronni Peterson and Alyssa Roberts

**Teaching Easy Onsets Effectively for Optimum Transfer Outside of the Clinical Setting -** Megan Brantley and Perrin Thomas

**Teaching Pausing Effectively for Optimum Retention -** Erin McWilliams, Wendy Rehnstrand and Breanna Swanberg

**Teaching Pausing for Optimum Transfer Outside of the Clinical Setting -** Elizabeth Dahl, Karlee Korman and Brittany Stolt

**The Capability of a Random Forest to Predict Crouch Gait Status of Adolescents with Cerebral Palsy -** Emily Willaert

**The Molding of Artisans: A Field Based Study on the Marketing Methods of Nicaraguan Ceramicists -** Hannah Frost

**University Honors Program Outcomes -** Lacey Seefeldt

**Using Agile Project Management Technology in Dynamic Environments -** Sandesh Malla

**Variation of Crystal Growth Methods of PTCDI Derivatives -** Hank Deuermeyer

**What Men Do Not Know: They Can Get Breast Cancer (part II) -** Nhan Nguyen

**Will Green Trends Result in More Insourcing in Global Supply Chains? -** Li Chen, Crystal Devries and Jamie Rosenberger

**Would You Like Aresenic With That? -** Kimberly Panek

## MnSCU Student Symposium

## Conference of Undergraduate Scholarly and Creative Activity

The MnSCU Student Symposium provides undergraduate students with the opportunity to present their scholarly and creative activity, increase intercampus engagement for both faculty and students and to highlight undergraduate excellence.

Any MnSCU undergraduate student engaged in collaborative or independent research, scholarly or creative activity and enrolled during the 2012-2013 academic year is eligible to present. Nominations were submitted by faculty through their academic department with participation awards determined by the respective dean.

Eleven paper and poster presentations will be presented at the second annual MnSCU Student Symposium to be held at Minnesota State University - Mankato on Monday, April 8, 2013.

**A New Information System to Track Graduation Time Lines -** Bruce Merrell, Alex Holm, James Martin and Tyrone Sellner

**Characterization of Leukocytes Involved in Pathogenesis of Type 1 Diabetes in NOD Mice Exposed to a Persistent Organic Pollutant -** Andrew Scott and Broc Schindler

**Community Assessment of Diabetic Foot Ulcers in Concepcion, Chile -** Diana Gehrman, Katherine Piehl and Johanna Mahoney

**Effect of DDE on Type I Diabetes Incidence in NOD Mouse Model -** Sinduja Thinamany

**Effect of Persistent Organic Pollutants on Proliferative Capacity of Immune Cells -** Allan Lea

**Investigation of Low Temperature Hole Mobilities in Tetrancene Single Organic Crystals by Time of Flight -** Keith Voeller

**Lateral Field Time-of-Flight for Determination of Surface Charge Carrier Mobility -** Joseph Harter, Aaron Schulzetenberg and Justin Paulsen

**Spring Survey of St. Cloud State University Students 2013 -** Karen Stay

**Stearn County Public Health Breastfeeding Resources -** Jenita Teachout and Heather Martell

**Teaching Easy Onsets Effectively for Optimum Transfer Outside of the Clincial Setting -** Jessica Nemitz, Perrin Thomas and Megan Brantley

**Teaching Pausing for Optimum Transfer Outside of the Clinical Setting -** Brittany Stolt and Karlee Korman

**Session A-GN** **Leadership** **Glacier North**

**The 50% We Don't Know: Followership**

The main issue this project will be covering is what the concept of followership is, why we do not know much about what followership is and what it looks like in the real world. The procedure will include the use of lecture, handouts and text to establish the three different topics. The result of this presentation is that the audience has a better understanding that leadership cannot occur without followers to support you. In discussing what leadership is, I intend to discuss the following areas: the actual world, specific example, the importance of a follower and the related vocabulary. In covering the idea that we do not know a lot about this, I intend to cover traditional thoughts on leadership, misconceptions about leadership and determining roles. When looking at the topic of what fellowship looks like, I will be analyzing scholarly followership models, exploring followers dependence and maturity in following their leader.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Panchyshyn, Vanessa | Eyo, Bassey | Communication Studies |

**Ethical Leadership and the LGBT Community**

This paper will examine what lies at the intersection of ethical leadership and LGBT rights. Marriage equality will be one of the topics discussed, as will the representation of LGBT community members in political roles and organizations. The current president of the United States has made it clear that he supports the freedom of marriage for all American citizens; what are some possible reasons behind his decision to make it official, and what are the implications of him being the first United States president to do so? How is the LGBT community represented in government and what is the atmosphere in political organizations when it comes to accepting members? What does the recent legislation dealing with marriage say about our political leaders today and how does it relate to the previous questions? All of these themes and others will be included in this paper as I explore ethical leadership and the LGBT community.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Hartzell, Kaitlyn | Eyo, Bassey | Communication Studies |

**Merging Corporate and Social Leadership: A New Model**

Throughout history, there have been many notable leaders; however, few are more notable than those that have led social revolutions such as the civil rights movement. By examining the styles of social leaders like Martin Luther King, Jr., individuals can learn much about effective leadership. These insights are especially important in a world where corporate executives are striving to improve their leadership styles. In order to combine the best of both these leadership worlds, this paper compares the leadership styles of three social leaders to three corporate leaders. Using information gleaned from this research, a new model for effective leadership is created.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Rogers, Lindsey | Eyo, Bassey | Communication Studies |

**Influences on the Boston Stamp Act Crisis**

The Boston Stamp Act crisis of 1765 involved violent mob rioting. Ebenezer Mackintosh, a shoemaker, used his existing leadership of the mob in Boston for two of the most violent protests on August 14th and 26th of 1765. What influenced Ebenezer Mackintosh and people in the lowest levels of Boston society to act in opposition to the Stamp Act? The question of how radical the American Revolution was has been asked repeatedly by historians. However, few historians have looked specifically at what influenced Ebenezer Mackintosh to become involved politically. The research gap about this influential historical character led to in depth research of primary and secondary historical texts. Only one historian has written specifically about Mackintosh, which means research for this project focuses broadly on political rhetoric in newspapers and pamphlets. Research also focuses on people involved in the Boston Stamp Act protests who left more documents then Mackintosh, like Samuel Adams and James Otis. This process has led to a comprehensive analysis of the influences on three levels of society in Boston. The most significant implication of this research is that people acting in the mob and at the lower levels of society in Boston were operating on their own set of influences, and were not simply manipulated by political leaders at the highest level of society. Much of the historiography on this subject builds toward the consensus that Ebenezer Mackintosh was enlisted by a group called the Loyal Nine (later the Sons of Liberty). This project offers more agency to Mackintosh.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Poepping, David | Glade, Betsy | History |

**Session A-GS** **Spring Survey 2013** **Glacier South**

**Spring Survey of SCSU Students 2013**

The Saint Cloud State University (SCSU) Survey Research Center conducts a Spring survey of SCSU students regarding opinions and behaviors on various issues. The student survey is constructed by a group of student directors who have researched and studied the issues and proper methods for collecting data. The questions consist of longitudinal data collection, director's interests on specific and current events and client questions from departments across campus. The survey provides an opportunity for directors to work first-hand with data collection methods as well as research analysis and professional presentation of results to the SCSU community. The topics often covered in the survey address issues such as safety, tobacco use and ban policy, drinking behaviors and beliefs, race and gender concerns and health and the environment attitudes. The software the survey used was *Sawtooth Software's Ci3 Questionnaire Authoring Version 5.0*, a state-of-the-art windows-based computer-assisted interviewing package. The survey operates a Computer Assisted Telephone Interviewing (CATI) Lab on 19 interviewer stations; each includes a computer, a phone, and a headset. A representative sample of currently enrolled students is contacted via landline or cell phone for the survey. The student's survey is a platform for student directors to incorporate research methods and practices into a professional grade presentation for the SCSU community demonstrating the opinions and behavior of the community.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Stay, Karen; Amisi, Thierry; Ilboudo, Patrick; Kafle, Bikal; Kelly, Kimberly; Moulder, Breanna; Smith, Jacob; Svendsen, Benjamin | Robinson, David; Kulas, John; Hammes, Michelle; Zerbib, Sandrine; Wagner, Steven; Frank, Stephen | Political Science, Psychology, Sociology and Anthropology, Statistics |

**Session A-VN** | **Information Systems I** | **Voyageurs North**

**Processing Speed Variation**

The interaction of data structure size with the allocation of cloud computing resources efficient use of available memory and processor time has been important since the beginning of digital computing. In recent times the landscape has changed to emphasize distributed computing through the advent of cloud computing. While the flexibility and service advantages of cloud computing are well recognized, the degree to which cloud computing can enhance performance is often over looked. To ascertain the potential performance gain of cloud computing this project will undertake a series of experimental trials using array data structures of various sizes to collect objective data. Specifically, the trials will begin with a small array size and then the array size will be increased repeatedly. The program containing the arrays will be run on both a traditional stand-alone computer and within a virtual zone within a cloud creating a sample of about 30 data points from which the effect on processing speed can be determined. All hosts will use the Linux operating system and standard operating system tool will be used to collect and analyze the performance data collected.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Yang, Allen; Roelle, Gregory; Katzmarek, Angela; Pitts, Terry; Scotting, Amanda | Guster, Dennis | Information Systems |

**Can a Distributed Key System Broken up Over Multiple Nodes Provide Greater Security Robustness While Meeting System Performance Requirements?**

Given the ever-growing need for network security, both over the Internet and internal networks, encryption of transmissions has increasingly become the norm. The fact that the TCP/IP protocol suite does not feature any form of encryption in its nascent state means that special protocols such as SSL and later TSL were added to give greater connection security. The greatest vulnerability to the various encryption methods available today is not so much the breaking of the encryption through theft or destruction of the key. A typical method of key generation in the client/server model is where a shared key is generated from data from both sources, thus making it more difficult to derive the key. The goal of this paper is to show that a distributed key system can be implemented across multiple nodes of a network, thereby increasing the security robustness of the network while maintaining a requisite level of system performance. For the purpose of this paper, six nodes (N) were chosen as a test bed, with a (N-3) logic required for key generation, thus any three of the nodes can combine to form the requisite key. With this system any three servers could go down and the system would still be functional. The test bed environment was implemented using Node.js to create the web servers for the distributed key creation. For our purposes, baseline robustness was met if it would take several years for one CPU to break the encryption, while requisite performance was sub-three second authentication. Statistical tests were also performed on the quantum random number generator to determine the comparative quality of its generated numbers, and a "sliding-window" structure was analyzed.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Paulson, Benjamin; Schwarting, Joel | Guster, Dennis | Information Systems |

**Should I Use Open Source Software?**

I want to show how I answered some of my questions about open source software such as: Should I Use Open Source Software? How safe is it? How legal is it? Is it easy to implement into whatever? What does it really mean to be open source? Is it really free? What is a sure way to find what your looking for? Free software vs non-free software? But more importantly, I want to know, is open source software worth using to jump start a project of some sort? or is it better doing the whole project without open source help?

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Pearson, Anthony | Herath, Jayantha | Computer Science and Information Technology |

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

### A Comparative Analysis of Contaminant Removal in Two Residential Stormwater Ponds

This joint collaboration between the City of Saint Cloud and Saint Cloud State University attempts to improve the city's current Storm Water Pollution Prevention Plans. We determined key contaminants and monitored pond efficiency, and its potential effect on receiving bodies of water. In many places, storm water ponds serve a dual purpose of filtration system and landscape enhancement, which can be problematic if the ponds are not functioning efficiently. The goal of this study was (I) to determine effective design parameters for storm water pond management, including how the shape of the storm water pond affects removal of contaminants and nutrients from the water and (II) potential best management practices (BMPs) to improve storm water pond environments within residential areas. To determine effectiveness of contaminant sequestering in two different storm water designs, a linear and a quasi-natural pond, water samples were taken at both inflow and outflow of each pond monthly for five months, and analyzed for TN, TP, NH4, Cl, As, and Zn. Sediment was analyzed for polycyclic hydrocarbons and heavy metals. Vegetation and macro invertebrate assemblages diversity were analyzed to identify habitat impairment. Water and sediment analysis documented in many cases a decrease of contaminants from the inflow to the outflow suggesting efficient removal of these compounds from storm water and sequestering into the sediment. Macro invertebrate assemblages lacked diversity while the vegetation varied considerable between sites in native and invasive assemblages. Interestingly one pond design showed a greater ability to sequester contaminants whereas the other showed a greater vegetation diversity and richness. The City of Saint Cloud has proposed to dredge and modify the pond that has a high amount of contaminants and has proposed to enhance the vegetative buffer surrounding the other pond in an effort to encourage residential participation in the maintaining of this particular storm water pond.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Irving-Hewey, Ruby | Schoenfuss, Heiko | Biological Sciences |

### Muscle Differentiation in the Waterfall Climbing Hawaiian Goby

The objective of this project was to determine whether red and white muscle fiber composition in the climbing muscles of the *Sicyopterus stimpsoni* differ between habitats, which are subsequently further upstream of waters. This was done to determine whether the muscle fiber compositions plays a role in determining how far upstream a fish can penetrate. Participation was done in field studies to collect samples, and upon return to SCSU analysis was done to compare the red and white fiber composition between fish caught from four different sites (each upstream of a waterfall) in the Nanue stream of Hawaii. The samples shipped back to SCSU were sectioned using a cryotome, and the muscle fibers were differentiated using an ATPase staining protocol. The muscle samples were photographed after staining and quantified based on coloration to determine the red/white muscle ratio. The fiber composition assessment was done for three different climbing muscles of the *S. stimpsoni* caught and were compared among sites. The results provide insight into the physiological function of each muscle in the climbing movement. This is important because if physiological differences are found across the same species, it can be shown that physical demands from an environment have direct effects on the ratio of red/white muscle fibers found.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Baumann, Travis | Schoenfuss, Heiko | Biological Sciences |

**FSAE: Car Project**

Formula SAE is a student design competition organized by the Society of Automotive Engineers. The competition involves designing and building a car to compete in various competitions. The 2012 Formula SAE car team at Saint Cloud State University designed and built a car for the competition held in spring of 2012. This project was an enormous undertaking involving 8 team members from the mechanical engineering department. The car itself had problems on race day and was unable to compete in the dynamic portions of the competition. Due to the scale of the project and the work involved, it is necessary for future car teams to have a strong starting point. Larger schools have teams with up to 100 members and far greater budgets. This year's project is to analyze and document last year's design while pinpointing areas for improvement. The project includes a full parts list of the car with assembly diagrams, a dynamics lab for future students, a stress analysis of the car under peak loading conditions, and a report outlying the areas of improvement. The stress analysis will be used to help future teams understand what type of loads will be applied to various components of the finished race car, allowing them to create lighter suspension components.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Graff, Isaac; Young, Timothy; Flatz, Cole | Miller, Kenneth | Mechanical and Manufacturing Engineering |

**Medical Device Design Process**

The medical device industry is a multibillion dollar business. New innovative technology can save or improve the life and health of millions of people. Medical devices can range from large diagnostic medical equipment to microscopic surgical devices. Synovis Life Technologies, a subsidiary of Baxter International, specializes in developing, manufacturing and marketing innovative surgical tools and implantable biomaterials. Developing these products requires significant background research. Material and physiological properties of the human body need to be determined for modeling and testing. Biocompatible materials with the required properties of the design need to be found and computer models to simulate the device under the conditions it will be exposed too need to be developed and verified. Mechanical properties and models of blood vessels are important for medical devices associated with the circulatory system. A pulsatory blood flow model was developed to predict blood vessel dilation. The selection of acceptable device materials is limited to those approved by the Food and Drug Administration (FDA). Biocompatible and bio-absorbable materials are of special interest. Finite element models and experimental results of simulated blood vessels undergoing pulsatile flow will be presented.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Johnston, Faith; Magnan, Logan; Gould, Peter | Covey, Steven | Mechanical and Manufacturing Engineering |

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

**Twitter in the Chemistry Classroom**

Student engagement is linked with student performance. This research addresses one possible avenue that may get students engaged in an auditorium class; social media. In particular the research addresses how Twitter use effects student engagement and performance in a chemistry class. Surveys were conducted at the beginning of the semester to determine students' prior knowledge, beliefs, and behaviors regarding Twitter use. Throughout the semester, a certain level of Twitter use was required, and all communication on the course Twitter account was categorized and analyzed. This analysis will be presented. Twitter has some advantages and some disadvantages as a tool to increase student engagement in a general chemistry course. Results will be discussed in terms of what worked well and what did not work well in this course. This investigation is ongoing. Results will be presented which have been collected up to the time of the presentation. Twitter is a useful tool in some circumstances. Other options for increasing student engagement will be discussed and compared to Twitter. 1.See Kassen-Noor, Eva. (2012). Twitter as a teaching practice to enhance active and informal learning in higher education: The case of sustainable tweets. Active Learning in Higher Education. 13(9). Retrieved from: http://alh.sagepub.com/content/13/1/9.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Schwieters, Rita; Sperzel, Kristin | Robinson Parsons, Ruth | Chemistry |

**Alignment and Test of an All-Reflection Real Fringe DASH Interferometer**

Upper atmospheric wind measurements are valuable in gaining a better understanding of the dynamics present in the upper atmosphere. These dynamics can affect communication systems, power distribution systems and satellite orbits. We are developing a new laboratory prototype of a small, rugged optical instrument that may eventually be capable of measuring atmospheric winds from a compact, CubeSat class satellite platform. The instrument is designed to measure wind speed and direction using the Doppler shift of the airglow spectrum. It produces real interference fringes from a spectrometer design such that the phase and frequency of the interference fringes depends on the wind speeds. The accuracy of measuring the fringe phase, and therefore wind speed is limited by practical difficulties such as thermal drift of the instrument and the finite signal-to-noise ratio of the measured fringe pattern. In this poster we will describe our laboratory set-up for generating interference fringes and outline the computer and laboratory tests intended to measure the precision that the fringe phase can be measured. We will also compare our phase precision results with a theoretical model.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Horn, Jacob; Anderson, Benjamyn | Harlander, John | Physics and Astronomy |

**Automated Robot Chassis**

The Electrical and Computer Engineering department has seen many robots designed and constructed by students during their senior academic year. All of the existing designs however have been operated manually and with ad-hoc control. None of the designs have been automated or had control algorithms developed to control the output of the motors. To compensate for this, we are designing a module that will act as an automated base for future projects. The device will be comprised of three different microcontrollers. The first microcontroller (dsPIC30F5013) will be responsible for basic digital motion processing and digital control for the motors. The second microcontroller (PIC16F1825) will be responsible for the ultrasound and servo control so that the device can perform object avoidance. The third microcontroller is the high-level microcontroller that will act as a demonstration of future project development. The high-level drop in will integrate object data from the PIC16 and motion data from the dsPIC30 and manipulate it to the users specification then feed commands to the dsPIC30 to make motion adjustments.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Anderson, Benjamyn; Ulrich, Keith | Petzold, Mark | Electrical and Computer Engineering |

**Sleep Cycle Monitoring Alarm Clock**

The purpose of the project is to build an alarm clock that improves the effectiveness of the user's sleep. Some sleep research suggests this can be done by waking the user at the end of the rapid eye movement (REM) stage of sleep. This project monitors the user's brainwaves and eye movements and uses the waveform to determine the sleep stage. It wakes the user at the end of the REM within a user-defined time window. The system consists of a sensor array built into a sleep mask (headband) to capture the user's brain waves and eye muscle movements. The mask transmits the waveform data via Bluetooth to the bedside device. The bedside device analyzes the sleep data, determines the sleep stage, and gives an audio signal when the wake event occurs.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Wang, LuLu; Kettlewell, Jason; Horn, Jacob | Thamvichai, Ratchaneekorn | Electrical and Computer Engineering |

**Buffalo Trail-Marker Survey**

Little is known about how informed the residents of buffalo are about the signage and map kiosks recently placed, and whether residents are using them. It is important to know if the newly placed signs and map kiosks have been helping the residents of Buffalo. This will provide the Public Health office with information whether they should continue to fund this project. Will provide information if any changes need to be made. Provide information of the awareness of the trails, signs, and kiosks. Social issues are that Buffalo city needs to get the word out more, so more people are aware of the kiosks. Political issues include possibly finding more ways to fund the project in order to make it easier for people to find it. Environmental issues could possibly be how the trails are not in as many places as the people wish it would be.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Muhonen, Rianne; Herrala, Brent; Ackerman, Jacque; Riordan, Megan; Rudziva, Tatenda; Weber, Laura; Richter, Danielle; Brezinka, Katie; Goerdt, Briana; Engh, Kaycie | Hiemenz, Melinda; Henry, Vonna | Nursing Science |

**Pesticides and Parkinsons**

This poster presentation explores the relationship between environmental factors and Parkinson's disease. Current research identifies direct links to pesticide use and increased rates of Parkinson's disease in the Midwestern United States.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Fuchs, Matt; Emslander, Erin | Lindstrom, Sheila | Sociology and Anthropology |

**Resources and Strategies Used by Speech-Language Pathologists to Address Ethical Dilemmas**

Speech-language pathologists (SLPs) encounter a wide-array of ethical issues in the workplace. This study examined the types of resources and strategies SLPs utilize and request in order to competently address ethical dilemmas. Interviews and surveys were conducted with 68 SLPs representing a range of work experience in clinical and educational settings. Interview results indicate that common resources SLPs utilize include professional organizations, workplace policies, staff consultation, and mandated regulations. The most frequently requested resources included workplace policies, continuing education, and more support from the American Speech-Language-Hearing Association (ASHA), including consultation services and ethics forums. A majority expressed that their approach to handling ethical issues has changed over time. Survey results indicate that most participants are confident when handling ethical issues, with a majority feeling knowledgeable about the ASHA Code of Ethics and believing that ethics is well understood in the speech-language pathology field. Overall results suggest that while a majority of the SLPs feel confident when handling ethical situations, more support could be provided by professional organizations and workplace environments.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Erickson, Sarah; Athmacharan, Varshni; Stenerson, Sandra; Anderson, Robert; Hoyme, Alissa | Whites, Margery | Communication Sciences and Disorders |

**Investigation of Success in Blended Learning Sections of ENGL 191 and LIB 180, Using ISRS and Map-Works Data**

In fall 2012 SCSU implemented a pilot project for blended learning for new-entering first-year (NEF) students for student taking ENGL 191 (academic writing), with a paired LIB 180 (researching and information literacy). A cohort of 143 NEF students fall 2012 received final grades in this blended-learning option. Also in fall 2012, MAP-Works was launched at SCSU for NEF students. MAP-Works (Making Achievement Possible) is Educational Benchmarking's (EBI) software for tracking NEF student retention and success based on surveys, student demographic and academic-performance records, and notes from contacts and interventions. Our method was to compare the academic outcomes for the students who participated in the blended-learning project with risk measurements and other information collected from the MAP-Works assessment as well as MnSCU's Integrated Student Record System. Our analysis is useful for faculty and administrators planning programs to support NEF success, offering indicators of risk and questions to ask NEF students that will identify common problems and suggest interventions.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Edwards, Bretta; Erdahl, Thomas; Gaikwad, Sampada; Halonen, Daniel; Lo, Siu-Pong; Nwoke, Uchechukwu | Robinson, David; Cogdill, Sharon | English, Statistics |

**Stearns County Public Health Breastfeeding Resources**

Stearns County requested that we assess needs for improvement in relation to resources available for the promotion of breastfeeding. A descriptive research study was conducted through interviews used to assess the professionals' views of current breastfeeding resources. The results of research found that the majority of agencies surveyed in Stearns County believe that they have adequate resources for women, but 60% of agencies see room for further improvement. Stearns County should continue to work with clinics and hospitals to improve their availability and quality of resources regarding breastfeeding for their clients.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Teachout, Jenita; Klinkhammer, Nichole; Martell, Heather; Gip, Melanie; Lee, Seng Tiong; Holstad, Maren; Igoe, Jacob; Gruis, Thomas; Omoke, Emmanuel; Rajkarnikar, Sagun | Hiemenz, Melinda; DeBruycker, Jo | Nursing Science |

**Comparison of Full-time and Part-time Students at SCSU**

This project is a part of the large Enrollment Analytics Project at Saint Cloud State University. This project will compare full-time students vs. part-time students and their academic progress. When we compare the two groups, we find that the number of part-time students at SCSU is relatively small when they begin their college careers, only 320 out of 12529 students. But over time, the number of part-time students increases as financial and academic pressures become more severe. The purpose of this study is to find out more about these two groups of St. Cloud State University students and how these differences might impact college success. For this research we got the data with the help of the Office of Institutional Research; our dataset consists of 12529 students over a five year period from Fall 2006 to Spring 2010. We have used GPA and financial condition as additional variables of interest. To complete the analysis we have used JMP, Minitab and Excel software. The results of this study will be helpful in understanding success patterns among part-time students, in comparison to full-time students.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Thapa, Jenny | Robinson, David | Statistics |

**Travels Through the Air**

Through the development of our country there have been many changes and progression to get to where we are today in all aspects of life including but not limited to equal treatment and equal rights of one another. This project will focus on the equability of women in society, specifically in aviation. It will compare and contrast women's experiences and successes from past to present. My own experiences through the air and reflections will be drawn on as well.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Ferguson, Connor | Olson, Angela | Aviation |

**A Comparison of Flight Experiences**

Despite the changing times, the aviation industry has been, and still is, dominated by the white male. The adversities women and minorities must overcome in this area will be explored and compared. This study of diversity in the aviation industry will compare and contrast three separate diverse experiences of those in the industry. These experiences come from a current female pilot flying for American Airlines, our own personal recollection of flying in a small airplane, and past female pilots that had to overcome adversity in the aviation industry. Each experience will be explained in full detail along with the unpacking of the relationship with the others in search for common ground and distinction. These experiences will help the overall understanding of what a woman or minority has gone through in such a white-male dominated industry.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Manuel, Laura; Andersen, Joshua; Blumhoefer, Michael | Olson, Angela | Aviation |

**Effect of Persistent Organic Pollutants on Proliferative Capacity of Immune Cells**

Type 1 Diabetes (T1D) is an autoimmune disorder characterized by increased blood glucose level as a result of the destruction of insulin-producing pancreatic beta cells. Beta cells are destroyed by autoreactive immune T cells. Whereas the cause of T1D still remains unknown, it is observed that T1D may be diagnosed in people who are exposed to the environmental pollutants. If so, the function of T cells, that lead the attack of pancreatic beta cells, should be affected as well. However, there are no data about direct effects of persistent organic pollutants, such as p,p'-DDE (DDE), a metabolite of DDT (commonly used pesticide worldwide for treating malaria) on immune cell function. Therefore, the focus of this project is whether, DDE affects the function of T cell population of NOD/Ltj mouse T cells. NOD/Ltj mouse is the best-described animal model for studying T1D. Here we hypothesize that DDE will affect T cell function. In order to test the hypothesis, we used spleen cells of NOD/Ltj male mice as a source of T cells. The proliferation of T cells, exposed to an agent that induces specifically T cell proliferation, was used as a measure of T cell functionality. As DDE needs to be dissolved in *dimethyl sulfoxide* (DMSO), and DMSO per se reduces T cell proliferation, we substantially trouble-shooted in order to find the optimal concentration of stock DDE solution that would not affect T cell proliferation, while still keeping DDE dissolved. The problem has been solved, so we are currently testing varying concentrations of DDE (from 100 to 0.013 ug/ml) added to the cultures of T cells in order to find out whether DDE affects the function of T cells.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Chitrakar, Baadal; Lea, Allan; Phung, Huong; Lamsal, Vivek; Gong, Hwee Kiat | Cetkovic-Cvrlje, Marina | Biological Sciences |

**Synthesis of an Anti-Cancer Drug Using Goniothalamin as a Natural Product Template**

Approximately 60% of all new cancer drugs are derived from natural products. Goniothalamin, a natural product extracted from tree bark of the *Goniothalamus genus*, which has been shown to induce apoptosis in cancer cells. It is hypothesized that goniothalamin's biological activity is due to its ability to react with thiols. Goniothalamin has been shown to decrease levels of glutathione, a natural antioxidant, found in cancer cells. This causes a redox imbalance, which ultimately leads to cell death. Thiol-reactive compounds, like goniothalamin, have also been shown to inhibit nuclear factor-kB (NF-kB). NF-kB is a transcription factor that has been implicated in unregulated cell growth. Through a multiple step sequence, a novel analogue of goniothalamin has been prepared that replaces the lactone core of the natural product with a cyclohexenone. The synthetic sequence features a unique enol ether protection of a beta-diketone which allows facile preparation of the desired analogue. It is anticipated that the novel goniothalamin derivative will be a better cancer drug than the natural product. The structural modifications made are also predicted to increase the synthetic derivative's metabolic stability as well as enhance its' ability to react with thiols, thus making it a better cancer drug candidate.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Dumke, Addison | Mechelke, Mark | Chemistry |

**Distinctive Characteristics of Blue Hole 5, San Salvador Island, Bahamas**

Blue Hole Five on San Salvador Island, Bahamas was examined with focus on its hydrogeology, geologic record, and biota. This lake is ~0.1 ha with an epikarsted limestone bedrock shoreline overlain by surface vegetation. Algae, liver gel, mollusks, ostracodes and minnows are prevalent in the lake. The keyhole shape of Blue Hole Five consists of a shallow bench and a deeper hole (~6 m) with steep sides and a conduit connecting it with marine water and subjecting it to tidal fluctuations. Saline water entering the conduit explains the increased salinity (~17 ppt) and total dissolved solids (TDS) of approximately 17.8 g/L, along with the anoxic bottom conditions. Lake conditions in Blue Hole Five are brackish with a pH that varies between 7-8, and a halocline at approximately 4 m. Sediment cores from three different sites in Blue Hole Five were collected in June 2012. At all sites, a dark green flocculent layer comprised the uppermost sediment, likely representing very recent human impacts such as vegetation clearance for the surrounding failed housing development. Sediments were composed almost exclusively of mollusk shells in some intervals, with fine grained material only appearing in deeper layers. Loss on ignition (LOI) results show the sediment is predominantly carbonate, with small amounts of organic material and even less inorganic material, probably deposited dust from a remote area. XRF data confirmed high levels of carbonate and strontium. SEM and smear slide observations showed an abundance of various mollusk shells and ostracodes. *C. costata* and *A. auberiana* mollusks were the most consistently dominant species throughout the first and last sites. Calcite, pyrite, diatoms, foraminifera, and iron oxides were discovered under microscopic examination. With a geologic record involving minor anthropogenic impact, Blue Hole Five will provide vital contrasting results with neighboring Bahamian blue holes in ongoing research.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Osborne, Tashiana | Myrbo, Amy; Flynn, Elaine; Berman, Mary Jane; Brady, Kristina; Gnivecki, Perry; Michelson, Andrew; Bowles, Rachel; Park-Boush, Lisa; Spano, Nicholas; Fedele, Juan | Earth and Atmospheric Sciences, Sociology and Anthropology |

**Expression, Isolation, Purification and Analysis of ALDH-9A1, a Fusion Protein from *E.Coli***

*Aldehyedehydrogenase-9A1* is an enzyme which catalyzes dehydrogenation of *gamma-aminobutyraldehyde* to *gamma-aminobutyric* acid (GABA). It is a fusion protein from *Escherichia coli* (BL21 DE-3 pLysS strain) transfected with pET-19b vector containing the gene coding for ALDH-9A1. In this project, the expression of ALDH-9A1 enzyme is being tested using enzyme assay. Before that, the recombinant ALDH-9A1 from *E. coli* is grown in LB media with antibiotics and IPTG in the laboratory. The *E. coli* culture grown is then lysed for the isolation of ALDH-9A1 from the *E. coli* using sonication technique. The activity of the enzyme is tested using enzyme assay to make sure it is present in the supernatant form the sonication. ALDH-9A1 is then subjected to purification process where recombinant ALDH-9A1 is passed through PD-10 column for buffer exchange and desalting. Each step is followed by centrifugation and enzyme assay. The active enzyme is stored in the refrigerator in 4 degrees with glycerol. The stored enzyme is ready to react with ALDH-9A1 inhibitors to check how the activity is affected by these different inhibitors. Thus, the recombinant ALDH-9A1 is purified and its inhibition with different inhibitors is checked. The results can further be used to find the cure for diseases in humans and many other biological functions as ALDH-9A1 is an important enzyme in human body.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Gopali, Bishow | Sreerama, Lakshmaiah | Chemistry |

**Motivational Interviewing and Student Alcohol Use**

A major public health concern in the United States today is college drinking. Heavy alcohol consumption during college is associated with significant adverse effects on the health, well-being, and safety of young adults. This research explored whether an individual and group intervention utilizing motivational interviewing with students could help guide self-change in alcohol use and reduce risky behavior. Motivational interviewing is client-centered counseling that elicits behavioral change by helping students identify where they are now, where they want to be, and a goal plan to utilize supports so students find the motivation and confidence to reach their goals surrounding alcohol use. Twelve students attended a 30-minute individual counseling session to discuss their current alcohol consumption and compare that to a year ago. A cost/benefit worksheet was completed and each student's online e-Chug alcohol assessment was reviewed. Students then attended one 90-minute group counseling session with three to five other students utilizing motivational interviewing to discuss triggers, set a goal, and discuss coping methods. Students completed an evaluation form following this session. After three months, students were sent another multidimensional evaluation form to reassess their alcohol use and review their motivational and confidence levels regarding their individual goal plan. The twelve students were compared to a similar control group. From this research, motivational interviewing did positively impact students' ability to adhere to goals and reduce alcohol consumption over a three-month period following the group session. Students also shared positive comments about the benefits of the support they felt from the group. The larger implications of this study include reducing multiple student conduct issues surrounding alcohol use before they arise by implementing motivational interviewing group sessions as a sanction for student conduct. By building in a support system, student behavior and the university's image can be positively impacted.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Simon, Tricia | Klepetar, Adam | Counseling and Community Psychology |

**Accessibility to Oral Care in Litchfield**

Oral health plays a vital role in everyone's overall health. Research for this topic is needed because oral diseases and disorders affect health and general well-being in everyone. Through data collection, using the Oral Health Survey, the research is attempting to assess how much of a priority oral health is to residents in Litchfield, as well as the accessibility of services for oral health. Our survey is significant to Public Health Nursing because oral hygiene is essential for overall health of not only the individual, but also the community as a whole. This is important because the Meeker County Public Health agency oversees the Litchfield community's health and well-being. Our goals revolved around the priority of oral care and accessibility the residents of Litchfield had to dentist facilities. We wanted to use the information so Meeker County Public Health Nurses could educate the community on the importance of brushing their teeth twice a day and have the ability to verbalize what "good oral health" truly is. Several implications of our findings were social, environmental, and political. In regards to political barriers, many businesses would not allow us to survey their customers. Speaking from a social standpoint, we had to survey people on the street and door to door, which limited our sample size. Finally, the weather also limited whom we surveyed on the streets. In conclusion, there are significant oral health disparities within the American population. Research was needed for this topic because oral diseases and disorders affect health and general well-being in every person's life. With proper education, the public could become more aware of the importance of adequate dental hygiene.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Schleppenbach, Alexis; Larson, Jillian; Phuyal, Samjhana; Greenwaldt, Courtney; Twinawe, Sarah; Ezepue, Patricia; Hill, Mackenna; Leet, Tracey | Hiemenz, Melinda; Henry, Vonna; Bajari, Ann; Zelenak, Mary | Nursing Science |

**International Student Usage of Campus Recreation Facilities at the College of St. Benedict**

Previous literature indicates the students who participate in campus recreation activities, such as intramurals, aerobics and yoga classes, the fitness center, pool and weight room, have higher chance of retention, a higher GPA and increased overall self-confidence. The international student population is ever growing in the United States. Literature has shown these students go through drastic changes attending college in the United States. Such stressful changes, which fall on top of the usual college student stressors of academics and work include, being deprived of their traditional sources of social support and familiar means of communication and overall cultural adjustments. Throughout my internship in the campus recreation department at the College of St. Benedict, I became interested in lack of St. Bens international students taking part in campus recreation events and activities. Why is this? What barriers are there? What may be missing pertaining to the students' development in college that could be attained through being active in campus recreation services? What is the department missing, that could be an addition, which will better serve this population of students? Through surveys and personal interviews with international students on the St. Bens campus, I received useful and knowledgeable information, which can be applied in the future of the department. Departments on college campuses need to be more aware of needs of the international student population. More questions need to be asked relating to how the department or office is currently serving these students and if it can be improved.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Ivancich, Kelsey | Barth, Carrie | Counseling and Community Psychology |

**What is the Origin of the Holocaust?**

Our research question is, "What is the origin of the Holocaust?" We chose this idea for our project because we are all intrigued by the Holocaust. Something that really sparked our interest is trying to identify stereotypes involving the Holocaust and trying to break those stereotypes, such as the notion that Adolf Hitler was the sole leader of the attempted annihilation of the Jewish people. We will be doing this by narrowing in on a specific origin of the Holocaust by developing a timeline and identifying certain trigger points. Our timeline will start during pre WWI, but we recognize that there was more history involving the animosity toward the Jewish people. Our research will demonstrate why the Jewish people were specifically targeted for the Holocaust. Our timeline will travel through the whole event of the Holocaust and identify a definitive stop point. Our goal is to compare timelines from US, Germany, and other involved countries. By comparing these timelines, we hope to establish a timeline free of stereotypes and generalizations in attempt to find a more accurate origin of the Holocaust.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Kowalke, Lori; Fischer, Kelsey; Larson, Halie; Berry, Julie; Traczek, Cara; Eschrich, Alyssa; Hicks, Elizabeth | Julius, Matthew; Tabakin, Geoffrey | Biological Sciences, Human Relations and Multicultural Education |

**The Capability of a Random Forest to Predict Crouch Gait Status of Adolescents with Cerebral Palsy**

Approximately 3 out of every 1000 children is diagnosed with cerebral palsy. It is estimated that 70% of these individuals develop a crouched gait resulting in an inability to fully extend the knee during walking. The source and soundest treatment of this gait deviation is undetermined and if unsuccessful treated or untreated can leave the individual unable to walk due to patellar fracture. The purpose of this research was to determine the primary factors that disposed a child to go into or come out of crouch. Gait analysis data of children between the ages of 8 and 13 with cerebral palsy were extracted from the Gillette Children's Hospital Gait and Motion Analysis Laboratory database (N = 444). A random forest analysis was performed on this data to determine the greatest predictors of crouch gait. Preliminary results indicated a significant decrease in the presence of crouch gait from the first gait analysis to the second, $t(443) = 4.65$, $p < .001$. Also, 242 subjects were always in a crouched position (55%), 39 subjects went into crouch (9%) and only 73 came out of crouch (16%). While these results implied surgical intervention had success in treatment of crouch gait, the decrease in crouch gait was marginal from a clinical standpoint. Also, once crouch gait developed, it was unlikely the subject would come out of it. This means the overall improvement of those in crouch was poor and greater knowledge of the causes of the abnormality prior to invasive surgical procedures is needed.

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

| **Student Presenter(s):** | **Sponsor(s):** | **Department(s)** |
|---|---|---|
| Willaert, Emily | Street, Glenn | Kinesiology, Health and Physical Education |

**Perceived Importance of Strength and Conditioning Relative to Sports Orientation in Junior Alpine Ski Racers**

Central Region 1 of the US Ski and Snowboard Association (USSA) completes an annual fitness assessment. In spite of recommended fitness levels for aerobic and anaerobic capacities, little improvements have occurred over the past seven years (Holmes, et al., 2011). Understanding how skiers perceive year round training for a season that lasts five months or less is important to motivate skiers and maximize potential in the off season. The purpose of the study is to determine if perceived importance of year-round strength training for alpine ski racing relates to individual sports orientation calculated from the Sports Orientation Questionnaire (SOQ). The method of study used subjects (N=38) junior alpine ski racers ages 11-18 all members of Region 1 CUSSA completed the SOQ and several open ended questions regarding year-round training practices. The SOQ was scored using a Likert scale as described by Gill et al. (1988) and the three orientation subscales(competitive, goal and win) were calculated. The results showed there were no significant differences between gender and age for achievement orientation ($p>0.05$); however, a difference was found between each subscale ($p<0.05$). Competitive ranked highest followed by goal and win with scores of 21.6, 15.0, 9.9, respectively. Only older athletes (17+) had a significant positive correlation between competitive and goal orientation subscales ($r= 0.73$) as well as goal and win orientation subscales ($r=0.77$). Skiers reported some importance to participate in other activities for skiing. Open ended responses for training included weight lifting and endurance sports i.e. soccer, lacrosse, track, and working with a personal trainer. Yet, skiers rely on teammates, coaches or personal trainers for off- and pre season conditioning. The study concluded that achievement orientation is high in alpine skiers. Older skiers display a stronger correlation between competitive and goal as well as goal and win orientations compared to younger athletes. Perhaps fostering competitive and goal achievement orientations will result in improved preseason fitness assessments.

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

| **Student Presenter(s):** | **Sponsor(s):** | **Department(s)** |
|---|---|---|
| Holmes, Kelley | Bacharach, David | Kinesiology, Health and Physical Education |

**A Comparative Study of Success Measures in Off-Campus and On-Campus First Year Students at St. Cloud State University**

This project is a part of the large Enrollment Analytics project at St Cloud State University. First year college students who live off-campus experience college differently than first year college students who live on-campus. Often times, students who reside off-campus hold jobs, commute to the university and spend less time in campus extra-curricular activities. This study seeks to find out more about the differences between these two groups of St. Cloud State University students and how these differences might impact college success. First, GPA and retention rates were compared for on-campus and off-campus first year students at St. Cloud State University. For this comparison, we used dataset of 12529 students. We have used GPA as a measure of success. Second, MAP-Works survey information was analyzed for success factors of these two populations using data from the Fall 2012 NEF cohort. MAP-Works is a comprehensive survey that is administered to all incoming first-year students. Survey responses between on-campus and off-campus first year students were studied for differences in success factors. Third, a focus group consisting of seven off-campus first-year students was conducted in order to better understand the lived experiences and unique challenges this population may experience at St. Cloud State University. Finally, using the results of the research, recommendations are made for how St. Cloud State University might help off-campus students to succeed in and through their transition in college. These recommendations come from the literature and best practices in the field of higher education.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Jagodzinski, Nicole; Pakhreen, Sushma | Barth, Carrie; Robinson, David | Counseling and Community Psychology, Statistics |

**Creating a Peer Mentor Program for Underprepared Students at a Technical and Community College**

Mentoring programs are frequently utilized in higher education as a tool to enhance the college student experience, foster student development, and increase retention. The PIPEline (Persistence in Post-Secondary Education) Program at St. Cloud Technical and Community College was started in 2010 as a retention initiative for academically underprepared students based on standardized test scores. The program consists of four requirements for students: proactive advising sessions each semester, weekly tutoring, and attendance at a financial aid seminar and school-wide Student Success Day. In addition to current interventions, the PIPEline Program will implement a peer mentor program to further retention efforts. Our project describes the creation of the peer mentor program including relevant supporting literature, proposed program elements, and expected outcomes for students.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Grussing, Cara; Richards, Pauline | Barth, Carrie | Counseling and Community Psychology |

**Plant Functional Response to Prescribed Fire Regime Variables**

Midwestern oak savanna is very rare; only 0.02% of pre-settlement savanna remains. This is largely due to conversion to agriculture, fire suppression, and the extirpation of native browsers like elk and bison. Savannas were destroyed or gradually transitioned to an eastern deciduous forest type as a result. At Sherburne National Wildlife Refuge, prescribed fire has been the primary tool for oak savanna restoration. All fires are not created equal. Timing, frequency, extent among many other variables influence post-fire response of vegetation. This study examines how species diversity of different plant groups responds to three fire regime variables: number of treatments, treatment interval and interval deviation. Plant response to fire variables differed depending on the habitat being examined.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Duerkop, Peter | Cook, William | Biological Sciences |

**Smart Mug**

Smart Mug is a liquid container that will keep track of the amount of liquid intake by an individual. Based on the liquid volume and type it will also measure and record the amount of calories the user will consume. The user will be able to observe his/her liquid intake through Android application or computer graphical user interface. Reasons behind pursuing this project include improving health and lifestyle. Liquid intake, especially water is crucial for human life. Research shows that being 2% dehydrated can seriously degrade physical and mental functions and being 15% dehydrated is likely to be lethal. Smart Mug will allow users to keep track of their liquid intake. Besides recording the amount of liquid, Smart Mug it will also record and display the calorie contents of the liquid consumed. Health conscious individuals thus can keep track of their liquid calorie consumption. Smart Mug will connect to users Smartphones or computers and allow them to observe their liquid intake activity. This will help them set personal goals, such as, drink six glasses of water a day or consume no more than 500 calories of orange juice. Smart Mug with help targeted populations. This product is for health conscious individuals. They can make their life easier by letting the mug calculate the water intake for them. Also they can use the mug to keep reminding them to drink water or other liquid. Various patients can get benefited as well, for example: people with kidney problems have to make sure they drink only certain amount of water in a day; they can let the mug keep track of water intake.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Khan, Adib; Maharjan, Kuldip; Shrestha, Gamir | Yao, Aiping | Electrical and Computer Engineering |

**Effects of Age and Gender on Thyrotropin and Thyroid Hormones Among Western Sudanese**

Hypothyroidism, a very debilitating physiological condition is endemic in the Darfur region of the Sudan. The genesis of this condition has been attributed to the low soil iodine content in affected areas. Although some studies have shown a marked, debilitating sequelae of this condition during early developmental stages, little research efforts have been directed at determining the ontogeny and longitudinal effects of this condition in Western Sudan. In this study, we determined the effects of age and gender on plasma thyrotropin and thyroid hormone levels in Sudanese from the Darfur region. Subjects consisted of 74 subjects including 31 males and 43 females with ages between 11 months and 89 years. Ages and gender of subjects were obtained together with one blood sample. Plasma samples were analyzed for *thyrotropin* (TSH), total *triiodothyronine* (T3), and total *tetraiodothyronine* (T4) by radioimmunoassay. Subjects were grouped into five age groups and the effect of age and gender on TSH, T3 and T4 were determined. Further, correlation coefficients among gender, age and the three different hormones were determined. Mean plasma T3 was similar among all ages and between gender but mean T4 was significantly higher ($P<0.017$) in males than in females but was not affected by age. TSH was significantly dependent on age ($P<0.0007$) being highest in individuals with ages less than 20 years. However, this result may reflect supranormal *thyrotropin* levels in two subjects. The effect of gender on mean hormonal concentrations was not significant. Mean plasma T4 was positively correlated with mean plasma T3 ($r2 = 0.662$; $P<0.0001$) and age was negatively correlated with TSH, T4 and T3 with the relationship attaining significance for both TSH and T3. The current results suggest that whereas T4 levels are comparable to those in euthyroid controls, T3 and *thyrotropin* levels indicate the incidence of hypothyroidism in these subjects.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Yahya, Nawal | Gazal, Oladele; Jacobson, Bruce | Biological Sciences |

**Flu Vaccine - So How Effective is it?**

Objectives: 1) To promote awareness about the H1N1 vaccine and, 2) To present information that may help clear misconceptions that some persons behold regarding the effectiveness of the H1N1 vaccine. Problem Description and Background Information: Influenza (commonly known as 'the flu') is a highly contagious respiratory illness caused by influenza viruses. It can cause mild to severe illness, and at times if complicated can lead to death, especially among older individuals, those who are immune compromised, or have any other major risk factors that debilitate their immune system. Prevention and Efficacy of the Vaccine: Although every season the circulating flu viruses are different, the best way to prevent it is by becoming vaccinated each year; for this reason the Advisory Committee on Immunization Practices (ACIP), Annual Influenza Vaccination is recommended for all U.S. residents aged 6 months and older. The "seasonal flu season" in the United States can begin as early as October and last as late as May. In order to develop effective vaccines, every year a study is conducted on the Flu vaccine for its peak, its effectiveness and how it works. One common question from the public is "Can I get vaccinated and still get the flu?" The answer is "YES" for different possible reasons. The most common reason is a mismatch between the vaccine viruses and circulating viruses that impact how well the vaccine works. Influenza, or the Flu, can be a serious problem that adversely impacts many people if they are not vaccinated, are immune compromised, or have other risk factors that put the person at high risk. For this reason, it is important to promote the prevention of this contagious disease via awareness, proper education, and by receiving the flu vaccine annually.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Tamang, Ritu; Khadka, Elina | Antunez, Hector | Kinesiology, Health and Physical Education |

**Century Farms of Melrose Township**

The principal objective of this paper is to determine and analyze the ethnicity of Century Landowner Farms of Melrose Township in 1868-1910. Stearns County has a rich history of agriculture and there has been a hotspot for Century Farms in Melrose Township. Studying sources located in the Stearns County Historical Museum, with additional readings from published books, academic journals, and Annals of the American Geographer. It is hypothesized that the present landowners of Century Farms in Melrose Township, Stearns County reflect the proportional to the ethnic populations in 1868-1910. This research will provide valuable information regarding the ethnicity of current population and the population in 1868-1910.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Palmer, Justin | Torguson, Jeffrey | Geography, Planning and Community Development |

**St. Cloud State and the Graduate Geographic Hinterland**

As earning a graduate degree is increasingly becoming more and more important to earn a well-paying job, it is important to see where St. Cloud State fits in within a large network of graduate colleges and schools. Also, it is important to examine the patterns, spatially and major-related that these "hinterlands" are comprised of. In order to do this, a wide variety information about graduates from St. Cloud State and other graduate information will be analyzed. The results will be compiled and presented as a GIS map showing the different "hinterlands" that are centered around graduate schools.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Smiles, Deondre | Torguson, Jeffrey | Geography, Planning and Community Development |

**Study and Analysis of Intelligibility Problems on Consonants Between Chinese English and General American English**

With the increasing number of Chinese students coming to St. Cloud, it is not uncommon for native English speakers to not quite understand what Chinese people are saying due to their accents. This project is presenting the three ambiguity pairs of consonants which Chinese people usually pronounce differently from General American English. These are [l] and [n], [v] and [w], and [ð] and [θ]. In certain situations, these ambiguities may cause and intelligible problems and misunderstandings. At first, for analyzing how different these consonants pronounced by Chinese, I interviewed six Chinese students from our school and recorded their voice. I found out the data of the pitch, intensity, F1, F2, F3 and duration for each consonant with the assisting of Praat, the phonetic analyzing application. These data are integrated again and being compared with these of general American English in the online application called NORM. So we could predict generally about how different the sounds of Chinese English are, by showing the statistic evidence. In addition, I compared the series of data mentioned above of same consonants in the pronunciations Chinese words. In this way, we can see if the different articulations are influenced by our native language (Chinese) or these are non-related with our native language. Chinese English teachers should be aware of these consonants, when they teach English in China, especially for the teachers who teach elementary schools. Also, for Chinese English learners should be conscious about these possible ambiguities, when they communicate with native English speakers.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Zhang, Borui | Koffi, Ettien | English |

**Acoustic Vowel Space of Low Vowels**

This project was performed to compare the acoustic vowel distance between GAE (general American English) low vowels and my vowel production to determine if intelligibility problems arise. Twelve vowels were recorded including the vowels [e] and [o] in the study because according to Hillenbrand et al. they are simple vowels and not diphthongs. Each word was repeated three times for a total of 36 utterances. Also, three dimensions which correspond acoustically to different formant measurements such as F0 (Pitch), F1 (Height), F2 (tongue retraction and advancement) were analyzed as well as the Duration. The measurements on the spectrograms showed that my vowel production can cause intelligibility problems to GAE speakers. The findings of this project suggest that more attention should be given on speech intelligibility for L2 English acquisition to help prioritize the pronunciation instruction and target more specifically on the segments that are more likely to interfere with non- native English.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Alfaro Cruz, Jose | Koffi, Ettien | English |

**Punk Goes Criminal: Does Music Transform Youth Into a Political Threat?**

This study examines the role of punk music as a factor in contemporary socio-political life. Research for this study comes from books on social and political protest, press releases, psychological studies, news sources, and online blogs. Psychological studies remain conflicted on the impact music plays on the molding of an individual's mind. Yet, society tends to attach a stigma to those who listen to music which challenges conventional norms. Those who are involved with or promote counter-establishment messages through song can face punishment from the institution. Pussy Riot, a Russian, female, punk group, made international headlines for their bold display of "punk prayer" inside the Cathedral of Christ the Savior in Moscow on February 21, 2012. Whether this group, and similar punk bands, pose a concrete threat to cultural and/or political order by influencing younger listeners, and the next generation of political decision-makers, toward acts of rebellion and dissent is examined in this study.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Kroll, Alastriona | Blinnikov, Mikhail | Global Studies |

**Acoustics Fricatives and Affricates**

This project highlights on the linguistic analyzation of acoustics Fricatives and Affricates productions. The acoustics of Fricatives and Affricates are two components of Manner of Articulation which I find very interesting. They have a wide variety of features such as, voicing and stops. This project has analyzed, proved and studied how English sounds are distinguished between the Manner of Articulation of Fricatives and Affricates. Voiced and voiceless feature of Fricatives and Affricates were the significant point to be focused and analyzed during the process. Some observations were also made by analyzing the process of waveform, airflow and how segments behave in spectrograms. In addition, there is also a discussion about the perception of variability from speaker to speaker at the end of the project.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Ruanglertsilp, Ekkarat | Koffi, Ettien | English |

**Phonetic Variation Between P and B**

Anyone who has ever worked with English language learners will notice that many learners confuse minimal sound pairs. As learners grow more advanced in their English skills, they may be able to distinguish sounds based on semantic clues, that is, the meaning of the words surrounding the word in question. However, especially for early learners and their teachers, it can be frustrating and problematic when one cannot discern the difference between two sounds. Speakers of Somali and Arabic are not able to hear a distinction between the consonants [p] and [b]. Why does this confusion occur? My research project will use the computer software Praat to analyze voice onset time, or VOT. According to Ladefoged (2005) voice onset time is the time that passes between the release of a stop consonant and the onset of vibration in the vocal chords. By measuring the VOT, we can explain why confusion occurs between these sounds.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Haugen, Leah | Koffi, Ettien | English |

**Do Re Me: Sight Reading Music Notation**

Evidence suggests that the cognitive processing involved in learning, performing, and listening to music involves widely distributed networks of neural activity (Altenmuller, 2003), and the form and structure of music are processed in areas of the brain associated with language the cerebral cortex (Hicock, Buchsbaum, Humphries & Muftuler, 2003; Levitin & Menon, 2003). It has been proposed that the most effective way to memorize music is first to learn the melody of a song separately from the text and rhythm, then to put them together (Ginsborg & Sloboda, 2007; Hallam, 1995; Henry, 2008). Solfege is a naming system for notes in a scale that has been shown to aid in learning and memorization of music (Dobszay, 1992; Larson, 1993; Reiginger, 2012). The purpose of this study is to explore cognitive effort of vocalists sight-reading music. The researcher tested the effectiveness of solfege notation on accuracy of learning an original song. The researcher also compared brain activity present when a novel melody is learned first without lyrics, followed by the addition of lyrics, to brain activity present when a novel melody is learned first with lyrics, followed by the removal of lyrics. Students enrolled in vocal and or choral ensemble course reviewed the original score of music before singing. Participants sang the music three times which was recorded for later analysis. The presence of solfege notation was manipulated between subjects while the presence of the lyrics was a within subject variable. Participants completed a short questionnaire to rate the difficulty of each task and report experience with music literacy. Performance improved with each attempt, indicating that learning occurred through rehearsal. Presence of solfege notation had no effect on performance. However, participants rated this condition as most difficult. Implications for musical instruction are discussed.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Larson, KatiLee | Valdes, Leslie | Psychology |

**Speech-Language Pathologists Satisfaction with Workplace Ethics Policies and Procedures**

This study investigated speech-language pathologists (SLPs) level of satisfaction with ethical training and ethical policies in the workplace, as well as common strategies used by SLPs to handle situations when personal or professional ethics conflict with workplace policies and procedures. Graduate students interviewed and surveyed 68 SLPs from a variety of work settings and experience levels. Results indicated that the majority of SLPs are satisfied with ethical training and ethical policies. SLPs reported being comfortable with overall workplace ethical practices and sufficient support when handling ethical dilemmas. Despite this, only half stated they were very comfortable reporting unethical behavior. While the majority of SLPs stated that their personal ethics and their workplace ethics policies were in agreement, over half of SLPs indicated they had performed duties that contradicted their personal ethics. The most common ethical dilemmas involved productivity requirements, paperwork, and disagreements about the best plan of care. The most common strategies for handling such dilemmas included talking to the administration or supervisor of the workplace, and "doing the best they could". While the majority of SLPs felt that no workplace ethical policies were missing, others indicated that policies were non-specific or lacked written documentation.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| McInnis, Marnie; Berthiaume, Alissa; Bowen, Syrena; Miller, Meghan; Swanson, Rochelle | Whites, Margery | Communication Sciences and Disorders |

**Choosing a Vendor Managed Inventory System**

Vendor managed inventory (VMI's) is one of the more popular roles of third party logistics providers. The authors did library and internet research to gain more insight on companies such as Home Depot that use VMI's. The value of this study is that, with VMI's, suppliers are better able to project what the demand for their customers will be if they have real time data to look at. The supplier can also ensure that their product is being properly displayed by its customer having one of its representatives in house. Retailers can also benefit from better product knowledge and reduced risk.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Frank, Kendall; Greiner, Eric; Kelm, Jordan | Polacco, Alexander | Management |

**Study of Science and Society's Views on the Benefits of Space Experiments**

Informed citizens need to be aware of the benefits of the space program including space exploration, space experiments, and the International Space Station. This understanding will help people better understand why the space program needs to be well funded. The purpose of this research is to determine the beliefs, behaviors, and knowledge of K-12 students about the space program. I conducted a survey of a sample of the whole enrolled in earth science classes in a suburban Midwestern middle school. The beliefs, behaviors, and knowledge of those surveyed will be presented. This preliminary study was used to provide baseline data for the beliefs, behaviors, and knowledge of students about the space program. The Solar system is a focus for Minnesota's science standards at this level. My research can help the school district make decisions about curriculum in this area.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Soderling, Stephanie | Simpson, Patricia | Biological Sciences |

**Steps Speech-Language Pathologists Take to Resolve Ethical Dilemmas**

The purpose of this investigation was to examine ethical issues in the field of speech language pathology by exploring the steps speech language pathologists (SLPs) take to address ethical dilemmas, how SLPs determine a course of action, what factors influenced their decisions and how ethical issues get resolved. Sixty-eight licensed SLPs were interviewed and surveyed regarding ethical issues in the field. The results of this study indicated that ethical dilemmas were evenly distributed among family/client, co-worker, and workplace violations. SLPs are highly aware of when ethical violations occur and engage in a number of strategies to deal with them, including doing nothing. Even though SLPs experience ethical violations on the job, it appears that ethical violations with clients, supervisors and fellow professionals are infrequent occurrences. This should be reassuring to students entering the field and the profession as a whole.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Bendoraitis, Emily; Proell, Hannah; Onken, Jessica; Qualen, Paula; Regnier, Stacy | Whites, Margery | Communication Sciences and Disorders |

**Remote Air Quality Monitor Device**

Air pollution affects millions of people each year worldwide, especially asthma patients and seniors. The purpose of the project is to develop a remote air quality monitor device that allows individuals to monitor the level of pollutant gases in a certain location. In this project the three of the common pollutant gases (carbon monoxide, nitrogen dioxide, and sulfur dioxide) and smoke are monitored. The user is able to monitor the level of the pollutants based on a specified threshold, and take measurements. The monitor device is very useful for people who have difficulty breathing especially asthma patients and elderly. The device can also be very useful for environmental researchers and industries that generate these pollutants. The device must be waterproof, able to function during winter and summer seasons, and operate at least two months before requiring the battery to be recharged. The device monitors pollutant levels and notifies the user when specified thresholds are exceeded. The air quality monitoring system will have two devices; a remote device that can be placed outside and take measurements and a local device which communicates with the remote device via Bluetooth. The remote device will have the sensors that measure the level of the gasses and a memory to log the data into. The local device stores the data from the sensors, displays on an LCD and has a USB connector to view data on your computer.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Gebremariam, Bereket; Mitiku, Aida | Glazos, Michael | Electrical and Computer Engineering |

**Environmental Development and Human Displacement: An Analysis of the Divergence and Integration of Environmental and Human Needs in Botswana and Nepal**

The positive effects of biodiversity conservation are abundant, but environmental needs are often at odds with human needs. This study weighs the costs and benefits of Protected Areas, examining the social consequences of parks' creation and exclusion of local or native people, and exploring related political ecology discourses and strategies. This analysis is derived mainly from scholarly research, reference to the World Database of Protected Areas, and includes a review of surveys administered in a 200-level Cultural Geography course at St. Cloud State University regarding subject awareness. Case studies of Botswana and Nepal are utilized to depict specific strategies as well as explain the distinctions within each geographical, political and social context. Finally, I suggest that biodiversity conservation is too narrowly perceived, imposing Western ideals of conservation, and Western solutions to the social burdens of such imposition. Discussions and applications of small-scale, human-focused conservation could potentially advance and sustain human-conservation efforts further than current models.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Engelen, Kelsey | Blinnikov, Mikhail | Global Studies |

**Contact Zones of the Winnebago: Tracing Cultural Exchange from Wisconsin to Nebraska, 1634-1874**

The Winnebago Tribe has been engaged in a process of cultural exchange for hundreds of years and in doing so it has embraced and rejected cultural characteristics to help it survive. The purpose of this research is to explore this process within various contact zones between the Winnebago Tribe and Europeans in their movements from Wisconsin to Nebraska between 1634 and 1874. Examined is the degree to which the Winnebago held on to their culture and to what extent it was adapted in order to thrive and survive in changing political, social, and geographical contexts.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Vallis, Amanda | Torguson, Jeffrey | Geography, Planning and Community Development |

**Robotic Applications in Small Businesses**

Innovative companies have benefited from robotics technology to make gains in performance and profits. This poster investigates the use of robotics in various repetitive & predictable tasks such as warehouse logistics & manufacturing, as well as recommend areas where small manufacturing companies may use robots to compete with low cost foreign competitors.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Acharya, Jyotindra; Sze Tho, Min Soon | Polacco, Alexander | Management |

**Obesity in America and Education of Healthy Living**

According to the CDC, researchers found that obesity is 75% genetic. Researchers studied the adults who were adopted as a child, and found that they were closer to their biological parents weight that adoptive parents. More than 1/3 of U.S. adults are obese. The causes or epidemic reasons for obesity include: genetics, environmental factors and lack of physical activity. The CDC is currently working with 25 states to prevent obesity by: implementing policy, system, education on healthy living and environmental strategies with five target areas proven to work. The five areas are: increase consumption of fruits and vegetables, increase physical activity, increase breastfeeding initiation and duration, decrease consumption of sugar drinks, decrease consumption of high-energy-dense foods. The CDC has been tracking the relation to obesity with environmental and behavioral factor. The CDC program called "Vital Signs" results showed that no state met national goal of reducing adult obesity rate to less that 15% and 30% adults were obese. In relation to income statistics have found that men with higher incomes are more likely to become obese than those with low income. The higher income women are less likely to be obese then that of low-income women. Women with college degrees are less likely to be obese compared with less educated women. In conclusion, America's major problems with obesity include: lack of physical activity, poverty and genetics. The CDC's efforts in rehab and reconstruction in the country are making improvements statistically through: educating adults on health eating and increased physical activity.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Beaudry, Katherine | Zuo, Jiping | Sociology and Anthropology |

**Would You Like Aresenic With That?**

Many people love to drink juices but what most of us do not realize is that one of the ingredients we might be consuming is arsenic. Arsenic is a natural element in our environment that can contaminate drinking water and irrigation systems. This research explores what arsenic is, its effects on humans and the arsenic content of common foods and drink items.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Panek, Kimberly | Lindstrom, Sheila | Sociology and Anthropology |

**Comparison of Barefoot and Shod, Sub Maximal Triple Jumping**

The triple jump is a demanding track and field event, in which athletes try to cover the greatest horizontal distance, over three jumps. Given the high velocities of the athletes and the demands of performing three consecutive jumps, triple jumper's bodies are subjected to high stresses. Given the high demands of the event, triple jumpers are subject to various lower limb injuries. One method used in gauging the risk of injury in activity is by monitoring the rate of loading of the ground reaction forces (GRF) occurring during the activity. The aim of this study is to determine if tripling jumping barefoot will decrease the rate of loading of the GRFs found in the triple jump In order to determine the GRFs of the athletes during each phase of the triple jump, three AMTI force plates were used. To ensure the athletes were at the same level of the force plates a 58' long wooden runway was constructed to house the force plates. Subjects were asked to perform submaximal trials both barefoot and shod. The GRFs of each trial were compared for changes in rates of loading. Preliminarily results indicate subjects experienced a decrease in peak rate of loading after the first and second phases of the triple jump when jumping barefoot compared to shod (on average a decrease of 29.6 BW/s was found) the difference was not statistically significant ($p > .10$). The results indicate athletes may experience a lower rate of loading when performing the triple jump barefoot as opposed to shod. This could lead to lower injury risks associated with the event but further research is needed before changes in performance could be advocated.

**Presentation Index:** B-B 49 **Present Time:** 9:00 AM

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Milkovich, Steven | Street, Glenn | Kinesiology, Health and Physical Education |

**How Safe is Fluoride in Our Water?**

This poster presentation explores both the benefits and potential health risks of fluoride being added to our community water supplies. Those in favor of water fluoridation view it as a health benefit because it prevents dental cavities. Opponents argue that there are potentially adverse health effects from overexposure to fluoride.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Klinkner, Brandy | Lindstrom, Sheila | Sociology and Anthropology |

**CSB/SJU Bonner Program**

Did you know that over 85 different colleges and universities in over 22 states have a Bonner Program implemented on their campuses? College of Saint Benedict/Saint John's University (CSB/SJU) is one of three institutions in the state of Minnesota with a Bonner program on their campus. What exactly is the Bonner program? According to the National Bonner foundation, the Bonner program is designed to heighten the overall education of students and members by asking them to engage in ongoing service work and helping them develop the experience, skills, knowledge and values necessary to make that work meaningful and lasting. Bonner Leaders are required to participate in regular training and reflection activities sponsored by their campuses, their community partners, and the Bonner Foundation. They are committed to social justice, civic engagement, spiritual exploration, diversity, international perspective and community building. For my practicum, My major project was to put together a training manual with engaging, meaningful, and beneficial modules that will help them strengthen their skills as they navigate throughout their educational and personal journey in the CSB/SJU Bonner Program. Having a well-established and meaningful training manual tailored to CSB/SJU students is crucial to the success of the Bonner Program. My poster will also offer information on how transformative and experiential learning theories play an important role in this program.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Studniski, Hien | Imbra, Christine | Educational Leadership and Higher Education |

**Student Workshop on Networking, Image Savvy and First Impressions**

The poster will showcase the outcome of an interactive workshop for students held at St. Catherine University in St. Paul on November 1, 2012. The workshop was conducted by Roshini Rajkumar, a speaker, communication coach, host of *News & Views* on WCCO Radio, and author of *Communicate That!* Students learned about the IAP Communication Formula; foundational image content including wardrobe, face, and body language; how various image and wardrobe characteristics affect a person's ability to communicate and influence. Students also received on-site feedback from Roshini and trademarked *Communicate That!* materials.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Cline-Cole, Anita | Imbra, Christine | Educational Leadership and Higher Education |

**Be a Community Superhero Workshop**

"Be a Community Superhero" is the title of the 2-hr workshop that was created during my practicum experience at the College of St. Benedicts during the Fall 2012 semester. Working in the Intercultural Center at the College of St. Benedicts, it was important to create a new, but re-usable, workshop to teach students and campus leaders about topics including diversity and social justice. The interactive workshop taught students to recognize and counter downfalls of the bystander effect while also exploring themes of fairness and equity.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Staszewski, Zachary | Imbra, Christine | Educational Leadership and Higher Education |

**Culminating Experience at the SCSU Minnesota Teacher Licensure Exam Center**

The poster session will be about the Saint Cloud State University MTLE Center. The poster will include information about the center and how SCSU uses this center to assist students. The poster will give a brief history and overview of what the Minnesota Teacher Licensure Exam (MTLE) is. In this poster session topics such as passing rates of the MTLE compared to the Praxis test, why Minnesota chose the MTLE test, what makes SCSU unique, and other areas will be displayed on the poster to give the viewer an overview and idea of why the MTLE Center at SCSU is important to the campus. The poster will also briefly discuss the importance of the Education Department at SCSU and how many teachers graduate from SCSU compared to the rest of the colleges in the nation.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| O'Doherty, Adam | Imbra, Christine | Educational Leadership and Higher Education |

**Practicum in the Office of Residential Life**

The practicum outline and goals were designed to give the graduate student opportunities to experience the breadth of Residential Life operations while allowing for a focus on student conduct issues in residential life. Goals were developed by the graduate student in partnership with the practicum supervisor, Phillip Hernandez and the practicum faculty sponsor, Dr. Christine Imbra. Practicum goals follow: develop an understanding of Residential Life Operations and the role and impact of the office on the greater university community; be able to articulate the entire annual operational structure; serve as advisor to the Restorative Justice Conduct Board and gain an understanding of Restorative Justice and the Student Conduct/Judicial Process; facilitate the Integrity Sincerity Workshops and provide assessment; become knowledgeable in motivational interviewing and applied ethics in student behavior.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Huwe, Gretchen | Imbra, Christine | Educational Leadership and Higher Education |

**Individual Learning Styles**

"Learning is the process whereby knowledge is created through the transformation of experience" (David A. Kolb, 1984). A learning style is an individual's preferred method of acquiring knowledge. My interest in adult learning styles is both professional and personal. Professionally, I want to understand adult learning styles to design and deliver effective training. Personally, I want to have a better understanding of my own learning style. This research is a review of David A. Kolb's Learning Styles and Experiential Learning Model.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Holstad, Deb | Imbra, Christine | Educational Leadership and Higher Education |

**Understanding The Minnesota Teacher Licensure Exams (MTLE)**

The Minnesota Teacher Licensure Examinations (MTLE) are Minnesota's testing program that began September 1, 2010. The MTLE tests are the only exams taken for Minnesota licensure. The MTLE tests include the basic skills, which consists of three subtests: reading, writing, and mathematics; a test of general pedagogy, which consists of two subtests; a test of content knowledge for the specific licensure field, which consists of two subtests with the exception of elementary content knowledge, which consists of three subtests. Many St. Cloud State University (SCSU) teacher candidates have taken the MTLE tests. I have compiled data indicating how SCSU students are performing in relation to other state institutions to date. SCSU places great emphasis on the MTLE tests and has a strong desire to help it's students prepare for the exams. I have delineated the steps SCSU's Student Support Services take to help prepare prospective teachers pass the exams. Due to my direct contact with students through the MTLE Center, I have had the opportunity to apply theory in relation to student success rates.

**Presentation Index:** B-B 57 **Present Time:** 9:00 AM

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Thorstad, Kimberly | Imbra, Christine | Educational Leadership and Higher Education |

**Attention and Aging Stereotypes**

This research seeks to determine what participants from different age groups believe the quality of attentional ability of aging adults. There will be two groups surveyed for data collection: undergraduate college students and working adults. Participants will be ask to rate the frequency of different cognitive failures (e.g., forgetting to turn off a light) for themselves, the typical college student and the typical retiree. I predict the undergraduate participants will have a poorer outlook of older adult's attention compared to that of the working adult's perception of the attention of older adults. Implications of stereotyping the elderly will be discussed.

**Presentation Index:** B-B 58 **Present Time:** 9:00 AM

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Hughes, Tyla | Valdes, Leslie | Psychology |

**Immigration Path and Livelihood of Somali People in Stearns County**

This project encompasses County and Census Records, historical archives, surveys and interviews that were conducted to determine the immigration path of the Somali people in Stearns County from 1991 to 2012. The main goals are to locate where in Somalia the immigrants are coming from, when and how they arrived and their overall migration path to Stearns County, including additional information of possible peaks of immigration and their livelihood in Stearns County. The information gathered will conclude the common paths of migration, waves of immigration, and mode of immigration. I believe that the information gathered will indicate that Somali people started to come to Stearns County from a similar area in Somalia around the early 1990's. I believe that they arrived through a similar, direct immigration path and that the majority of Somali people arrived in observable immigration waves.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Meade, Jesse | Torguson, Jeffrey | Geography, Planning and Community Development |

**Community College Connection (SCSU/SCTCC)**

The Community College Connection (CCC) is a dynamic and unique program between St. Cloud Technical College (SCTCC) and St. Cloud State University (SCSU), supporting incoming students as they fulfill the requirements to successfully accomplish admission requirements at SCSU. By providing courses taught by SCTCC faculty members on the campus of SCSU, students are offered small class sizes and a multitude of academic and student support services. The CCC program typically takes a student one to two semesters to fulfill math, English and student success course prerequisites, and upon successful completion, participants are transferred in as SCSU students. Through math and English tutors, students are able to access academic assistance through the Write Place and Math labs, and utilize campus Recreation, Health Services and the Miller Center. In addition, CCC students are able to engage in on-campus activities, participate in student organizations and live in campus housing. This promotes an atmosphere of student support and inclusion at the campus of SCSU.

**Presentation Index:** B-B 62 **Present Time:** 9:00 AM

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Rogers, Meredith | Imbra, Christine | Educational Leadership and Higher Education |

**Restoration of Eastern White Pine at Mille Lacs Kathio State Park**

Eastern white pine (*Pinus strobus*) was once a major component of the forest ecosystem in eastern Minnesota. Widespread logging operations and associated wildfires quickly removed a significant amount of white pine from the landscape at the turn of the 20th century. With current goals of preserving and protecting natural resources, restoration of white pine has become a priority with resource managers. There has been an ongoing restoration effort at Mille Lacs Kathio State Park since the 1980's; but, even with over 40,000 seedlings planted since 2000 the success of reestablishment has been minimal. To investigate this in detail, in May 2011, 400 one-year and 400 two-year old seedlings were planted into eight plots. Plots are in sets of two with one plot 30 meters and the other 500 meters in from the road that runs through the park. Half of the sample was randomly selected to be bud-capped. Bud-capping deters browsing by establishing a barrier between the seedling and white-tailed deer. To date, two-year old seedlings have been browsed significantly more than one-year olds, regardless of whether or not bud-caps were present. Preliminary results also indicate that distance from road does not have a significant effect on browsing rates. Data are being collected through April 2013 and will be analyzed to identify mortality sources, successful reestablishment, and ultimately to guide future attempts to restore the conifer component of Mille Lacs Kathio State Park.

**Presentation Index:** B-B 64 **Present Time:** 9:00 AM

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Arola, Kyle | Cook, William | Biological Sciences |

**Fostering Faculty & Student Engagement in Research within the Academy**

This project created an outreach strategy framework to foster faculty and student engagement in research activities at St. Cloud State University. The multifaceted outreach strategy included oral presentations, revisions and additions of grant writing resource material, reconstruction of the D2L site for the Office of Sponsored Programs and a grant writing workshop. The framework was designed to reach diverse audiences on campus, some departments included: Kinesiology, Gerontology, Counseling & Community Psychology, Geography and Planning & Community Development. The exposure to a variety of departments was essential to increase awareness of the support, resources and events the Office of Sponsored Programs has available to the faculty and students interested in research activities at St. Cloud State University. The intended result is increased engagement in research activities by faculty and students in a variety of disciplines and departments.

**Presentation Index:** B-B 65 **Present Time:** 9:00 AM

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Duran, Terren | Imbra, Christine | Educational Leadership and Higher Education |

**Bioinformatic Analysis of Cysteine and Methionine Biosynthesis Pathway in the *Bacillus cereus* ATCC 14579**

*Bacillus cereus* is a Gram-positive, rod-shaped, facultative aerobic bacterium. In 1969, *B. cereus* was first successfully isolated from a case of fatal pneumonia in a male patient and its characteristics were studied. *B. cereus* is found to be very harmful to humans and causes foodborne illness (such as nausea, vomiting, and diarrhea). As a soil bacterium, *B. cereus* can spread easily to many types of foods such as plants, eggs, meat, and dairy products, and is known for causing 25% of food-borne intoxications due to its secretion of emetic toxins and enterotoxins. *B. cereus* however is not all pathogenic. Some *B. cereus* strains can be beneficial as probiotics for animals. With the genetic background information of *B. cereus* 100% completed, future investigations can be expanded to understanding the pathogenicity for treatment and for the development of antimicrobial drugs. To understand the biosynthetic pathway of amino acids cysteine and methionine in the bacteria, the Department of Biology at St. Cloud State University under the funding of the Department of Energy Joint Genome Program had undergone rigorous research to identify pathways from commonly found metabolites. Cysteine is a hydrophilic amino acid and is known for its metal ion binding capacity, iron sulfur cluster precursor and antioxidant glutathione precursor. Methionine is classified as a nonpolar amino acid, and known to be always the first amino acid of a protein (start codon). Together with the cysteine, methionine is one of the two sulfur-containing amino acids. In the attempt to identify the genes responsible for the synthesis of these amino acids in the biosynthetic pathways in *Bacillus cereus* comparative genomics approach will be taken.

**Presentation Index:** B-B 66 **Present Time:** 9:00 AM

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Songnaba, Pengdwende | Kvaal, Christopher | Biological Sciences |

**Development and Monitoring of a Lignin Depolymerization by Laccase Using Cellulolytic Microorganisms**

Following its identification as an alternative clean energy for fossil fuels, the production of ethanol has been sought after quite intensively. In the traditional ways, the production of ethanol used starting materials such as sugarcane and starch-rich grains. Recently, however, lignocellulosic materials have been shown to hold an advantage due to their abundance in nature and their low-cost. Lignocellulosic materials can be converted to ethanol via pretreatment methods followed by post-treatment processes. Over the years, many procedures have been developed to pretreat and process lignocellulosic materials. The latest and most economical procedure to date, however, is Consolidated Bioprocessing (CBP). CBP combines deligination (pretreatment), hydrolysis, and fermentation of cellulose in one single-step carried by genetically engineered single micro-organism. The micro-organisms that are deployed in CBP are either cellulolytic or ethanologenic organism with a modified genetic trait. In many cellulolytic organisms, an enzyme that oxidizes and degrades lignin has been found. This particular enzyme or laccase is copper containing enzyme that is involved in the oxidation of variety of substrates including phenols. Laccase breaks down lignin to other hydrolysable forms that can be separated from the cellulose easily. Since the delignification of the lignocellulosic materials is the rate determining step in the scheme of ethanol production and laccase carries the delignification reaction, it is important to understand how Laccase depolymerizes lignin and how to monitor the reaction. Accordingly, in this study, a procedure to assay lignin depolymerization by laccase will be developed and further modified to monitor the direct depolymerization of lignin by laccase-containing cellulolytic micro-organims.

**Presentation Index:** B-B 67 **Present Time:** 9:00 AM

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Sheikh, Mohamed Deq | Sreerama, Lakshmaiah | Chemistry |

**Investigation into the Knowledge, Beliefs and Behaviors of Midwesterners into Issues Regarding the Great Lakes**

The North American Great Lakes: Superior, Michigan, Huron, Erie, & Ontario contain 84% of North America's surface fresh water. This is 18% of the world's supply. The Great Lakes is one continuous drainage basin that covers an area greater than Texas, and half the size of Alaska. It is easy to see that this system is one of great importance for us: for our environment, economy, and appreciation. We want to protect the Great Lakes because without having conservative ideas, they can become more polluted, less pristine, and eventually, not so Great anymore. Historically, the Great Lakes have been used as a wealthy resource for fishing, transportation, and water consumption. In modern history, it has been subject to pollution, diversion into other basins, and irreparable consumption. The researcher will have surveyed a population of general education college students at a large Midwestern University as a preliminary study into their knowledge, beliefs, and behaviors about water issues regarding the Great Lakes. The findings are important because we are trying to produce students who are willing and able to be productive citizens of our world to make reasoned decisions about important issues. The results of the study will provide feedback for general education in the sciences. Until residents of the region can see what issues lie ahead for the Great Lakes will we be able to conquer the possibility of losing their prestige.

**Presentation Index:** B-B 68 **Present Time:** 9:00 AM

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Girtz, Stephen | Hoff, Jean; Simpson, Patricia | Biological Sciences, Earth and Atmospheric Sciences |

**Adult Basic Education College Transition Program**

Community colleges have been rising in popularity for students of all background. North Hennepin Community College in Brooklyn Park, MN is one of the most diverse two-year colleges within Minnesota. A good portion of students at North Hennepin Community College starts out as ESOL students. Students when taking the accuplacer test, must not be tested into Adult Basic Education, or they will be turned away. With this problem, administrative and faculty members developed the ESOL College Transition Program at North Hennepin Community College. This program was broken down: idea, development, responsibility/budget, and program goals and assessment. I was able to implement an Information Session and Orientation for these students to transition efficiently into college students.

**Presentation Index:** B-B 69 **Present Time:** 9:00 AM

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Yang, Dia | Imbra, Christine | Educational Leadership and Higher Education |

**Global Population Growth**

The population of the world is increasing at an alarming rate. As population has grown, we have become more aware of the limits of our global resources. This research focuses on the environmental challenges of sustaining an ever increasing human population.

**Presentation Index:** B-B 70 **Present Time:** 9:00 AM

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Golden, Kadylyn | Lindstrom, Sheila | Sociology and Anthropology |

**Characterization of Magnetite (111) Surface Oxidation Using Conductance Atomic Force Microscopy (CAFM)**

Heavy metal and other contamination from agriculture and industry poses a great threat to the small amount of fresh, clean water available worldwide. New methods are being developed to drastically improve the cost and effectiveness of heavy metal removal. One such method which shows great promise uses magnetite ($Fe_3O_4$) crystals as a sorbent for solvated heavy metal ions; however, the efficiency of removal diminishes with time. Though the structure of magnetite is known, the surface chemistry under environmental conditions remains to be fully understood. The reduced oxidation-reduction ability of magnetite is believed to be due to the formation of an oxide capping layer. To further the understanding of magnetite's surface chemistry, research was done to investigate oxidation growth of the magnetite (111) surface using an applied voltage through conductive atomic force microscopy (CAFM). A single crystal of magnetite was prepared using chemical mechanical polishing (CMP) and oxidation of the (111) surface was induced using an applied potential of +641 mV for 5, 10, and 15 minutes. Simultaneously, the conductance and topography of the magnetite surface was measured and mapped to provide electrical and topographical information. By using CAFM to induce and characterize oxidation growth on a magnetite (111) surface, the growth mechanism of the oxide overlayer can be studied, resulting in a deeper knowledge of the surface reactivity and oxidative behavior of magnetite under environmentally relevant conditions.

**Presentation Index:** B-B 71 **Present Time:** 9:00 AM

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Swanson, Jacob | Petitto, Sarah | Chemistry |

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

The applications of organic molecular semiconductors as active elements in photovoltaics and Field Effect Transistors (FET) depend on efficient surface charge transport. Nano-scale structure and consequently charge transport characteristics are often very different at the surface, as opposed to the bulk of a material. In order to characterize the surface charge transport in organic semiconductors, a Lateral Field Time-of-Flight (LFTOF) apparatus has been designed, constructed, and applied to the study of tetracene single crystals. The surface charge carriers are excited by a pulsed nitrogen laser and are transported by an applied voltage across the crystal. A current is read by an oscilloscope and the transit time of the positive charge carriers (holes) can be measured, allowing for the determination of surface charge carrier mobility. A high mobility implies that the crystal has an efficient surface charge transport, which would prove useful for the development of organic solar cells or flexible electronics.

**Presentation Index:** B-B 72 **Present Time:** 9:00 AM

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Harter, Joseph; Schulzetenberg, Aaron; Paulsen, Justin | Lidberg, Russell | Physics and Astronomy |

**Germination Requirements for Native Minnesota Prairie Forbs**

As the historic prairie continues to disappear, interest in establishing restorative prairies has increased. Because of the desire to establish native forb populations in restored areas, a germination study was conducted to determine the treatments necessary to break dormancy for thirteen native Minnesota prairie species. Dormancy is the prevention of a viable seed to germinate until conditions are optimal for seedling survival, is impacted by many environmental factors, and can be physical or physiological in nature. Methods to break dormancy tested include cold-moist treatment and disruption of the outer seed-coat. The effects of stratification and scarification treatments were dependent on species identity. Of the tested species, four did not produce significant differences between treatments likely due to low sample size, four species demonstrated significant differences between control trials and treatments, and five species did not produce enough germination to make statistical statements likely due to lack of necessary treatment to break dormancy mechanisms. Future work should test seed viability and include additional temperature and time storage treatment options in order to determine ideal conditions for seed germination.

**Presentation Index:** B-B 73 **Present Time:** 9:00 AM

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Malone, Kayla | Arriagada, Jorge | Biological Sciences |

**An Investigation Into the Knowledge and Beliefs of Earthquakes in California and the Rebuilding Process**

Destructive earthquakes in California have been a known occurrence for over a century. With certain building practices put into place we can see a reduction in the amount of damage done to buildings and homes. This is a huge issue for safety of citizens but also economics for the country. One of the major factors holding back the push for safer buildings is the lack of understanding in terms of total destruction from a powerful earthquake. Educating the public on these dangers would be able to get more people into the practice of retrofitting the community. A survey was conducted of a Minnesota 8th grade earth science class regarding the knowledge, beliefs and behaviors on earthquakes. This data can be used in the classroom along with study of earthquakes to get students to think about ways science and technology can apply to everyday life and fix many problems. It can also help students make more intelligently based decisions in their future life.

**Presentation Index:** B-B 74 **Present Time:** 9:00 AM

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Froelich, Jonathan | Simpson, Patricia | Biological Sciences |

**Optimization of Electrochemical Deposition**

Porous aluminum oxide is used as a template when electrochemically depositing ions from solution onto an electrode fixed to the template, thus providing well ordered nanoparticle structures. Uniform nanoparticle structure is crucial for a variety of possible applications. Obtaining nanoparticles of desired shape, size, and properties can be accomplished through controlled synthesis of the template and through optimization of the electrochemical deposition process. Determination of desired nanoparticle properties directs selection of techniques used in optimum electrochemical deposition of ions for proper nanoparticle formation.

**Presentation Index:** B-B 75 **Present Time:** 9:00 AM

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Johnson, Jeffrey; Neu, Jennifer | Neu, Donald | Chemistry |

**A Look at SCSU Athletics**

As a young higher education professional, I have a passion for collegiate athletics. Knowing this, I wanted to explore and learn more about collegiate athletics here at SCSU. This poster will explore the frame work, duties and responsibilities of current staff administration and coaches in St. Cloud State Universities Athletic Department. With that, this poster will explore the uniqueness of SCSU's athletics due to our affiliation of being a Division I and II Institution and how each level differs. The last segment I will exhibit is game day management and how exciting SCSU athletics are for spectators.

**Presentation Index:** B-B 76 **Present Time:** 9:00 AM

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Horn, Rocky | Imbra, Christine | Educational Leadership and Higher Education |

**Hispanic Speakers English Vowel Pronunciation Problems**

The purpose of this project is to compare the acoustic vowel distance between General American English (GAE) and my vowel production of the adjacent set of vowels [i] vs. [ɪ] , [u] vs. [ʊ], [æ] and [ɛ] to determine intelligibility problems between a female Hispanic Speaker and GAE speakers. For the purpose of this study, six words were selected and recorded. Each word was repeated three times, a total of 18 utterances. For this study, acoustic phonetics was the branch of phonetics in which this study was conducted. The measurements taken into account are formants, pitch and duration. The formants that were taken into account were the F1 and F2 since they are the most informative regarding vowel production since it reflect the approximate tongue position (F1=Height, F2=tongue retraction and advancement) as well as the duration. The measurements on the spectrograms showed that my vowel production of these adjacent set of vowels are most likely to cause intelligibility problems to GAE speakers. The findings of this project suggest that more attention to the production of these sounds in order to avoid confusion when speaking to native speakers of English.

**Presentation Index:** B-B 77 **Present Time:** 9:00 AM

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Quesada Montoya, Maria | Koffi, Ettien | English |

**The Value of Amateurs**

My project will focus on the passion and energy of amateurs and why they are necessary to non-profit organizations/businesses. I will be bringing knowledge on amateurs from research articles as well as my Honors Leadership course. My project will also link non-profit organizations to servant leadership. I will also be bringing in my own personal experience with my non-profit Shooting Starz Productions to encourage and motivate others to embrace the passion they have and to take action.

**Presentation Index:** B-B 79 **Present Time:** 9:00 AM

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Bates, Stephanie | Eyo, Bassey | Communication Studies |

**E-Waste in the United States**

In one year's time, how many electronic devices, or appliances have you purchased? According to the Consumer Electronics Association (CEA), Americans now own an average of 24 electronic products per household. Many of these items are discarded or replaced in less than one year. To avoid environmental regulations in the United States much of these waste electronics (e waste) are being transported to other nations. We have to ask ourselves, what does it take to value our own health and still use technology in our society? The poster presentation examines e-waste as a global concern and explores potential solutions

**Presentation Index:** B-B 80 **Present Time:** 9:00 AM

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Wacker, Tina | Lindstrom, Sheila | Sociology and Anthropology |

**How Playing Video Games Affects Attention**

A big topic in recent years has been the study of video games and the affects that they have on people who play them. More specifically, how a person's attention is affected by playing video games. Many researchers have found pros and cons of playing video games. Perhaps one of the biggest findings has been in children with ADHD. Researchers have shown that video games may actually be helping children with ADHD concentrate and learn to focus on other every day activities. I will also be showing other the various positives and negatives that have been found in the recent years.

**Presentation Index:** B-B 82 **Present Time:** 9:00 AM

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Welinski, Michael | Valdes, Leslie | Psychology |

**School Psychology & Attention**

School psychologists work with children by helping them succeed socially, behaviorally, emotionally, and academically. School psychologists help facilitate a successful interaction between health and safety with students environment and community for all students. One of the challenges children have is allocating and maintaining their attention on their school work. My presentation will focus on how a school psychologist assesses attentional skills and the potential interventions to enhance those skills.

**Presentation Index:** B-B 83 **Present Time:** 9:00 AM

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Heck, Tara | Valdes, Leslie | Psychology |

**The Effects of Forest Disturbance on Beetle Diversity and Abundance**

Long term patterns of forest management and disturbance frequently lead to differences in the structure of animal communities. In the summer of 2012 (June-September) I used pitfall traps to census the forest floor beetle community (*Carabidae*) at Kramer Lake/Wildwood County Park in St. Joseph and at Talahi Woods in St. Cloud. The disturbance in Talahi Woods was considered highly disturbed due to the amount of invasive species and other factors. Kraemer Lake/ Wildwood County Park was considered to be mildly disturbed due to the amount of invasive species and other factors. One of the patterns that was found in this study was that some beetle species emerged at different times during the summer. Between the two sites I found that there was more abundance and diversity of beetles in Kraemer Lake/ Wildwood County Park than in Talahi Woods. Given the patterns of abundance and diversity, the census of the beetle community appears to confirm our general assessment of forest quality and disturbance levels.

**Presentation Index:** B-B 84 **Present Time:** 9:00 AM

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Stein, Brandon | Cook, William | Biological Sciences |

**The Impact of Forest Fragmentation on Vegetative and Avian Inhabitants**

Habitat fragmentation leaves behind forest patches that have an increased ratio of "edge" to the total area. This "edge effect" often alters the community from its natural state. Old-growth forests support deep forest birds which rely on the closed canopy for survival, and can be used as indicators of a healthy old-growth avian community. Several putative old-growth forest patches have been identified in Wildwood County Park and St. John's Arboretum & University. The objectives of this study are to attempt to confirm that these are in fact old-growth patches and if so to determine if species richness is higher in old-growth forests surrounded by a larger area of successional buffer that isolates the core from the "edge effect". Determining if the 50 acre old-growth core areas of Wildwood County Park support a healthy population of deep forest birds is another objective. In doing this, I hope to show a possible relationship between the amount of successional forest surrounding the old-growth core and the environments' ability to support old-growth avian populations. Point-count surveys were conducted to document avian community composition between spring and fall of 2012. Results are tentatively based on research that is ongoing; surveys will be completed a second time in 2013. Preliminary results do not support the hypothesis that avian richness is greater when old-growth areas are surrounded by larger amounts of successional forest buffer. According to the Minnesota Department of Natural Resources only 4% of the current forests in Minnesota are old-growth, compared to 51% in pre-settlement times. If we want to prevent old-growth bird species from declining, we will need to conserve patches of forest that have sufficient amounts of buffer between the edge of the woods and the old-growth area.

**Presentation Index:** B-B 85 **Present Time:** 9:00 AM

| **Student Presenter(s):** | **Sponsor(s):** | **Department(s)** |
|---|---|---|
| Zimmerman, Rhonda | Cook, William | Biological Sciences |

**The Impact of Forest Fragmentation on Vegetative and Avian Inhabitants**

Habitat fragmentation leaves behind forest patches that have an increased ratio of "edge" to the total area. This "edge effect" often alters the community from its natural state. Old-growth forests support deep forest plants which rely on the closed canopy for survival, and can be used as indicators of a healthy old-growth vegetative community. Several putative old-growth forest patches have been identified in Wildwood County Park and St. John's Arboretum & University. The objectives of this study are to attempt to confirm that these are in fact old-growth patches, and if so, to determine if species richness is higher in old-growth forests surrounded by a larger area of successional buffer that isolates the core from the "edge effect". I also want to determine if the 50 acre old-growth core areas of Wildwood County Park support a healthy population of deep forest plants. In doing this, I hope to show a possible relationship between the amount of successional forest surrounding the old-growth core and the environments' ability to support deep forest plants. Relevé plot surveys were conducted to document plant community composition between spring and fall of 2012. Results are tentatively based on research that is ongoing; surveys will be completed a second time in 2013. Preliminary results support the hypothesis that species richness is greater when old-growth areas are surrounded by larger amounts of successional forest buffer. According to the Minnesota Department of Natural Resources only 4% of the current forests in Minnesota are old-growth, compared to 51% in pre-settlement times. If we want to prevent deep forest plant species from declining, we will need to conserve patches of forest that have sufficient amounts of buffer between the edge of the forest and the old-growth area.

**Presentation Index:** B-B 86 **Present Time:** 9:00 AM

| **Student Presenter(s):** | **Sponsor(s):** | **Department(s)** |
|---|---|---|
| Poepping, Brittany | Cook, William | Biological Sciences |

**Session C-A** | **Language and Culture** | **Alumni**

### Corpus Consultation of Inflectional Morpheme -s and Evaluation of Arab Learners of English

There are certain aspects of morphosyntax which are difficult to learn for adult L2 learners, such as the acquisition of the inflectional morpheme -s (Clahsen at al., 2010). Most of the studies that have investigated L2 morphosyntactic development have shown that learners may continue to have difficulties to produce bound verbal inflections such as the third person –s even after years of immersion (Lardiere, 1998). Languages vary in morphological complexity. Arabic belongs to the Semitic language family which has a morphological system completely different from English. Arab learners of English have difficulty with acquiring, processing and producing English inflectional morphemes such as the third person –s. In recent years, rapid developments in corpus linguistics and computer technology have begun taking place in the research and teaching of L2 grammar. Concordance data provides the learners with the grammar and vocabulary usages that help them in discovering and generalizing what they found about usage patterns and rules (Liu & Jiang, 2009). This study was conducted in English as a second language (ESL) classes involving 15 Arab learners of English. It investigated whether corpus consultation is beneficial in the judgments of inflectional morpheme -s and the participants' attitudes toward corpus. The results indicated that corpus consultation helped the participants improve their judgments as shown by their post-tests scores which were statistically significant. In addition, participants had positive attitudes toward corpora and its incorporation into L2 writing classes. Finally, corpora can be incorporated into L2 language classes to serve the students needs and provide authentic texts that may help them overcome the grammatical and vocabulary issues provided that they are trained to use corpus data more effectively and efficiently.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Almuqrin, Afrah | Madden, John | English |

### Digital Humanities and Pedagogy in Medieval History and English Studies

The Digital Humanities is, more or less as the name suggests, "an area of research, teaching, and creation concerned with the intersection of computing and the disciplines of the humanities" (http://en.wikipedia.org/wiki/Digital_humanities). A common misconception lingers that few texts were created in the age after the fall of Rome and before the Renaissance, commonly referred to as the Middle Ages, but many documents survive from this period. Many works of literature were conceived and written in the period; history was archived accurately soon after it occurred. Many of these texts still exist, and are still studied, so creating digital versions of them is logical. These digital texts will be catalogued into different types of documents. These catalogues will form annotated lists, which will be easily accessible to faculty and students. This research will be useful to faculty as it will provide examples of medieval text not previously available to students and projects that students can contribute to themselves.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Vos, Evan | Cogdill, Sharon | English |

**The Use and Usefulness of Collocations Dictionaries**

Most second language learners express a desire to sound more native-like. While this may be difficult to achieve phonetically, it is possible to help language learners make more appropriate lexical choices. One such way to do this is through the use of collocations. Collocations can be defined as two or more words that frequently occur together. Collocations are natural choices for native speakers of a language, but must be explicitly taught to second language learners. Recently, a variety of publishers have made specific collocations dictionaries available to language learners. Language programs are quickly adopting these materials, but what do students and teachers think about using them? This study is aimed at finding out more about the attitudes and behaviors surrounding collocations dictionaries and their use. Over eighty university ESL students and ten university ESL teachers were surveyed regarding these issues. One-on-one follow-up interviews were conducted with seven students and three teachers in gain further insight. The findings of this study reveal some interesting trends: even though the collocations dictionary was a required course material, 25% of students reported that they did not own or rent it, about 50% of students report that they "rarely" or "never" bring their collocations dictionary to class, and both teachers and students expressed much interest in using an electronic format (such as an e-Book, online version, or phone application) instead of the paper-based format. Overall, these results indicate that a collocations dictionary should not be implemented into a program without first taking into consideration the needs and preferences of both students and teachers.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Gordon, Rebekah | Madden, John | English |

**The Role of English in Saudi Arabia**

The spread of the English language carries more with it than just a set of grammar rules (and even those are up for debate). Many argue that the cultures and ideologies of the peoples who speak English are inextricably linked to the language themselves. Others believe learners can study a language for their own purposes while resisting any conflicts the language may present to their identities and beliefs. This presentation will explore these issues in the context of Saudi Arabia, offering perspectives of scholars who have investigated the purpose of English in the Kingdom and whether or not it is leading to the Westernization of Arab identities.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Colpaert, Kathrine | Schwartz, Michael | English |

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

**The Acoustic Correlates of Stress-Shifting Suffixes in Native and Nonnative English**

Many linguists have claimed that certain suffixes in English cause a shift in stress in the root morpheme to the syllable directly preceding the suffix (e.g., Celce-Murcia, Brinton, and Goodwin, 1996, Kreidler, 2004). These stress-shifting suffixes are labeled Level 1 [+cyclic] suffixes by generative phonologists (Kisparsky, 1982). However, these stress-shifts have not yet been scrutinized quantitatively using laboratory phonology techniques. Although various studies have been conducted on English lexical stress (ELS) in general, they have not explored the acoustic properties of the full range of Level 1 [cyclic] suffixes in the lexicon. Also, there is a lack of consensus on the relative salience of the following acoustic correlates of stress: Fundamental frequency (F0), duration, and intensity (e.g., Fry, 1955, 1958 vs. Beckman & Edwards, 1994). Furthermore, there is a dearth of cross-linguistic acoustic data on comparisons of the productions of ELS by native English-speakers (NESs) and nonnative-English-speakers (NNESs) of different proficiencies and first language (L1) backgrounds. Thus, syllabic F0, duration, and intensity will be measured in productions of seven Level 1 [+cyclic] tokens by NESs and L1-speakers of Mandarin Chinese and Arabic. Relative syllabic stress ratios will then be calculated. Statistical analyses are expected to provide insights into a possible Acoustic Correlate Saliency Hierarchy and reveal a main-effect of L1-background in their ordering. The researcher hypothesizes that L1-speakers of Arabic – a stress-timed language like English - will produce the acoustic correlates of ELS more similarly to NESs than L1-speakers of Mandarin - a tone language. Finally, the results may indicate a correlation between L2-input/proficiency and a) native-like placement of stress and b) native-like ordering of the acoustic correlates of stress in productions by NNESs. These findings would have significant pedagogical implications for English L2 pronunciation teachers and course-material developers.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Keyworth, Paul | Koffi, Ettien | English |

**Expression and Characterization of Lytic *Staphylococcus Aureus* Phage P68 Holin Proteins in *Escherichia Coli***

Bacteriophages require a host cell to complete the replication phase of their life cycle. To release the new virions into the environment the host cell is often lysed. P68, a bacteriophage of *Staphylococcus aureus* contains genetic codes for a pair of holin proteins responsible for causing membrane disruption generating host cell lysis. The holin gene known as hol15 was codon optimized for expression in *Escherichia. coli*. This optimized gene was then subcloned into the pET-28a(+) inducible vector backbone. The goal of this line of experimentation is to test if expression of a holin from *S. aureus* in *E. coli* will cause lysis. If lysis is induced, the event will be characterized through serial dilution plating and optical density readings. Determination the time and efficiency of this process will help to identify if this has potential use in the production of biomolecules for *S. aureus*, by *E. coli*.

**Presentation Index:** C-C 2 **Present Time:** 9:55 AM

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Kramer, Richard | Kvaal, Christopher | Biological Sciences |

**Tomorrow's College: An Analysis of a Blended Learning Pilot Project for First-Year Composition**

As higher education is being, and has been already, profoundly influenced by technologies, there is a potential for college instructors to utilize digital pedagogies in developing First-Year Composition students into democratic social beings of our socio-political cultures. Literacy practices that teachers and students are developing and deploying, made possible by new technological infrastructures, are changing rapidly as we speak. In order to ensure that both teachers and students maximize the potential of learning through digital platforms, spaces are needed which encourage interactive participation without sacrificing usability. This paper examines how a blended learning environment modifies traditional structures of classroom and the ways blended composition courses capitalize on the ways in which technology encourages students to participate in more meaningful conversations. The evaluation provides valuable feedbacks from the students who have participated in the blended model, which reveal the benefits as well as limitations in this mode of instruction. The author intends to discuss the problems arising from the blended learning model and explore tentative remedies for future educators.

**Presentation Index:** C-C 3 **Present Time:** 10:20 AM

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Tham, Jason | Fox, Catherine | English |

**Session C-GN** **Community and Culture** **Glacier North**

**Leadership Without Borders: Celebrating Diversity and Inclusion of International Student Leaders**

Contributing more than $21 billion to the US economy annually, international students offer academic and cultural benefits to their respective campus communities. Yet, they continue to experience hardship in adapting to their new community and struggle to climb up the leadership ladder due to cultural disadvantages. This paper explores the challenges facing international student leaders in a large, Midwestern university, particularly adjustment issues, cultural barriers, and limited opportunities. Narratives of international and domestic students were collected to account to the issues raised. Coping strategies of international students will be briefly addressed. A discussion will follow to examine leadership training and development opportunities for international students at SCSU.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Tham, Jason | Hyde, R. Bruce | Communication Studies |

**Communicating Common Ground**

Our presentation will be based on a project: "Communicating Common Ground" (CCG). This project was started by Dr. Eddah Mutua-Kombo, professor in the communication studies department. CCG was recognized as one of the three outstanding community engagement collaborations during the celebration of community partners event in 2011. The purpose of Communicating Common Grounds is to integrate the interest of educating youth to embrace the advantages of a diverse society and promoting service learning as an effective method for enhancing students' learning and civic responsibility. Our presentation emphasizes on how service-learning activities allowed students become aware of their necessity to lead for change and promote peaceful co-existence in our community. The idea is to focus on leadership skills among students and to be able to understand conflicts in communication. The activities developed for this project allow students to engage in critical personal reflection and take leadership in transforming their schools, communities, nation and the world into spaces of compassion and peace. Therefore, for our project, we worked with high school students in the St Cloud area. We facilitated discussion sessions with the students and analyze how they respond to conflict resolution styles suggested by cross-cultural theorists. At the end of our program, we hope to provide them with tools to communicate more efficiently and embrace diversity in their community.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Doumbia, Aminata; Abebe, Ayda | Mutua, Eddah | Communication Studies |

**Unintended Consequences of Public Policy**

The effect of the “War on Drugs” and “Sentencing Reform” is a federal republic. The federal government has only the powers granted to it in the Constitution. And the United States has a tradition of individual liberty, vigorous civil society, and limited government. Identification of a problem does not mean that the government should undertake to solve it, and the fact that a problem occurs in more than one state does not mean that it is a proper subject for federal policy. Perhaps no area more clearly demonstrates the bad consequences of not following such rules than does drug prohibition. The long federal experiment in prohibition of marijuana, cocaine, heroin, and other drugs has given us crime and corruption combined with a manifest failure to stop the use of drugs or reduce their availability to children. In the 1920s, Congress experimented with the prohibition of alcohol. On February 20, 1933, a new Congress acknowledged the failure of alcohol prohibition and sent the Twenty-first Amendment to the states. Congress recognized that prohibition had failed to stop drinking and had increased prison populations and violent crime. By the end of 1933, national prohibition was history, though many states continued to outlaw or severely restrict the sale of liquor. Today, Congress confronts a similarly failed prohibition policy.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Smith, John | Zuo, Jiping | Sociology and Anthropology |

**Working Mom vs. Stay-at-home Mom**

Now more so than in previous generations mothers choose to be a working mom or stay-at-home mom. These mothers choose to make a decision on whether they should pursue a career and send their child/children to a form of childcare, or if they should forego their career and keep their child/children at home. This project focused on a series of questions divided by subgroups of childcare, support, personal wellness and childrearing. The results illustrate the differences between stay-at-home mothers and working mothers to show if one set of mothers really is happier than the other and if the decision to be a stay-at-home mother or working mother influences their family and their ability to succeed at motherhood.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Nelson Ramos, Kristy | Zuo, Jiping; Finan, Ann-Marie | Sociology and Anthropology |

**Session C-GS** **Computer Forensics I** **Glacier South**

**Analysis of Used Hard Drives Using Computer Forensics Tool**

This project intends to analyze the pre-used hard drive as a part of final project of the subject IA 681-Digital Forensics and Ethics. Three solid state hard drives would be analyzed which would be obtained from three different sources namely eBay, Amazon and Craigslist. There is a saying in digital forensics "deleted, but not gone", this is what we are trying to find by this project. Although nonprofessionals would think all the data would be gone by normally deleting or formatting the drive, it would still not be forensically clean meaning there would be data left. The image of drives would be created and analyzed using forensics tool like FTK. Try to find various kinds of data including personal information, credit card information or other sensitive materials in the drive is our prime target of the project. This project intends to aware people who still sell their personal hard drive without forensically wiping it or physically damaging the platter is the better way of keeping information secret.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Tripathi, Dipendra; Paudel, Badri | Schmidt, Mark | Information Systems |

**Digital Tracing: Revolutionary Methods for Crime Scene Investigation**

The role of Digital Forensic team that helps to prove a suspect guilty through the evidences found on the suspect's computer. A mentally challenged man gets inspired by psycho thriller movies and turns out to be a psychopath, killing people. The police traces down the suspect based on an object found in the crime scene. The Forensic team with a legal search warrant examines the suspect's computer and finds evidence that leads to the reason behind the killing of innocent people. The information found on the computer played an important role in solving the mystery of the case and has proceed with the prosecution of the proven guilt.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Chilukuri, Koushik; Muddu, Sai Mohit | Schmidt, Mark | Information Systems |

**Mobile Forensics Analysis**

With the increasing prevalence of mobile devices such as PDAs, and cell phones, mobile forensics is becoming a rapidly evolving field of studies for corporations such as the military, high-tech firms, and even criminals. Over the past few years, investigators with the knowledge of mobile forensics have been able to either defend or proved their cases on behalf of their clients effectively using modern digital forensics. For this reason, my partner and I have decided to examine this discipline with the help of our sponsor, Dr. Schmidt. We will forensically demonstrate to our audience the process and procedures investigators and law officials go through when trying to find evidence on mobile devices to defend their cases. My partner and I will acquire some unused mobile phones that completely have no data on them (totally wiped-off of all data). With the help of some open source software we are evaluating, we will demonstrate to the audience that even though owners of these devices (unused mobile phones) claim to have deleted all data including contact names and numbers, text messages, pictures, videos, etc., we will be able to retrieve almost all their information. Most of the equipment we will use in our demonstration will be provided by our sponsor.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Adhikari, Subash; Ofori-Amoah, Evans | Schmidt, Mark | Information Systems |

**Computer Crime Analysis Using Digital Forensics**

Computer forensics plays a major role in the digital world. As a research project for the digital forensics and ethics course, we created a fake crime incident to demonstrate how to solve a computer crime. In this research, we tried to identify the methods criminals use to cover their traces, how to find hidden evidence using computer forensics techniques and how to identify criminals by rebuilding the incident using the evidence discovered using computer forensics techniques. We used steganography, data mixing and data hiding in multiple sources to cover up the evidence and stage the incident.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Abeykoon, Kasun; Abeykoon, Thusith | Schmidt, Mark | Information Systems |

**Session C-VN** **Statistics I** **Voyageurs North**

**Judicial System Funnel**

Our research is focused on determining how inmates move through the Judicial System from the years 2005 to 2011. The date that the inmates were arrested, were sentenced, and the date that the case was closed are examples of information that was used in the research. The information was obtained from the Stearns County Jail, the County Attorney Office, and the St. Cloud Police Department. With the information, the average number of days it took inmates to move from one event to the next was determined. This information was put together to form a "funnel" of inmates transitioning through the judicial system. Seven funnels were created for different charge levels and charge types: Felonies, Misdemeanors, Gross Misdemeanors, Person, Weapon, Drug, and Property crimes. Microsoft Excel was mainly utilized in the data analysis to calculate the average days and number of inmates for each event. The results will benefit the Stearns County Management on the median time an inmate takes to go through the system depending on the type of crime that was committed. Furthermore, the research could help inform the public on the judicial system's process.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Chase, Taryn; Duong, Quyen; Thomas, Jumoke; Lu, Shan | Robinson, David; Xu, Hui | Statistics |

**Predicting Successful Clients for Stearns County Community Corrections**

The Stearns County Department of Community Corrections involves the supervisions of certain offenders as they undergo certain probation programs. The outcome of a given client can fall into one of two categories: successful or unsuccessful. A question of interest is what factors are related to successful cases and what factors contribute to an unsatisfactory outcome. Using analytics, a binary logistic model can be applied to past data in order to assess the likelihood of a given client receiving a satisfactory outcome. Analyzing significant factors of the model can provide insight as to what types of client have a higher/lower probability of success. Predicting a potential client's likelihood of successfully completing a probation program can be useful in efficiently allocating limited resources to the most suitable clients. Also, the model can assess the likelihood of existing client successfully completing probation, and Community Corrections can apply their resources accordingly. Another tool which can be derived from the model is an assessment tool for probation agents. The model will attribute to every client a probability of success, and the probabilities of all the clients under a certain agent's supervision can be used to determine how many cases that agent should have closed. If an agent's observed success rate falls above/below the predicted success rate, it may be an indicator the agent is performing above/below expectation. All analysis of the study addresses the primary issue: how can Community Corrections better use time and money to do more good for the community.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Bloch, Daniel; Brunette, Kirsten | Robinson, David; Xu, Hui | Statistics |

**Predicting Duration of Stay in Jail**

In 1980 Minnesota went from using an indeterminate sentencing model to a determinate sentencing model. There are a few reasons on why they did this; one of them was to help control for age, race, gender, and other variables in sentencing jail and prison incarcerations. Another reason was to have sentences be determined by criminal history and severity of the crime. There is plenty of research on how the prison sentence is affected by these variables, but very little to support the way in which the variables affect the length of stay for jail inmates. This research is to predict how long an individual will remain in and how many people are in the Stearns County jail based upon several variables, some of which include race, gender, and age. The variables chosen have been found to have an effect on length of stay from previous studies. The data used in the study is from 2006-2012 provided by Stearns County jail. Linear regression, logistic regression, survival analysis and decision tree will be used to analyze the data. The data used for the jail population is the average weekly population for the years 2006-2012. Time series methods such as Box-Jenkins and Locally Weighted Scatterplot Smoothing will be used in the analysis. Findings will help show if the State of Minnesota has controlled for significant variables and to help Stearns County in building a new jail.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Li, Zhengyi; Bauer, Lauren; Kang, Hyemi | Robinson, David; Xu, Hui | Statistics |

**Analysis of Recidivism Among Stearns County Corrections Clients**

Stearns County Department of Community Corrections is responsible for the supervision of offenders that are judged to serve some time on probation. One of their main missions is to reduce recidivism. Recidivism is any criminal acts that result in the re-arrest, re-conviction, or return to prison with or without a new sentence during a three-year period following the prisoner's release. There were two ways this problem was tackled. First, 300 cases from all the cases that were closed in 2007 were randomly chosen and were checked whether they recidivated or not. The second method was that all the clients that had multiple offenses amongst all cases closed in 2007 were checked and their sentence dates were looked at. A different sentence date could mean recidivism. Both groups were analyzed and crosschecked to identify what groups of people are more likely to succeed in supervision. This will identify those groups of offender that need more resources or rehabilitation and will limit the harm they could cause to the community following their release.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Idifle, Abdikadir; Willis, Ashley | Robinson, David; Xu, Hui | Statistics |

**Session C-VS** | **Science and Engineering II** | **Voyageurs South**

**Anatomical, Behavioral, and Molecular Responses of Minnows Exposed to Pharmaceuticals Using Field and Laboratory Approaches**

Numerous studies have documented the presence of pharmaceuticals in aquatic ecosystems. Among contaminants of emerging concern, the diversity and inherent biological activity of pharmaceuticals have the potential to adversely affect aquatic species through several pathways. To assess the biological potency and effects of several classes of pharmaceuticals, we conducted field and laboratory experiments using adult and larval fathead minnows. In the first experiment, environmental concentrations of several pharmaceutical classes including sleep aids, muscle relaxants, antidepressants, opioids, opiate agonists and a complex mixture were established for laboratory exposures. In the second experiment, fish were exposed to environmental effluent on site (adults) and laboratory static renewal exposures using serial diluted grab samples (larvae). For both studies, we examined anatomical (organosomatic indices, histopathology, reproduction), behavioral (adult nest defense aggression, larval escape performance), molecular (vitellogenin induction), and immunological endpoints (spleen and kidney flow cytometry) following 21-day exposure. No significant differences in escape performance or growth were found between larval treatments exposed to laboratory prepared exposures or field samples. Laboratory exposure revealed significant differences in hepatosomatic indices (HSI) for both sexes, with a more prominent effect on female fathead minnows. Control females exhibited lower HSI compared to the opiate agonist, antidepressant, muscle relaxant, and pharmaceutical mixture. Female fish exposed to the pharmaceutical mixture had higher HSI than the sleep aid and opiate agonist treatments. Male mixture fish HSI were significantly higher than those exposed to the muscle relaxant. Male field exposures using on site mini-mobile units had significant declines in body condition factor, HSI, and secondary sex characteristics relative to baseline fish. Male aggression was significantly higher for the sleep aid and control relative to other treatments. Vitellogenin induction was significantly higher in field-exposed fish. The study merits the importance of endpoint selection spanning multiple levels of biological organization and development when assessing contaminant interactions.

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

| **Student Presenter(s):** | **Sponsor(s):** | **Department(s)** |
|---|---|---|
| Rearick, Daniel | Schoenfuss, Heiko | Biological Sciences |

**Effluent-Impacted Systems: Effects on Wildlife Diversity, Behavior and Morphology**

The effects of treated wastewater on aquatic ecosystems have been documented in detail, but the ability of these systems to recover if wastewater input ceases is poorly understood. The goal of this study was to determine the effects a wastewater treatment plant (WWTP) effluent has on an aquatic ecosystem, and monitor those parameters after the WWTP is shut down and the wastewater diverted elsewhere. The system studied was Fourmile Creek, located in central Iowa near the town of Ankeny. Two reference sites were chosen above the effluent outfall, and three below the outfall. Water quality was better above the outfall, and sharply decreased below the outfall. However, further downstream from the outfall, conditions gradually improved. Macroinvertebrate diversity was greater above the outfall, while sites below the outfall showed decreased diversity, with gradual increase further downstream. Behavioral effects on larval fathead minnows (*Pimephales promelas*) and water boatmen (Family: *Corixidae*) were also studied. When larval fathead minnows were exposed to effluent concentrations of 0%, 25%, 50%, 75%, and 100% for 21 days in a 50% daily static renewal system, no significant difference in growth or predator avoidance performance was detected. In contrast, when water boatmen were exposed to the same concentrations of effluent over a 4-day period, a significant difference was detected in the number of resurfacing events. Boatmen appeared to resurface less when exposed to 0% effluent (well-water), and resurfaced more when exposed to any effluent concentration, suggesting an "all-or-nothing" effect of effluent exposure. In addition to invertebrate and larval fish assays, we also investigated the effects of effluent discharge on resident fish populations and caged fathead minnows. All fish were analyzed for plasma vitellogenin concentrations, organosomatic indices and histopathological changes.

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

| **Student Presenter(s):** | **Sponsor(s):** | **Department(s)** |
|---|---|---|
| Minor, Maxwell | Schoenfuss, Heiko | Biological Sciences |

**Demineralization System Piping Evaluation**

Upon request by Xcel Energy a vibration analysis was performed on the degasifier system at the Sherco Coal plant. The system is used to purify feedwater so that it can be used in the sensitive downstream equipment, however since the system was initially installed it has vibrated dangerously whenever ran at full speed. The analysis was performed to determine the exact source of these vibrations. The analysis included structural vibration, pump, and cavitation evaluations performed in parallel to determine the source of the vibrations as well as rule out any previously hypothesized sources that were not generating the vibrations. The source of vibrations is cavitation occurring in the piping immediately following the degasifier in which there is a significant pressure drop related to the nozzle of the piping as well as the high speed of the water.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Meemaduma, Dayan; Murphy, Joseph; Campion, Ryan | Zhao, Yongli | Mechanical and Manufacturing Engineering |

**The Ubiquitin-Mediated Regulation of the Proto-Oncogene Myc by DNA Damage**

The study of the regulation of proto-oncogenes is an important step toward understanding cancer processes. Cancer is abnormal cell proliferation without regulation. Myc, a proto-oncogene involved in normal cell proliferation is implicated in many cancers when unregulated. Myc can be regulated post-translationally through an ubiquitin dependent proteasome degradation process. The E3 ubiquitin ligase Cdc4α (Division Control Protein 4 alpha) works in conjunction with an E2 ubiquitin conjugating enzyme to add ubiquitin to Myc through a CPD (cdc4 phosphodegron) with great specificity, leading to its proteasomal destruction. Mutations at the CPD site in Myc are implicated in cancers indicating that Cdc4α acts as a tumor suppressor by keeping Myc levels low. The rapid turnover of ubiquitylated Myc is antagonized by an interaction between Cdc4α and USP28 (Ubiquitin Specific Peptidase 28) a deubiquitinating enzyme (DUB) that removes ubiquitin so the protein is not targeted and destroyed by the proteasome. Mutated DUBs are often implicated with cancer suggesting a role in tumorigenesis. Previous research has shown that USP28 disassociates from Cdc4α when DNA damage is induced by UV light, allowing Cdc4α to polyubiquitylate Myc leading to degradation. When this damage occurs, USP28 can no longer engage and act as a DUB, allowing the lengthening of the ubiquitin chain leading to degradation of Myc by the proteasome. Mutations at the site of the Cdc4α-Usp28 interaction that don't allow disassociation of USP28 could lead to preservation of Myc and possibly lead to cancer. Our lab is interested in determining the mechanism by which this disassociation occurs. We have previously discovered that Cdc4α is phosphorylated at two sites; serine 26 and serine 72 after cells are exposed to UV light. Here we investigate whether this phosphorylation is the mechanism for the dissociation of USP28. This mechanism could represent a potential novel pharmacological target for cancer therapies.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Rolstad, Nancy | Olson, Brian | Biological Sciences |

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

**Application of DOE in Metal Coating Process Improvement at RIE Coatings**

RIE Coatings was experiencing average 8% fallout in the recess area coating quality of parts. Coating in the recess area peeled off, cracked and resulted in customer complaints. The objective of this project was to reduce the coating defect at the recess area of different parts and thereby set up an experimentation process which will bring down the defect rate from 8% to 4% of the batch. Different factors responsible for the recess coating quality were identified. Factors such as load and spin time were tested at different levels. Two way analysis of variance (ANOVA) was used to find out the effect of both the factors. It was found that 100lbs load and spin time of 20 seconds is giving out 2% defects which were acceptable. This project was very critical to RIE because the existing defect rate was endangering customer satisfaction. This was also the first attempt by the organization to carry out such experiments for process improvement. Adding more to this, as per current industrial standards the recess fill fall-out is 10-15%, which is way higher than what RIE is aiming. This will give RIE an opportunity to dominate the market in the future.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Mohite, Mayur | Sundheim, Nancy; Shah, Hiral; Engelbrekt, Brent; Haglund, Mike | Mechanical and Manufacturing Engineering, Statistics |

**(Central) Auditory Processing in Young Adults on the Autism Spectrum**

Many studies have shown differences in the way individuals with autism spectrum disorders (ASD) process auditory information when compared to typically developing peers. These studies contribute to general understanding of auditory skills and ASD, but do not give information across all six skills associated with (central) auditory processing [(C)AP] (i.e., localization/lateralization, discrimination, pattern recognition, temporal aspects, performance with competing signals, and performance with degraded signals). The purpose of the current study was to determine 1) patterns of responding among a group of individuals with ASD for subtests that address the (C)AP skill areas and 2) the association between a group of individuals with ASD and a group of typically developing peers on subtests that examine the different (C)AP skill areas and a composite (C)AP score. To achieve this purpose, seven participants with ASD and seven gender-matched control participants were recruited between ages 18 and 21 years. All participants completed a case history, passed a hearing screening, and participated in assessments measuring (C)AP skills: the SCAN-3:A Tests for Auditory Processing Disorders (SCAN-3:A) and the Differential Screening Test for Processing Measures. A multivariate analysis of variance (MANOVA) was used to assess between group differences. Descriptively, patterns of responding were identified for the ASD group, with lower scores in subtests that required dichotic listening. Heterogeneity in responding was also evident. Statistical analysis revealed significant between-group differences for only one subtest, SCAN-3:A Competing Words-Free Recall. No significant results were identified for the other (C)AP skill area subtests or for the composite score. These results extend past research and support findings that suggest differences in the way individuals with ASD process auditory information compared to typically developing peers. Results warrant further research with a larger sample size, as well as research that addresses the clinical utility of (C)AP testing for individuals with ASD.

**Presentation Index:** D-C 2 **Present Time:** 11:25 AM

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Carpenter, Mary | Estrem, Theresa; Nelson Crowell, Rebecca | Communication Sciences and Disorders |

**We're All In This Together. RT @BarackObama: Social Media Use and College Students' Civic Engagement During the 2012 Presidential Election.**

The internet and social media became one of the hottest topics in political campaigns about a decade ago. Political consultants and presidential candidates have touted the promise of the web to change the mode of their campaign strategies. At the same time, the sudden hype of Web 2.0 over the past few years has led social media to becoming the new hot medium among college students in the United States. Hence, there is a potential for this new platform to be used by presidential candidates for effective communications and publicity toward the college student population during election seasons. To uncover this potential, this study examined the usage rate of social media among college students of a large, Midwestern university, and their civic engagement level via a survey administered to 500 students. Results showed that female students engaged in social media usage significantly more than their male counterparts. Results also revealed that participants' participation in political activities offline depended on the frequency of social media use. Furthermore, participants who were very likely to seek out information about the election engaged in significantly more participation offline than participants who were less likely to do so. Students who voted in the 2012 Presidential Election participated in more offline political activities than participants who did not vote. The implications of the correlations between social media use and college student voting behavior and civic engagement are discussed.

**Presentation Index:** D-C 3 **Present Time:** 11:50 AM

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Tham, Jason | Peng, Zengjun; Akhavan, Roya | Mass Communications |

**Session D-GN** **System Design** **Glacier North**

**Improvement in Facilities Layout of a Restaurant**

The purpose of this project was to improve the current facilities layout of a restaurant located in Twin Cities. This restaurant was facing problems related to space utilization like accommodating customers, lack of sufficient space in the waiting area and high power usage. In general, the most important attributes needed to operate a restaurant successfully are efficient facility layout and customer satisfaction. With the help of lean techniques, the project team improved the current facilities layout by increasing the space utilization and reducing congestion by extending the seating arrangements to accommodate more customers. The project also resulted in providing sufficient space to the waiter for serving and reducing the customers waiting in the lounge area by providing them a beeper. Detailed results will be discussed in the presentation.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Gourisetty, Ramya; Kanne, Sunandha; Vallabhaneni, Santhosh Kumar; Chapala, Naveenbabu | Shah, Hiral | Mechanical and Manufacturing Engineering |

**Three Generations of Flight Experience**

We will compare and contrast the flight experiences of two early minority aviators and a current aviator with our own personal flying experience. The discrimination and prejudice the early aviators faced based on their race and/or gender is both different and yet similar to the issues some aviators face today. We can clearly define those issues from the biographies we have read on early aviators as well as the interview we conducted with our current industry contact. We will compare and contrast the three generations of flight experience from the perspectives of navigational technology, aerial technology, the challenges of the different eras in society and aviation, as well as the different education available to three generations of aviators. We plan to present our findings as a demonstration of what we have learned in class and as a description of how aviation and society have progressed. Besides the experience we ourselves will have gained, the benefits of this project will reach our intended audience as an informational presentation about the aviation industry and hopefully will inspire others to pursue a career in aviation.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Hartzell, Kaitlyn; Olmscheid, Emily | Olson, Angela | Aviation |

**Optimization of Maintenance Repair and Operating Supplies (MRO) Process at an Appliance Manufacturing Company**

MRO refers to maintenance, repair and operating supplies, which facilitate the production process, but are not part of the final product itself. There was no mechanism at ABC company to forecast the reorder volumes of the MRO inventory and there are gaps in the organization of the end-to-end process for order placement and utilization of this stock, causing unnecessary delays. The scope of the project comprised of calculating reorder times and volumes for MRO inventory and optimize the MRO ordering and utilization process to minimize delays. The methodology to achieve these objectives involved conducting a comprehensive time-study for each step of the existing process, proposing an alternative optimized process flow and comparing performance of the new process with the existing process, based on historical data collected earlier. The results of the project will be discussed in the presentation.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Khan, Maham; Pavuluri, Snigdha; Katagowni, Goutham Raj | Shah, Hiral | Mechanical and Manufacturing Engineering |

**Chinese Style Privatization and its Impact on GDP Growth**

"Since 1978, China has experienced a profound process of privatization. Due to the political environment, privatization in China is somewhat unique. This Chinese style privatization mostly happens in two areas: the reform of state-owned enterprises (SOEs) and the development of the private sector. Previous studies have shown the positive effect of the privatization on firm performance and social welfare, which could be expected to positively affect the economic development of the country too. Using time series data, this paper explores the relationship to economic growth by analyzing the impact of privatization on China's GDP growth rate."

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Yin, Mengmei | MacDonald, Lynn | Economics |

**Session D-GS** **Diversity and Media** **Glacier South**

**Diversity in Media: On-Air Minorities in Twin Cities Television News**

The Diversity in Media Project incorporates several student projects under one theme of Diversity in Media. This project deals with the lack of diversity of on air talent in Twin Cities news stations. The current make-up of the Twin Cities news stations on air talent does not reflect the diversity numbers seen within the Twin Cities.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Becker, Christopher | Heinrich, Lisa | Mass Communications |

**Diversity in Media: Perceptions & Attitudes Towards Muslim Americans**

The Diversity in Media Project incorporates several student projects under one theme of Diversity in Media. This topic studied the perception and attitudes towards Muslim Americans based on analysis of two TV shows created and televised in North America. Based on analysis of the TV shows, I theorized that folks from Canada had a more tolerant and accepting disposition towards Muslim American culture than folks from the United States.

**Presentation Index:** D-GS 2 **Present Time:** 11:15 AM

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Udofia, David | Heinrich, Lisa | Mass Communications |

**Diversity in Media: Latinos and Immigration**

The Diversity in Media Project incorporates several student projects under one theme of Diversity in Media. My project is about Hispanics access to media in Spanish and its shortcomings and influences on their access to real first hand news rather than relying on individuals within their communities who are bilingual telling them what is going on. I also looked at some of the implications associated with a large sector of the community within MN being less informed or uninformed on important issues especially to their community.

**Presentation Index:** D-GS 3 **Present Time:** 11:30 AM

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Schroden, Melissa | Heinrich, Lisa | Mass Communications |

**Diversity in Media: Halloween Costume Advertising**

The Diversity in Media Project incorporates several student projects under one theme of Diversity in Media. This project discusses the lack of diversity in Halloween advertising to children and connects it to studies on how children perceive reality based on the media they consume. I conducted a mini-study where I compared the representation of ethnic groups in print and web advertising from several retail stores.

**Presentation Index:** D-GS 4 **Present Time:** 11:45 AM

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Christianson, Marjorielee | Heinrich, Lisa | Mass Communications |

**Diversity in Media: Color Me Bad-African Americans in Fitness Advertising**

The Diversity in Media Project incorporates several student projects under one theme of Diversity in Media. "Color Me Bad" is a critical analysis of African American males in popular fitness magazines and the roles they play therein. A series of stereotypes and disturbing media trends are identified, analyzed, and discussed at length. Social implications and ethical implications concerning the media are also presented.

**Presentation Index:** D-GS 5 **Present Time:** 12:00 PM

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Spoden, Derek | Heinrich, Lisa | Mass Communications |

**Session D-LT** **Creative Performances** **Little Theatre**

**Gayly Celebrating Minnesota: A Musical Program**

Minnesota made the history books by being the first state to vote down a constitutional amendment banning same-sex marriage. On November 6th, 2012, the GLBT community and their alliance celebrated as the election results came in. With the song lyrics: Minnesota Style by Luke Thomson, Minnesota Song by The White Iron Band, Hail Minnesota by Richard Truman, All You Need is Love by The Beatles, Celebration by Cool and the Gang, Call Me Maybe by Carly Ray Jetson, I Kissed a Boy by Cobra Starship, You Made Me Gay by Gravy Train, The Big Gay Musical, Prop 8: The Musical, La Vie Boehm from Rent, If You Were Gay from Avenue Q, and Everybody Loves A Show Tune by The Math and Physics Club. A musical program, gayly celebrating Minnesota.

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

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

**Twese Hamwe (All of us)**

This performance highlights trials and triumphs of the human spirit in Rwanda and Burundi. It brings to the public personal experiences of genocide and pursuit of peace in a dance that invites all of us to imagine peace and harmony in our communities and the world at large.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Ndayiziga, Mika; Mumukunde, Inga; Byiringiro, Janvier; Munezero, Darlene; Gahungu, Guy Armel; Nsengiyumva, Sybille; Sengwiza, Loris | Mutua, Eddah | Communication Studies |

**Session D-VN** **Social and Behavioral Studies I** **Voyageurs North**

**Promoting Leadership for Women in Higher Education**

Even though there has been a plethora of research about leadership and successful leaders, and different theories have been developed about these topics, women have not been the central focus of the research (Sanchez-Hucles and Davis, 2010). Considering the current data, women are underrepresented at the senior level leadership positions, but overrepresented in the bottom. The same picture is perceived, not only in the business world, but also in the higher education institutions where women comprise the majority of the entry and sometimes mid-level administrative and leadership positions, but the minority of the senior positions. Hence, it is important to explore what factors impact such underrepresentation for women in leadership positions in general and in higher education institutions particularly. This study focused in exploring the perceived barriers women face through the pipeline at two institutions of post-secondary education. Analysis of the data gathered from a questionnaire sent out provided insight about the barriers women perceived or had experienced through the pipeline, and strategies they considered relevant for their progress through the pipeline. Based on the findings, the researcher shared recommendations for both institutions and for future research.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Cenolli, Eglantina | Mills, Michael | Educational Leadership and Higher Education |

**Using Social Media to Promote Small Organizations**

Within the past decade, social media have made a significant shift in the ways that much of the world consumes information, communicates, and advertises. Sites such as Facebook, Twitter, Linked In, Paper.li, and various blogging outlets have created a popular new medium in which anyone can become an authority figure. The opportunities that social media provide to small organizations pertain to communicating with and advertising to their potential customers or clients while spending the least amount of money. It is very inexpensive, it creates a two-way communication channel between customers and the organization, it is popular and familiar to use, it is easy and time efficient, it disseminates news instantaneously, and it can be used in promoting and networking with similar organizations. Many companies have begun to value social media over traditional types of media to market themselves purely because of the reasons; it is even considered essential to a fair amount in expanding. However, many organizations are making poor use of their social media by neglecting it, which produces little to no new information and does not use potential communication possibilities. The elderly population, in particular, is very difficult to reach because of it seldom makes use of the media, but emerging technologies disseminate the information in a more accessible format. Proper use may very well become an invaluable tool to any small organizations wanting to succeed and expand in a fast-paced and quickly changing world.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Koethe, Matthew | Cogdill, Sharon | English |

**Afro-American Apathy Around Issues of Voting Rights**

Why does it seems that Afro-American, in this area (St. Cloud, MN) seem not to care about the Voter ID Amendment on the ballot in the 2012 election and politics in general; notwithstanding the re-election of the 44th President of the United States. In order to change things we have to get out of ourselves and do the work. What we propose to do is to try and find out if the theory is true or not, then if so, what can we do to change this? Is this something that needs to be addressed on larger scale, or does "isolation theory" play a role in rural America and the Afro-American vote.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Stanton, Dexter | Zuo, Jiping; Finan, Ann-Marie | Sociology and Anthropology |

**Play Call And Noise: Ignoring The Roar Of The Crowd**

Football players often have to listen selectively to the call of a play while ignoring crowd noise. This study investigated whether amount of noise interfered with a receiver's ability to accurately run a pass route. The participants were men who are over the age of 18. Half of the participants are athletes that have played football after high school and the other half had not played organized football for at least six years. The study will be conducted in a closed dome on turf. Participants will wear earphones that will play different levels of noise. Participants will memorize a novel call consisting of a set of numbers and letters that indicates where the participant is to run to catch the ball. A quarterback who will be unaware of the noise level will shout out a call at different speeds and throw the ball to designated location. The accuracy of the route run and reaction time of the participants to the start of the play will be measured. Results and attentional abilities of football players will be discussed.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Zelinski, Tyler | Valdes, Leslie | Psychology |

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

**Effects of Multigenerational Exposure of Fathead Minnows to 17β-Estradiol Alters Predator Performance and Survival**

Endocrine-disrupting compounds have been shown to have cumulating effects on aquatic vertebrate reproduction through exposure in subsequent generation, however little is known about resulting consequences to population dynamics. We assessed predator escape performance and survival during active predation in fathead minnow (*Pimephales promelas*) larvae exposed to an ecologically relevant concentration (20ng/L) of 17β-Estradiol (E2) over two generations. After each generation's larval 21-d exposure, escape performance was measured by recording the fast start response to an artificial stimulus using high-speed cinematography. Effects of exposure on larval survival were tested through the addition of a predator to a small pool containing both exposed and control larvae. A subset of larvae was reared to adulthood to assess larval exposure effects in later reproduction fitness. The number of fertilized eggs and larvae produced was significantly lower inE2 exposed minnows compared to control minnows. Larvae exposed in the F2 generation had lower survival rates than control minnows, independent of F1 parent exposure. E2 exposed F2 generation larvae spawned from the F1 parents exposed to E2 displayed the lowest survival rates during active predation. Similar survival rates in unexposed F2 generation, independent of any parental exposure to E2 suggests a high recovery potential for E2 exposed larvae in subsequent generations. Our results indicate that exposure to E2 has compounding effects on survival through consecutive generations and emphasize the importance of evaluating the impact of estogenic chemicals on larval survival and ultimately recruitment to the breeding population through multiple generations. Funding for this project was provided by the Minnesota Environment and Natural Resources Trust Fund as recommended by the Legislative-Citizen Commission on Minnesota Resources (LCCMR).

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Heikkila, William | Schoenfuss, Heiko | Biological Sciences |

**Cloning, Induction, And *In Silico* Analysis Of A Putative Cyclin Of *T. Gondii* In *E. Coli***

*Toxoplasma gondii* is a member of the *Apicomplexa* phylum of obligate intercellular parasites. It is a parasite that is ubiquitous throughout the human population. It has been estimated through seropervalance that one third of the entire human population has been exposed to this parasite. It is responsible for the condition known as toxoplasmosis. *T. gondii* undergoes a unique form of cell division known as endodyogeny. The proteins involved in the process of endodyogeny are poorly understood thus far. In order to better understand the molecular mechanisms of endodyogeny a putative cyclin TgCyc2 was cloned into an expression vector. Using an arabinose operon system in BL21-AI cells an attempt was made to overexpress TgCyc2. A variety of methods including cold induction, universal translation, and GST-fusion tags, were utilized in an attempt to induce this *T. gondii* protein in an *E. coli* strain. Future research might be able to purify the TgCyc2 protein that can be analyzed in vitro with other proposed cell cycle regulatory proteins to detect cyclin activity. A Bioinformatic approach was employed to characterize TgCyc2 *in silico*. Understanding the proteins involved in the control of endodyogeny could lead to the development of drug treatments specific to this parasite.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Noyes, Joseph | Kvaal, Christopher | Biological Sciences |

**Analyzing and Improving Current Layout of Grocery Stores Using 5S Tools**

The purpose of this project was to analyze and improve the current layout of a grocery store, with the help of 5S , a lean technique. At this grocery store, customers were facing some problems locating items. There was no signage in the aisles and the products did not have a nametag. The customers often had to ask store manager or employees for the product, thereby resulting in non-value added time. The project team will be identifying and eliminating all unnecessary boxes, material and waste to create space, rearrange the aisles and label the entire aisle with item tags. Training will be provided to the employees in the store to sustain the changes. The outcome of the project will be measured by a customer feedback form wherein the customers will be comparing the new versus old layout and the time savings. The results of the study will be discussed at the presentation.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Srivastava, Shipra; Ramdin, Priyanka; Choksi, Rujuta; Mogal, Priyanka | Shah, Hiral | Mechanical and Manufacturing Engineering |

**Inventory Management at a Grocery Store**

The project was conducted at a grocery store, which is located in the Twin Cities. The scope of the project was to provide an improved vision about ordering and rotation of stock using ABC analysis. The objective of this project was to provide a permanent solution to the stocking problems arising in a grocery store. The Problem was with dealing a huge stock lying in warehouse. Old stock was expiring within warehouse without even being displayed. There were also items on the display that were already expired which was a big threat to the store. Main problems the management was facing were identifying shortages ahead of time, bottlenecks and weak points, inventory with less life in stock, rotation of items on shelves, Excessive inventory in stock and unable to move it quickly enough and not keeping up with the rising price of raw materials. ABC analysis was the technique of dividing the items into these categories. According to ABC analysis, 20% of the A category items accounts for 70% of the annual consumption value of the items, 30% of the B category items accounts for 25% of the annual consumption value of the items and 50% of the C category items accounts for 5% of the annual consumption value of the items.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Tellapally, Anusha; Vanga, Shruthi; Kodali, Prudhvi Krishna; Reddy, Seshagiri | Shah, Hiral | Mechanical and Manufacturing Engineering |

**Session E-C** | **Paper Competition III** | **Cascade**

**Environmental Contaminants and Disease**

Type 1 Diabetes (T1D) is an autoimmune disease characterized by the destruction of the insulin producing beta-cells of the pancreas. Alarmingly, there is a 3% increase in the incidence of T1D worldwide, however the reason is yet unknown. Autoimmune diseases, such as T1D, are known to have both genetic and environmental factors associated with the induction of disease. Much is known about the role of genetics in this particular disease, even so that a genetically susceptible mouse model has been developed, the non-obese diabetic (NOD) mouse. These mice spontaneously develop T1D through mechanisms similar to human diabetes, particularly the T cell dependent destruction of the beta-cells. Converesely to genetics, the role of different enviromental contaminants in induction of T1D is unclear. One group of contaminants, persistent organic pollutants (POPs), has recently been hypothesized to contribute to the development of T1D. Here we ask whether a specific POP, *p,p'-Dichlorodiphenyldichloroethylene* (DDE), contributes to the induction of T1D. To answer this question we will treat mice (both NOD and control C57Bl/6) short- (1 and 100 mg/kg every other day for 10 days) and long- (25 and 50 mg/kg biweekly for 20 weeks) term with DDE and vehicle. We will determine the incidence of T1D in NOD mice, functionality of their T cells, as well as specific immune cell subsets induced in them by exposure to DDE. This study is an invaluable resource for future scientists, as well as the general public, and will help to elucidate a possible explanation for the increase in incidence of T1D worldwide.

**Presentation Index:** E-C 1 **Present Time:** 12:50 PM

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

**Regulation of PGC-1beta: A Protein Implicated in Neurodegenerative Disorders**

Neurodegenerative disorders are the adverse consequence pertaining to the gradual loss of function and death of explicit collections of neurons, illustrated by Alzheimer's disease, Huntington's disease, and Parkinson's disease. PGC-1 is a family of proteins that function in activating the transcription of genes involved in mammalian metabolism and is comprised of three members: PGC-1α, PGC-1β, and PRC-1. Studies have suggested that reduced PGC-1 levels may, in part, play a role in the aforementioned neuronal death. Furthermore, PGC-1 has thus been shown to function in a protective manner by activating the transcription of antioxidant proteins that protect neurons from free radicals. Determining how PGC-1 is regulated could lead to the development of novel pharmacological agents capable of manipulating that regulation in order to restore PGC-1 activity to normal levels in individuals with these diseases. Therefore, our research objective involves investigating how the PGC-1 family is normally regulated in humans. A common mechanism of protein regulation is ubiquitylation, which involves an ubiquitin ligase, which upon attaching to a target protein adds chains of small proteins, called ubiquitin. These ubiquitin chains act as tags, signaling the protein for degradation by the cell proteasome. The ubiquitin ligase Cdc4 recognizes a consensus sequence denoted CPD; PGC-1α contains two sequences similar to the CPD consensus and have demonstrated a role in signaling the binding of Cdc4. The consequence of this interaction results in PGC-1α destabilization. PGC-1β also contains a sequence that matches the CPD consensus. As a result, we investigated the possibility of PGC-1β regulation by Cdc4. Upon performing co-purification and stability experiments, we identified that Cdc4 attaches to PGC-1β consequently destabilizing it. These findings implicate Cdc4 in contributing to the regulation of the PGC-1 family of proteins, and thus displaying the potential to be a novel pharmacological target.

**Presentation Index:** E-C 2 **Present Time:** 1:15 PM

| **Student Presenter(s):** | **Sponsor(s):** | **Department(s)** |
|---|---|---|
| Metzger, Nathan | Olson, Brian | Biological Sciences |

**Home Automation System**

Rapid growth of technology leads the accomplishment of tasks in a faster pace. With a button, we are able to access large amount of information, which helps user to understand monthly electricity bills. This system provides user information of energy consumption in real time, smart planning for controlling appliances, and optimization of energy consumption at home. Home Automation System is defined as implementation towards existing home environments, add to the safety and coziness of homes, and facilitate inhabitant's residency without any changes in the infrastructure. This system aims to create a multipurpose standalone device capable of monitoring and controlling home appliances. Active devices within the system can be configured and monitored through both onboard touch screen and Ethernet connection on his/her computer. This system introduces the use of Power Line Communication technology where it requires no new network, low cost, and convenient installation. In addition, the field experiments and demonstration proved that our design can be practically implemented and provides adequate results.

**Presentation Index:** E-C 3 **Present Time:** 1:40 PM

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Najmee, Taha; Tan, Chung Keong; Wickremasuriya, Boosabaduge A. | Hossain, Md | Electrical and Computer Engineering |

**Tracing Scottish Migration to Minnesota Through Religious, Cultural, and Social Landscapes, 1840-1930**

The influence of Scottish religion on the Minnesotan landscape as indicated in the quantity and distribution of Presbyterian churches suggests the predominance of religion as a principal factor in the formation of Scottish immigrant communities in Minnesota. This study of Scottish migration to Minnesota between 1840 and 1930 traces the transfer of Scottish religion, culture, and society from the areas of origin to the areas of settlement and examines the economic and religious values of those emigrating. An examination of these values as indicated in archival and secondary sources reveals the extent, or lack-thereof, that religion and economy played in these communities.

**Presentation Index:** E-C 4 **Present Time:** 2:15 PM

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Rhodes, Mark | John, Gareth | Geography, Planning and Community Development |

**Session E-VN** **Graduate School Mystery Revealed** **Voyageurs North**

**Graduate School Mystery Revealed**

Who and how questions answered about graduate school.

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

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

**Session E-VS** **Grant Writing 101 for Students** **Voyageurs South**

**Grant Writing 101 for Students**

Introduction to searching for fellowships, scholarships and external funds to support academic projects.

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

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

**Session F-A** | **Humanities and Fine Arts** | **Alumni**

**Second Language Acquisition with Rosetta Stone**

Effectiveness of second language acquisition through use of Rosetta Stone software will be discussed in this project. Discussions and implications will be based on a literature review of computer-assisted language learning theories with regard to multimedia, computer tutor programs. The value of language learning with Rosetta Stone will also be analyzed for the contexts in which it is implemented, namely in self-access centers, schools and other professional organizations and companies. The Rosetta Stone course is generally found to be lacking in the authentic language interaction necessary for acquisition of a second language. Though Rosetta Stone has the power to provide users with retention of target language forms and lexicon, that retention may be oftentimes inapplicable to the context in which the language is being learned. Rosetta Stone's expansion into computer-mediated communication technology, however, may be its saving grace, as it integrates authentic, online interaction with its course instruction and also mobile technologies. Rosetta Stone may be able to integrate this variety of functions into new contexts and environments, as long as it doesn't lose sight of educational goals in place of commercial ones.

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

| **Student Presenter(s):** | **Sponsor(s):** | **Department(s)** |
|---|---|---|
| Kohler, Benjamin | Mueller, Isolde | Foreign Languages and Literature |

**How Do We Know What Our Students Know? An Alternative Method of Assessment.**

In the world of education, how do educators know what their students know? What do they base their assessment method choices on? In an attempt to address the growing frustration of educators with standardized testing in nearly every academic discipline, portfolio assessment has emerged as a viable alternative that embraces an expanded definition of literacy and knowledge and allows students to demonstrate their abilities in a way that reflects a range of their skills. In recent years, portfolios have gained popularity in first language classrooms, and this study investigates its implementation in a second language setting. This study is an ongoing investigation that began first by looking at students' attitudes toward different types of assessment in a writing course in an Intensive English Program at a Midwestern University. Additionally, the classroom is currently implementing the use of portfolios and portfolio assessment, and the implementation process is being documented to include issues that arise throughout the semester. The instructor of this class is documenting the implementation of using portfolios as an assessment method by writing a summary and reflection of each class period and examining the data for issues and themes throughout the semester. To learn of students' attitudes toward different methods of assessment, questionnaires were administered at the beginning of the semester. Individual interviews also took place as a follow-up to the questionnaires to gain more insight into the responses provided by the questionnaires. While similar studies in different contexts have found various benefits of using portfolios in the classroom, the current study and its unique context have been experiencing various challenges and difficulties that question the appropriateness of portfolios and portfolio assessment in an intensive learning setting. The study aims to provide practical implications for assessment methods in various teaching settings.

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

| **Student Presenter(s):** | **Sponsor(s):** | **Department(s)** |
|---|---|---|
| Colpaert, Kathrine | Jarvis, Shawn | Foreign Languages and Literature |

**The Roles of Percussion in the Romantic and Post-Romantic Periods of Music**

The emergence of percussion is important for people to be informed about because percussion is present in nearly all of today's recognized music. People will appreciate knowing how percussion started playing a more important role in music during the Romantic and Post-Romantic periods of music. I completed my research using six different printed books, two pictures, as well as eight recordings of music written during those two periods of music. While researching the topic, I learned how percussion had several different roles, including basic, accentuating, and programmatic roles. The most important thing to know is that prior to the Romantic Period, percussion played a very minimal role, but really started to emerge in the ways mentioned during the Romantic Period.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Elker, Eric | Verrilli, Catherine | Music |

**Session F-GN** **Statistics II** **Glacier North**

**Data Analysis of SCSU Students Applying During Free App Week**

In November 2011, a week was designated as Free Application Week for students applying for admission to any MnSCU institution. During this week in mid-November, no application fee was required for new applications for admission. At SCSU, approximately 1600 applications were received during that week, of which about 1000 were eventually completed. This large influx of student applications was not anticipated ahead of time, and it disrupted the normal processing of applications by the SCSU Admissions Office. In order to do predictive modeling that enables accurate forecasts of new entering first year students, a better understanding of the effects of this large number of applications is needed. This is the goal of this project.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Udvig, Colin | Robinson, David | Statistics |

**High Dimensional Model Selection and Validation: A Comparison Study**

Various regression methods have been used to build models to predict future results for decades, the classic and most widely used method is the ordinary least square method applied in diverse fields such as statistics, finance, medicine, economics, and psychology. The analysis procedure of this approach is mathematically easy and the results it produces are easily interpretable. However, in some areas, like gene expression data analysis and medical studies, data with small number of observations and large number of variables is a typical situation. Least squares regression algorithm will fail to implement. Having too many features in a model may cause overfitting problem, and it may affect the accuracy of the prediction. So model selection becomes crucial. The traditional methods for model evaluation such as subset selection, Akaike's information criterion, cross-validation, generalized cross validation and ordinary Bayesian information criterion are too liberal for variable selection and they incline to choose too many variables (Chen and Chen (2008)). Several regularized regression methods were invented to fix the drawbacks of the least square method. In this paper, we compare several variable selection approaches like lasso, elastic net and SCAD, and study on the extended Bayesian information criteria (Chen and Chen (2008)), which consider the number of parameters and the complexity of the model space. I am also going to apply these methods to retention data from Saint Cloud State University

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Li, Zhengyi | Xu, Hui | Statistics |

**Optimal Matching - Does It Reveal Deep Structure?**

Optimal matching (Sankoff and Kruskal, 1983, McIndoe and Abbot, 2004) is a data-mining technique used to compare categorical sequences. Given a set of sequences, an optimal matching solution gives a position to each sequence in a space of similarities, same as popular techniques such as multi-dimensional scaling and clustering. Each categorical sequence can be assumed to be the realization of a random object, generated from a multi-variate distribution (with known properties). Hopefully, the space of similarities among sequences obtained by Optimal Matching closely approximates the space of similarities among original random objects. However, by simulations, we find that optimal matching solution introduces considerable noise and dimensional distortions.

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

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

**Using Time Series Methods to Predict Emergency Department Patient Flow**

The aim of this research is to address the issue of staffing fluctuation, more specifically, productivity and capacity planning in the emergency department of a hospital. By comparing time series forecasting (with emphasis on exponential smoothing) methods on patient volume, a conclusion can be reached on which method is most suitable for the data collected. When staffing and planning is done properly, employees have necessary resources to do their job well and productivity can be maximized. This improves positive patient outcomes and experiences, patient and optimum throughput, employee satisfaction, and reduces unnecessary spending. The models proposed for this comparison are time series methods namely: ARIMA (autoregressive moving average), exponential smoothing methods (BATS (Box-Cox transform, ARMA errors, Trend and Seasonal components) and TBATS (Trigonometric Box-Cox transform, ARMA errors, Trend and Seasonal components), and also a method that combines integer valued time series models with dynamic latent factor structure. The forecasts from these models will be evaluated.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Nwoke, Uchechukwu | Xu, Hui | Statistics |

**Session F-GS** **Computer Forensics II** **Glacier South**

**Solving a Virtual Crime Using Digital Forensics Tools**

Digital forensics is a fast growing field that is helping to solve crimes through the extraction and analysis of digital information within computers. Our presentation will go through the steps and tools used to gather e-evidence regarding a fictional crime that took place in St. Cloud, MN. We will then allow the audience to decide if the suspected criminal is guilty or innocent.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Biehl, Michael; Shehadeh, Bashar | Schmidt, Mark | Information Systems |

**Computer Forensics Project**

This project is focused on creating a fake crime that involves computer as an instrument or as a target. The other part of project is about solving a crime by using computer forensics technologies. The forensics tools we used include S-Tools, FTK 1.8, password cracker, etc. In the fake crime that was created, we provided pictures, e-mail messages, deleted files that remain on hard disks as evidences. These evidences will lead the other group of students to solve the crime.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Xu, Liheng; Chen, Zepu | Schmidt, Mark | Information Systems |

**Fictitious Crime Investigation Using Digital Forensics**

With the rapid development in technology, computers are being used as tools with malicious intent. Some use them as tools while others use them as target. The focus of this project is to show how computer can be used as a tool for crime and how investigators can use digital forensics to get information from them and catch the criminals. We are creating a crime scene where computers are part of a crime tool where some criminals plan for a plot and exchange the information they gather using various computer techniques. They destroy all the other tools used in the crime. Ultimately, the investigators use digital forensics to track down the criminals and arrest them. We will show how forensic tools can be used and how evidences are collected from the digital medias.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Tuladhar, Dibesh; Tamanag, Priyanka | Schmidt, Mark | Information Systems |

**A Digital Forensic Quandary: Who Done it?**

With all the recent headlines regarding online security breaches, including the New York Times, Apple and the Federal Reserve, it is easy to forget that more often than not the real threat of information loss arises from within an organization, and is often a trusted employee. The use of computer forensics has become an increasingly important area of emphasis for large corporations and government entities as the incidence of sensitive information loss has continued to increase. Some FBI studies have found that as much as 75% of intellectual property theft is perpetrated by inside employees or third party contractors, or individuals who are deemed to be trusted by their organization. With this project we hoped to provide a case study to show the importance of digital evidence in modern intellectual property cases, and the power of available tools to both hide and obfuscate electronic transmissions as well as those that shed light on the transmissions that have taken place. The method we used to create the case study was to devise a fictitious intellectual property theft, and produce data to be examined by another team of computer forensic examiners. Arthur Jones, a salesperson for Aegis Security recently resigned from his job and after waiting for his non-compete clause to expire, he has begun employment with one of Aegis's main competitors Cautela. Shortly thereafter many of Aegis's most important clients began leaving for their rival Cautela, and Aegis became suspicious of why this exodus was occurring. After some initial searching, Aegis's investigators have accused Arthur Jones of intellectual property theft and breaching his non-compete clause in his employee contract. The goal then was to try and determine whether a crime had been committed, and be able to prove it in a court of law.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Rice, Erich; G.C., Deepak | Schmidt, Mark | Information Systems |

**Analysis of Solid State Drive**

With constantly changing technology and increasing cyber-crimes, Digital forensics has been integral part of law enforcement agencies to fight against the criminal misconducts for years. Among all the techniques used by forensics examiners, solid-state hard drive analysis is one of the most popular techniques that require precision, patience and extreme level of expertise. For our project, we bought used solid-state drives from different sources and did our analysis. We examined the hard drives using different forensic tools and software to make sure that the data remain unaltered and authentic. Preserving data with any hardware damage was our top priority. From this project we learned digital forensics could be used to gather hidden evidence as well as used in the court to prosecute criminals.

**Presentation Index:** F-GS 5 **Present Time:** 3:20 PM

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Malla, Sandesh; Redman, James | Schmidt, Mark | Information Systems |

**Computer Forensics Case Solutions**

Computer forensics is essentially the science of acquiring, preserving, retrieving, and presenting electronic data. In order to use computer forensics, one must be educated in a number of disciplines including legal procedures and laws of evidence, computer technology, and investigative techniques. This growing field has become important due to the overwhelming use of technology in society. Our work involves the development of a crime and how computer forensics can be used to solve it. The development of the crime was carefully done as to leave an electronic trail, but still hide the tracks along the way. Will the e-evidence be out in the open, but unsuspecting? Or will it be hidden on the computer? Our work will show what kinds of activities will leave an e-evidence trail and answer questions such as what really happens when you delete something on your computer. The possibilities of the crime range from using the computer to target other computers such as hacking or creating viruses, using the computer as the crime instrument such as fraudulent use of ATM's, to the computer being incidental to a traditional crime such as a bank robber who just happens to research his banks beforehand or upload pictures on his computer afterwards. So the question is, what crime did this average college student commit? How will the criminal be caught?

**Presentation Index:** F-GS 6 **Present Time:** 3:40 PM

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Tetali, Venkata; Robarge, Rachel | Schmidt, Mark | Information Systems |

**Session F-VN** **Social and Behavioral Studies II** **Voyageurs North**

**Sexual Expression in the GLBTQ Community**

This presentation aims to discover how sexual expression is displayed and perceived in the gay, lesbian, bisexual, transgender, and queer (GLBTQ) community. Selected members of this group have been interviewed in an electronically mediated format and their collective ideas have been integrated to show common themes. Sexuality is what separates this minority from the rest of society so it is often the focus of outside analysis, whether positive or negative. Instead of projecting thoughts and feelings onto this group, this research aims to allow the GLBTQ community to speak for itself.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Wolfe, Bradley | Zuo, Jiping | Sociology and Anthropology |

**The Analysis of the Culture, Issues, and Economic Impact of the Spanish Speaking Community in the St. Cloud Area**

The analysis of the culture, issues, and economic impact of the Spanish speaking community in the St. Cloud area was studied. There seems to be a strong and vastly growing Latino population in the area, that are brought on by more opportunities such as better jobs, more secluded environment, and better resources in the St. Cloud metropolitan area. Particularly in Minnesota, where the Latino businesses have grown three quarters in the past decade. St Cloud presents to be one of those growing and most populated Latino areas in the state. While having previous experience interviewing and talking with the Spanish speaking population in St. Cloud, my conclusions of the growing area have a majority to do with St. Cloud's resources and location. St. Cloud State University itself offers many opportunities, while there also are plentiful job opportunities in the local manufacturing companies in the St. Cloud area. In conclusion, I can see that St. Cloud offers opportunities to Latinos while still being close to the Twin Cities metro.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Chrisinger, Alyssa | Blinnikov, Mikhail | Global Studies |

**Session F-VS** | **Rhetoric and Writing** | **Voyageurs South**

**Resisting the Mechanistic Model: Praxis, Technology, and Meaningful Practice**

Responding to a typical call for applications, a job seeker must correlate his/her skills with the specific "proficiencies" outlined for the position at hand. It is assumed by many employers, however, that proficiency lies outside the realm of literacy. Current applications of "proficiency" in the workplace ignore the learning process required in order to achieve it, leading to a mechanization of the self and a submission to the industrialized system. To avoid becoming mere cogs in the industrial order, a new perspective is needed to value writers as creative contributors to a constrained technologically-mediated complex. Seeking to disambiguate "proficiency" as an acceptable term, I offer an Aristotelian application of praxis to thoughtfully describe organizationally-situated expertise. In gaining a rhetorical awareness, technical communicators are empowered to make strategic decisions on their own volition. Most importantly, a pedagogy with an emphasis on praxis opposes the ensuing mechanization of writers in a postmodern society.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Hennes, Jack | Heiman, James | English |

**Slaves in 19th-Century St. Cloud: Presenting the Rhetoric of Race in a Digital Archive**

Archival research provides an opportunity for rhetorical interpretation of historical documents as the United States of America made the transition from chattel slave system through the Civil War, where former slaves were recognized as full citizens in government documents. Dr. Chris Lehman's book *Slavery in the Upper Mississippi Valley, 1787-1865: A History of Human Bondage in Illinois, Iowa, Minnesota and Wisconsin*, provides the foundation for this archival and rhetorical research project. Researching how slaves were brought to St. Cloud, MN, and what happened to them when they were taken away from the area points to changes in race, rhetoric, and representation. The limited documentation that does exist points to how slaves were regarded as property through the legal system; they had no stable surname to prove their lineage. Because they were property, slaves' legal identities were given to them by their owner and only after Emancipation do the records point to attempts to construct new identities as free people. Furthermore, the lack of documentation is just as significant when researching the slaves' identities because it points to a system constructed around stripping away personhood.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Ferguson, Elizabeth | Cogdill, Sharon | English |

**Teaching to the New Rhetorical Expectations of Audiences and Authors**

According to sociologist and philosopher Jürgen Habermas, the 18th century saw the creation of a rift that separated readers from writers. The increasing number of literate English-speaking people meant that there were more readers and proportionately fewer writers. So the act of writing became a professionalized activity and readers took on a lower, more passive role as part of a consumerized public. This representational culture grew with the expansion of mass media, continuing to encourage a non-critical audience. The past decade has brought technological advancements that render previous ideas about the relationship between audiences and authors shattered. Audience members in all forms of media currently have at their disposal an astonishingly large number of forums to engage with texts and their authors. This highly intricate and rhetorically complex discourse community has resulted in modern audiences expecting not only for their opinions to be heard, but for a seat at the creative table. And by teaching to this digital rhetorical landscape, first-year composition courses can teach students not only to critically read texts, but to critically engage them.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Blank, Shawn | Veeder, Rex | English |

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

**Temperature Versus Emergence of Emerald Ash Borer In Minnesota**

The populations of most insect species are limited by cold temperatures, which are an important factor in evaluating the ability of an invasive species to establish and spread. Research is being done into how temperature differences affect the spread of emerald ash borer populations into Minnesota. The emerald ash borer (EAB, *Agrilus planipennis Fairmaire*) made its way to the United States on wood packaging material from its native continent of Asia. EAB arrived in Michigan in 2002 then started spreading into 18 states and two provinces in Canada killing off native ash (*Fraxinus spp*.) trees. On May 13, 2009, EAB was confirmed in Saint Paul, Minnesota. Two years later a quarantine was in place around the counties of Houston, Winona, Ramsey, and Hennepin.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Prodoehl, Caitlin | Torguson, Jeffrey | Geography, Planning and Community Development |

**Analytical Extraction Methodology: Developing an Efficient Single Drop Microextraction (SDME) Method for Diphenhydramine**

Analysis of environmental wastewater can provide useful information about the presence of known or questioned chemical compounds that have been identified to pollute, and pose health risks or hazards to the environment and people. Analytical solvent microextraction techniques can be used as means of achieving separation and identification of these known compounds. These extraction techniques are very important because they enable the purification and isolation of various organic and inorganic samples from large volumes of solution. The method is highly efficient in that it is convenient, rapid, and easy to operate and has low solvent and sample consumption. A reliable quantitative extraction technique can help identify such compounds in the environment, and in biological samples. In this work, a novel manual and automated analytical technique termed single drop microextraction (SDME) was developed to determine the presence of diphenhydramine hydrochloride in water, which was then detected by gas chromatography/mass spectrometry (GC/MS) using scan and single ion monitoring (SIM). The manual method of extraction is tedious and time consuming, and only small number of samples can run at a time. On the other hand, the automated method of extraction is highly efficient and more accurate and precise because multiple runs and detection can be done in a more reproducible fashion. The objective of this work is to develop a well-established method that can be used as a standard method of analysis. With different conditions to be tested (concentration, stirring time, rate and drop volume), it would be anticipated that the amount extracted will increase with stirring time, approaching a plateau at long times; and will increase directly with concentration. The successful development of this technique will provide efficient means for chemist to detect the smallest amount of compound in a solution or environmental wastewater and in biological samples.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Yiadom, Atuobi | Jeannot, Michael | Chemistry |

**EEG Activity Show Differences Between True and False Memory For Video Recall**

Does misleading, leading and neutral questions generate different brain wave activity under false memory? Psychologists view false memory as actual memory distorted with external factors. In retrieving information, people tend to include some features of experiences that never occurred (Fuentemilla et al., 2009). False memories are mostly triggered by stimuli in the environment (Loftus, 1997), and It is also a problem in eyewitness testimony, which is an issue of concern in the court of law. Studies of false memory have indicated that false memories are significantly more frequent under conditions of high arousal than conditions of low arousal. It is summarized that the effects of false memory is actually due to arousal (Corson & Verrier, 2007). Some researchers theorize that false memories are partly attributed to impaired familiarity processes (Caza, Dore, Gingras & Rouleau, 2011). The purpose of the study was to use different types of questions; Leading, neutral and misleading questions to elicit false memory, and to use EEG to identify which hemisphere of the brain is false memory prevalent. In this study, participants were asked to watch a short video about a person putting something on the roof by Wells (2012) while wearing five electrodes to measure their EEG. Participants were then asked questions about the video including leading and misleading questions. While participants answered the questions, their brain wave activity was being recorded. After a brief delay, participants were asked questions that determined if memory was affected by the leading and misleading questions. Results gathered from participants showed that false memory occurred. EEG data showed inhibition and construction of memory. The implication of this study is to find alternative means to aid police interrogations. EEG may be less vulnerable to conscious manipulation compared to a traditional lie detector that measures such things as temperature and galvanic responses.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Yiadom, Atuobi | Valdes, Leslie | Psychology |

**Study Abroad Returnee Programs Benefit Students' Futures**

Previous literature discusses the benefits of studying abroad in college. The personal, intercultural, and professional development that students experience while abroad is very beneficial to them and provides much opportunity for growth. Although there are many benefits of studying abroad, students also face a variety of challenges upon returning home. Some challenges include reverse culture shock, managing cross-cultural transitions, alienation, being unaware of next steps, and more. This study was conducted because of this important piece of the study abroad experience – reentry. Helping students navigate through the reentry process was the objective of my project so I developed a Study Abroad Returnee Workshop to complete this task. The workshop focused on personal reflection and evaluation of the students' study abroad and reentry experiences to help them adjust to the many changes and challenges they are facing. The workshop also focused on the career benefits that their experience provided them and taught them how to maximize this and market their experience to benefit themselves in future careers. The subsequent evaluation results of the workshop provided interesting feedback and support for such programs, demonstrating the importance of reentry programs on college campuses to help students transition back home after studying abroad.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Olson, Hailey | Barth, Carrie | Counseling and Community Psychology |

**How Career Services Can Better Serve International Students**

With many colleges and universities seeing an increase in the number of international students on campus, student affairs professionals are struggling to find ways to best serve this diverse population of students. Career Services is one of the offices on many campuses that is challenged with meeting the demands of this motivated population. A number of universities have developed model programs to help international students with the unique obstacles they face when searching for jobs and internships. This study was designed to evaluate the effectiveness of a program titled Career Advice and a Pizza Slice-International Student Edition. The program included an alumni/student panel and a workshop and was evaluated by looking at the level of learning students experienced.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Thielen, Amanda | Barth, Carrie | Counseling and Community Psychology |

**Stem Cells and Society: What Secondary Students Know and Believe About Regenerative Medicine**

For over a decade controversy has engulfed the research of stem cells. Until recently, viable stem cells were only thought to exist in embryonic tissue. Consequently, the study of these cells required the death of human embryos. Embryonic stem cells are unique because they can differentiate into any type of body cell and quality termed “pluripotency.” Adult stem cells are known to exist in the body but they are “multipotent,” meaning they can only differentiate into certain cells. In 2007, Japanese scientist Shinya Yamanaka discovered a series of regulator genes and used those genes to induce somatic skin cells to a pluripotent state. He called these genes “induced pluripotent stem cells.” The prospect of these cells has the potential to solve the controversy associated with embryonic stem cells. Yet controversy has surrounded these new cells as politicians and sports players want them to be used in clinical therapies immediately. This technology, however, is relatively new and there is still much to learn about the nature and application of these cells. With such little information induced pluripotent stem cells do not meet the guidelines of the FDA and are not approved for treatment. Should the FDA loosen their restrictions when the medical value is so great? The goal of this project was to determine what a population of 10th grade biology students know and believe about the use of stem cells in medicine. Using a questionnaire to survey 250 students, I discovered that 10th grade biology students have little knowledge or opinion of biomedical advancements with stem cells. Since stem cells are becoming central to the biomedical debate, I recommend schools provide more opportunity for students to explore new biotechnologies and their societal, economic and technologic impact.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Johnson, Zach | Hoff, Jean | Earth and Atmospheric Sciences |

**Using Agile Project Management Technology in Dynamic Environments**

Dynamic environments and complex projects pose a challenge to traditional project management techniques. By comparing the traditional project management methods with new techniques of agile management we understood that the agile project management using various practices like scrum methods and extreme programming allows project teams to better adapt to rapidly changing environments. In today’s world, it is essential to understand and use agile methodology to better involve your customers, improve understanding and develop communication with them. Techniques described in this document can be used successfully in selective dynamic settings. We did a study and research of some companies that uses agile project management methodology. From our research and studies, we have noted that agile management helps the project team to save a lot of money and time, ultimately leading to the success of the project.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Tripathi, Dipendra; Malla, Sandesh | Polacco, Alexander | Management |

**Verification Bias Correction in the ROC Curve Estimation for Continuous Outcomes**

The accuracy of a screen test is critical when determining disease status. A screen test is a noninvasive and inexpensive procedure that assists health care providers to decide whether the patient has the disease or not. A mammogram test is an example of a screen test used to detect breast cancer. An indication of breast cancer is when the mammogram test results are positive, whereas an indication of no breast cancer is when the mammogram test results are negative. The positively-tested-for disease patients are more likely to proceed to get a biopsy to confirm the status of the cancer than negatively-tested-for disease patients. A Gold Standard test is considered as the most accurate test to determine a patient's disease status, in this case the biopsy is the Gold Standard test. Screen test may not be completely accurate in detecting disease status. Therefore, patients with positive signs of disease are more willingly to verify their disease status using a Gold Standard test compared to patients with negative signs of disease. Hence the problem of verification bias arises when patients are not randomly selected for verification. The purpose of this research is to correct verification bias for continuous outcomes. R Software was used for simulations, plotting Receiver Operating Characteristic curve and calculating Area Under the curve to illustrate the effectiveness of the study. This study benefits the medical field when measuring the accuracy of the screen test.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Duong, Quyen | Zhang, Shiju | Statistics |

**Community Assessment of Diabetic Foot Ulcers in Concepcion, Chile**

Little is known about patient's resources and knowledge of diabetic foot ulcers in Concepción, Chile. The nurses of the Centro de Salud Familiar(CESFAM) understand that patients with diabetic foot ulcers lack the knowledge and resources about their ulcers. A descriptive research study using a paper survey was utilized with convenience sampling. Participants were anonymously surveyed and reassured that their identity would remain confidential throughout the process. This study revealed more information about patient knowledge and resources related to diabetic foot ulcer care in Chile, but further research is still needed. A majority of the patients surveyed believed that their diabetic foot ulcer was a disease and not diabetes. Patients did not have adequate knowledge of the association between diabetes and diabetic foot ulcers, however, they reported adequate resources and ability to care for their diabetic ulcers. Most patients stated that the nurses fully answered questions about their diabetic foot ulcers. Some patients were not always capable of attending all of their diabetic foot care appointments in the CESFAMs. The implication of this study is the lack of adequate education about the complications of diabetes in the community. It needs to be noted that cultural differences can affect how patients view their knowledge and capability of their diabetic ulcer care. Based on the interpretation of the findings, patients with diabetes have a need for increased education pertaining to diabetic ulcers and their complications. In regards to availability of resources some patients would benefit from receiving home care for their diabetic ulcers.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Gehrman, Diana; Piehl, Katherine; Mahoney, Johanna | Hiemenz, Melinda; Henry, Vonna | Nursing Science |

**Antibiotics in Meat**

The presentation will explore the use of antibiotics in meat. With the meat industry using four fifths of all antibiotics, there has been increased concern among consumers. Meat industry giants such as Tyson, Cargill and JBS meats are hiding what they feed their livestock with only profit in mind. The presentation will also educate on how to tell which meats are antibiotic free. Labels reading "all natural" and other misleading packaging can be confusing to consumers trying to eat antibiotic-free meat.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Quillo, Kori; Olson, Sarah | Lindstrom, Sheila | Sociology and Anthropology |

**Kandioyohi County Public Health Customer Satisfaction**

The research we are trying to assess is satisfaction of the services Kandiyohi County Public Health provides. This research is needed in order to provide information that will help guide the public health service to improve the quality of services it provides. This research is significant because it will give Kandiyohi County Public Health an idea of how their customers think and feel about the services they are receiving. We distributed a 13 question survey to the customers of Kandiyohi County Public Health office. We had ten Likert style questions, one yes-or-no question, and two open-ended questions on our survey. The survey also included 5 demographic questions including: age, gender, ethnicity, education level, and service used. 59 surveys were returned and used for data analysis. We calculated the mean, median, mode, range, and percentage of responses for the each question. We then complied all of this information into one document containing both tables and written narratives. Participants rated "Staff members were respectful and professional" the highest. Participants rated "Services provided in a timely manner" the lowest. Majority of people (50%) found out about the services through friends and family. 40% of participants expressed concerns with making appointments. 100% of participants would recommend Public Health services to others. Overall, people were strongly satisfied with the services provided through Kandiyohi County Public Health. A large number of customers were not given the opportunity to participate in the survey. Not all of the KCPH staff members were aware of the surveys. Based on interpretation of findings, customers of Kandiyohi County Public Health were strongly satisfied with their experience overall.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Louis, Deborah; Weckwerth, Marissa; Setrum, Holly; Galloway, Ashley; Zaiser, Kelly; Michael, Kimberly; Perske, Greta | Hiemenz, Melinda; Warner, Susan | Nursing Science |

**Occupational Therapy In A School Setting**

For my project I observed a certified occupational therapist for a total of thirty hours. I observed an occupational therapist who worked with students in school. Occupational therapists in schools are important because they help students incorporate therapeutic strategies throughout the day and across learning environments. Children learn the best when activities are incorporated into their natural environment. I learned from this project how occupational therapists assist school age children. I was able to learn about the process of selecting and evaluating children who may need an occupational therapist. Additionally, I was able to observe the work that an occupational therapist does with children. Occupational therapists who work within schools are an important support for the student transition into educational as well as community settings.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Habisch, Courtney | Valdes, Leslie | Psychology |

**University Honors Program Outcomes**

This research assesses impacts of participation in the University Honors Program (UHP) at St. Cloud State University. Regular program assessment assures high quality and the meeting of program objectives. The learning objectives created in 2005 have not been assessed, so a local instrument was created with qualitative and quantitative items and data were collected via mailed survey to UHP alumni. Participants (N=66) included graduates from 2008-2012 from a range of academic majors. The results address the degree to which involvement in the UHP has contributed to skill development, personal growth, interpersonal development, and professional development for life beyond college. Findings will be used to assess and revise learning outcomes and suggest program changes.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Seefeldt, Lacey | Barth, Carrie | Counseling and Community Psychology |

**Teaching Easy Onsets Effectively for Optimum Retention**

Childhood stuttering affects up to 5% of children and can be associated with negative long-term consequences such as school dropout, social isolation, and unemployment (Guitar, 2010). While stuttering treatment is effective (Guitar, 2010), the cost and time involvement is prohibitive, particularly for those of low socioeconomic status (e.g., new immigrants, rural and inner city families). Speech-language pathologists teach new speech skills to clients who stutter. Two key principles that influence how well a client who stutters will remember new skills are practice and feedback. This project examined which types of practice and feedback optimized learning and retention (remembering) of a stuttering therapy technique called easy onsets. This project is unique because no previous research has focused on comparing the effectiveness of different speech therapy techniques to save time and costs.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Carlson, Katie; Roberts, Alyssa; Peterson, Ronni | Smits-Bandstra, Sarah | Communication Sciences and Disorders |

**What Men Do Not Know: They Can Get Breast Cancer (part II)**

The goals of this project are to determine the current level of awareness and knowledge of men about breast cancer, to increase public health awareness concerning the existence and severity of the issue of male breast cancer, and to educate men of the steps necessary in detection and prevention in advance. This project may provide a significant insight that can help to improve men's knowledge of the disease in order to increase the efficiency of current public education efforts. To do this, a literature review and an exploratory survey of Male Breast Cancer (MBC) issues will be conducted to find current information. Males (n = 75) with different backgrounds and levels of knowledge will be asked to complete a short survey questionnaire on MBC. The results will be recorded and analyzed to show different level of men's awareness and knowledge of the disease in different ethnic and age groups. The survey conclusion is that MBC is a hidden public health issue that must be addressed in order to improve the general health and quality of life for thousands of American men. It is important to help men to be aware of the existence of the disease and to realize how dramatically breast cancer can possibly affect their health in general. Increases in self-awareness combined with early prevention are the most powerful strategies to combat male breast cancer.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Nguyen, Nhan | Antunez, Hector; Melcher, Joseph | Kinesiology, Health and Physical Education, Psychology |

**Teaching Pausing Effectively for Optimum Retention**

Childhood stuttering affects up to 5% of children and can be associated with negative long-term consequences such as school dropout, social isolation, and unemployment (Guitar, 2010). While stuttering treatment is effective (Guitar, 2010), the cost and time involvement is prohibitive, particularly for those of low socioeconomic status (e.g., new immigrants, rural and inner city families). Speech-Language Pathologists teach new speech skills to clients who stutter. Two key principles that influence how well a client who stutters will remember new skills are practice and feedback. This project examined which types of practice and feedback optimized learning and retention (remembering) of a stuttering therapy technique called pausing. This project is unique because no previous research has focused on comparing the effectiveness of different speech therapy techniques to save time and costs.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| McWilliams, Erin; Rehnstrand, Wendy; Swanberg, Breanna | Smits-Bandstra, Sarah | Communication Sciences and Disorders |

**Effect of DDE on Type 1 Diabetes Incidence in NOD Mouse Model**

Effect of Persistent Organic Pollutant Administration on Type 1 Diabetes Development in NOD Mouse Model Type 1 diabetes (T1D) is an autoimmune disorder which results from the absence of insulin production due to the destruction of pancreatic beta cells by specific immune T cells. Genetic, environmental or even a combination of both factors could trigger the development of T1D. It is hypothesized that organic pollutants, such as p, p'-DDE, a derivative of DDT, known to be toxic to human health in general, could induce T1D. However, this has not been confirmed in previous studies. Here, we test whether long term treatment with DDE affects the development of T1D in 4 groups of an 8-week-old female Non Obese Diabetic (NOD) mouse model. This strain of mice is susceptible to spontaneous development of autoimmune insulin dependent diabetes. Each group of mice received intra peritoneal injections of either 25 or 50mg/kg DDE dissolved in *dimethyl sulfoxide* (DMSO), with a control group injected intra peritoneally with corn oil dissolved in DMSO, biweekly, for a period of 20 weeks. The volume injected was based on the weight of the mice. The blood glucose level was measured weekly by bleeding the tail vein and using an Accu-Chek Aviva blood glucose meter. A glycemic level of 220mg/dl or more was considered an indication of diabetes. Statistical analysis will be performed to determine whether there is a significant difference in the frequency of diabetes development and the level of blood glucose between the DDE-treated and control groups.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Ghazal, Leila; Frempong, Nora; Thinamany, Sinduja; Knutson, Annie; Naga, Babita | Cetkovic-Cvrlje, Marina | Biological Sciences |

**Salt and pH-Dependent Swelling of Poly(N-isopropyl acrylamide-co-acrylic acid) Hydrogel Composites**

A salt and pH-sensitive hydrogel composite was prepared using free radical polymerization of N-isopropyl acrylamide and acrylic acid in the presence zeolite (ZSM-5). Gravimetric measurements of the swelling studies reveal the dependence of pH and salt effect on the polymer matrix for both hydrogel co-polymers and hydrogel-zeolite composites. This is the first report of a hydrogel-zeolite composite polymer matrix. The presence of zeolites was incorporated into the polymer matrix of a normal co-polymer hydrogel in order to study the swelling and mechanical properties of the polymer matrix in comparison to a co-polymer hydrogel. Hydrogel co-polymers and hydrogel-zeolite composites are synthesized in order to compare the effect of ionic osmotic pressure on each polymer matrix as they are in placed in solutions containing sodium or calcium salts at different pH's. The presence of sodium and calcium decreases the extent and rate of swelling for both polymers in comparison to being in deionized water alone. The presence of zeolites does appear to increase the extent of swelling of the polymer matrix compared to the extent of swelling for a co-polymer hydrogel in similar environments.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Klasen, Scott | Sivaprakasam, Kannan | Chemistry |

**Teaching Easy Onsets Effectively for Optimum Transfer Outside of the Clinical Setting**

Childhood stuttering affects up to 5% of children and can be associated with negative long-term consequences such as school dropout, social isolation, and unemployment (Guitar, 2010). While stuttering treatment is effective (Guitar, 2010), the cost and time involvement is prohibitive, particularly for those of low socioeconomic status (e.g., new immigrants, rural and inner city families). Speech-Language Pathologists teach new speech skills to clients who stutter. Two key principles that influence how well a client who stutters can use new skills out in the real world are practice and feedback. This project examined which types of practice and feedback optimized learning and transfer (using new skills outside of the clinical setting) of a stuttering therapy technique called easy onsets. This project is unique because no previous research has focused on comparing the effectiveness of different speech therapy techniques to save time and

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Nemitz, Jessica; Thomas, Perrin; Brantley, Megan | Smits-Bandstra, Sarah | Communication Sciences and Disorders |

**Bioinformatic Analysis of the Valine, Leucine, and Isoleucine Biosynthetic Pathways in *Bacillus cereus***

*Bacillus cereus* is an endemic, soil-dwelling, Gram-positive, rod-shaped, beta hemolytic bacterium. *B. cereus* bacteria are facultative anaerobes, and like other members of the genus *B. cereus* can produce protective endospores. Bacterial growth results in production of enterotoxins, some of its toxins are highly resistant to heat and to pH between two and eleven. The hypothesis for the experiment is that *B. cereus* has the ability to synthesize valine, leucine, and isoleucine via specific biosynthetic pathways. Valine is an alpha amino acid, with the L-valine being proteinogenic. Valine is a non-polar branched chain amino acid, along with leucine and isoleucine, which means it, has a carbon atom bound to more than two other carbon atoms that give them unique H-bonding capabilities after synthesis. Leucine is also an alpha amino acid and also is classified as a non-polar hydrophobic amino acid due to its aliphatic (non-ring) isobutyl side chain. It is also proteinogenic and is a major component of the subunits in ferritin, astacin and other 'buffer' proteins. The third amino acid that will be discussed is isoleucine, which like the other two is an alpha amino acid with a branched carbon side chain. What is unique is that isoleucine has a large hydrocarbon side chain, that allow for four stereoisomer's of isoleucine that are possible, including two possible diastereomers of L-isoleucine.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Berent, Taylor | Kvaal, Christopher | Biological Sciences |

**Bioinfromatic Analysis of the Alanine, Aspartate and Glutamate Metabolism in the Pathway in *Bacillus cereus***

*Bacillus*, as a term in biology means any rod-shaped microbe. *Bacillus cereus* is an endemic, soil-dwelling, Gram-positive, rod-shaped, beta hemolytic bacterium that produces toxins (emetic toxin and enterotoxins). They are catalase positive and aerobic (or facultatively anaerobic) spore forming bacteria that are easily recovered on blood and chocolate agars and grow optimally at temperatures between 25 to 370C. It had been recognized as a food poisoning agent since 1955, but was first isolated and described in 1887 (Frankland and frankland). *Bacillus cereus* also referred to as *B. cereus* is said to compete with other microorganisms such as Campylobacter and Salmonella in the gut, hence it presence reduces the number of those organisms. *B. cereus* is also used as probiotic feed additive to reduce Salmonella in the intestines. The genome of *Bacillus cereus* is 100% complete, founded by the Department of Energy Joint Genome Program. St. Cloud State University is part of a consortium of institutions that make up the Collaborative Undergraduate Genomic Annotation Team. SCSU has undertaken the responsibility of using comparative genomic to identify the amino acid genomic pathways. Alanine is nonessential, nonpolar with *L-alanine* being second only to leucine in rate of occurrence. Aspartate and glutamate are very similar in that they are both negatively charged and polar amino acids. Aspartate and glutamate are involved with protein stability. I hypothesize that these amino acids have biosynthetic pathways in the synthesis in *Bacillus cereus* and that I will be able to identify the genes responsible for the synthesis of these amino acid using a comparative genomic approach.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Evans, Zoegar | Kvaal, Christopher | Biological Sciences |

**Electrochemical and AFM Study of Oxide Over-Layers on Magnetite**

Contamination of water by toxic heavy metals from natural and industrial sources is a serious and persistent threat to public health across the globe. Iron oxides, in particular magnetite (Fe3O4), have been shown to be effective sorbents of heavy metal ions and have great potential for environmental remediation. Under environmental conditions, magnetite adsorbs heavy metal ions through reduction and absorption onto the surface structure of the magnetite crystal, however, an oxide capping layer forms, significantly reducing the ability of the crystal to adsorb aqueous ions. In order to better understand the mechanism of surface oxide formation on magnetite crystals, a study was undertaken to observe the growth of these surface oxides under an oxidative applied voltage using electrochemical chronoamperometry (CA) an acidic electrolyte solution (pH 5, 0.1 M *sodium perchlorate* (NaClO4)) in a stepwise manner following the iron oxide stability field. The surface oxide growth that resulted was characterized using atomic force microscopy (AFM). The complimentary study of CA and AFM is used to determine the mechanism of oxide growth that may be used to improve magnetite's effectiveness as a sorbent.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Gardner, Colin | Petitto, Sarah | Chemistry |

**Smartphone Controlled Omni-Directional Tri-Wheel Robot (SCOTR)**

Since 2006, the number of engineering graduates from the 22 Accreditation Board for Engineering and Technology (ABET) accredited engineering schools in Minnesota has decreased from 1,912 to 1,408. Nationally, this number has decreased from 142,306 to 105,187 – a 26% decrease! Compare this with the 12% growth for overall students graduating from institutions of higher learning. These statistics reveal a major problem with today's education system, the lack of engineering and technology related science classes in the K-12 grade levels. The absence of these classes leads to lower interest levels in students when considering engineering as the focus of their higher education. Most students leave high school with the assumption that engineering is just an extension of all the math classes or chemistry classes they have taken, which typically consist of "dry" content, and never see the implementation aspect. This trend is a direct inverse to the increase in engineering jobs and rapid growth in technology. The Smartphone Controlled Omni-Directional Tri-Wheel Robot (SCOTR) aims to provide an engaging demonstration of the applications of technology. This three-wheel robot platform will move in any direction as controlled by an Android smartphone application. The main design aspects of this project involve the advanced motion and individual motor control algorithms, the embedded system design, the Android application interface, and communication protocol between the Android controller and the robot, which will be provided through Class 2 Bluetooth. SCOTR will be used at St. Cloud State University recruiting and STEM (Science, Technology, Engineering, and Math) events as a demonstration tool. The accessibility of the project to the younger generation will provide an appealing connection, enticing the young student to learn more about the engineering field.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Stumvoll, Tanner; Bajracharya, Arbindra; Collette, Ashlee | Hou, Ling | Electrical and Computer Engineering |

**Will Green Trends Result in More Insourcing in Global Supply Chains?**

The process of producing, packaging, moving, storing, delivering, and many other supply chain activities can be harmful to the environment. Over 75% of United States consumers are influenced by a company's reputation for being environmentally friendly. As the public consciousness of social responsibility and going green expands in the United States, the cost of outsourcing may outweigh the benefits. Implementing lean manufacturing allows personnel to offer more efficient input which reduces costs. This paper examines the possibility that insourcing may be an attractive alternative.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Devries, Crystal; Rosenberger, Jamie; Chen, Li | Polacco, Alexander | Management |

**Corporate Externalities**

Current research argues that corporate externalities have become more of an environmental issue than most people are aware of. This research explores the origin and scope of corporate externalities and what needs to take place to hold large corporations accountable for their environmental degradations and harm.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Warren, Nicholas | Lindstrom, Sheila | Sociology and Anthropology |

**Individual Differences in Attention: Optimism and Pessimism**

The relationship between optimism, pessimism, and attention was investigated as a function of performance across individual perception. Participants were measured on an Optimisim-Pessimism scale and then given an attentional task, that was partly memory based. In the attentional task, participants were shown images of United States one dollar bills and asked to identify whether the image matched the prototype of "real" money actually used in circulation or whether it had been altered in any way, which was then to be considered "fake." The individual differences in accurate responses between those scored high on optimisum versus those who scored high on pessimism in the initial measurement where then compared to see if there were any differences between the optimistic and pessimistic individuals. The hypothesis is that the perceptual orientation will result in a difference between the two groups.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Salzwedel, Rachel | Valdes, Leslie | Psychology |

**The Molding of Artisans: A Field Based Study on the Marketing Methods of Nicaraguan Ceramicists**

The ceramics market in Nicaragua, like in many artisan economies in developing countries, has been impressively adaptable in the new global economy. In the fall of 2011 I conducted an ethnographic research project recording, through observation, participant observation and interviews, the history, artistic styles and community culture of the artisan village of San Juan de Oriente, Nicaragua. This resulted in many more questions about the growing ceramics communities in the country for which I returned in August of 2012 to investigate. With the collaboration of two Managua based NGOs involved with the development of ceramicist communities, a survey was created that addressed questions of the demographics of such artisans, their organizational practices, their involvement with NGOs, their marketing methods, the challenges they face, and their future goals. Through formal and informal interviews of four individual artisans and four organized groups the verbal responses to this survey were collected. I also had the opportunity to interview a seasoned non-artisan local intermediary and collect a narrative perspective on how this industry has grown to support not only artisans but also their local communities. The results of this study showed that those artisans and cooperatives that were most renowned for their quality and honesty were better able to overcome the issues of access to markets.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Frost, Hannah | Blinnikov, Mikhail | Global Studies |

**Creating a STELLA Software Model to Simulate Nitrogen Removal During the Wastewater Treatment Process**

Creating a STELLA Software Model to Simulate Nitrogen Removal during the Wastewater Treatment Process Wastewater treatment is necessary to preserve human health and the environmental quality. Nutrients are big concerns in wastewater treatment process especially phosphorous and nitrogen, which are responsible of plant and algae overgrowth in aquatic systems. Excessive concentrations of nitrate in drinking water can also cause death. In an effort to describe and understand the function and efficiency of nitrogen removal through wastewater treatment process, I created a mathematical model using the STELLA software system. The model can be modified to test the efficiency of various nitrogen removal technologies including ammonia stripping, ion exchange, and biological nutrient removal. It is very important and cost efficient to simulate a procedure through software to predict outcomes and improve processes of the procedure and find out what could be done to improve the process.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Hallak, Rami | Rose, Charles | Environmental and Technological Studies |

**Assessing the Kuder Journey Interest Inventory for the Career Service Center at SCSU**

For this project, I have been assessing the introduction and use of a new interest inventory, the Kudor Journey, which the Career Services Center at St. Cloud State has purchased and will be implementing. Career Services currently uses the FOCUS inventory to assist students in their major and career exploration, they wanted to look at other tools that could benefit students. They found that the Journey program was user friendly, had a bigger picture component with skills assessment, range of skills and strength of value assessment. The Journey program used Holland codes, the theory is based on personality types that can be used to help direct people towards careers that will suit their interests, skills and work values. I started by contacting new students entering spring semester (2013) through e-mails letting them know what the Journey was and how it can help them choose a major and/or career direction. The e-mail contained directions and link to the Kudor Journey website. A survey was sent to these students to provide feedback of this tool. I also connected to students through two College 111 classes who took the Journey and responded to feedback questions, one class through in class discussion and the other by e-mail. Implementing the Journey into the office was a learning experience from how a program gets through the university into an office, negotiations for the program package, making the connection to students, and benefits to students in their major and career development process. Implications of adding the Journey assessment to the Career Service Center is offering alternatives and diversifying access to available tools, keeping up to date, offering services that fit individual needs, and a system students can use for life that can help them with their current career development as well as future career transitions.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Fonss, Rebecca | Barth, Carrie | Counseling and Community Psychology |

**A Review of Mindfulness Benefits From Childhood to Young Adulthood**

Mindfulness techniques have been used in adults for a long time, however, research suggests that mindfulness is appropriate for people of all ages to use to reduce stress and promote overall health. A literature review summarized and analyzed to the general benefits of mindfulness, effectiveness of mindfulness techniques, and how mindfulness affects children, adolescents and young adults: from parenting mindfully to understanding how mindfulness can be seen in teenagers' texting and driving habits. Research suggests that mindfulness in children serves as protection against anxiety and depression; may be useful for children with ADHD; and may help reduce aggression and hostility. Encouraging mindfulness in children will give them a head start on becoming mindful adults, and will allow them to enjoy the benefits of mindfulness sooner in life.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Lindberg, Jennifer | Valdes, Leslie | Psychology |

**The Effects of Riming and Aggregation on the Fall Velocities of Snowflakes**

This project aims to study how fast snowflakes fall according to their mass. The mass of a snowflake is dependent on its size, and on whether the flake has experienced any sort of riming by falling through super-cooled water droplets, or if two or more flakes have stuck together by collision (aggregation). There have been only a few studies on this subject, and the purpose of the current research is to add to the snowflake data pool and to better understand how exactly snowflakes grow and shrink after leaving the cloud. The study will be done using a disdrometer that is connected to a computer which records the number, size and velocity of flakes passing through every minute. The data is then downloaded to an Excel spreadsheet where it is analyzed according to the size, type, and velocity of each flake. The results will show if there is any difference in the fall velocities of flakes that are large, small, rimed, or aggregated.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Rother, Elizabeth | Kubesh, Rodney | Earth and Atmospheric Sciences |

**Psychology of Genocide**

We will examine how the personality of an individual affects groupthink. Groupthink is defined as the uniform decision-making process that occurs within a group of people because of the desire for conformity, as well as the fear of defying authority. We have selected four genocides, both well-known and not so well-known: The Holocaust, the Rwandan genocide, the genocide in Cambodia under the Khmer Rouge, and the genocide of the Vendee people in revolutionary France. The first part of our project is to identify characteristics of the leaders' personalities, using a psychological overview and the measures of the Briggs Myers personality test. Most of the data will come from the childhood and personal relationships of the leaders, how they reacted to certain situations, as well as the environment that possibly influenced their way of thinking. Once we have enough data we can search for patterns. We'll be working on the hypothesis that the leaders will form a cluster of similar personality traits. The reasoning behind this is that often times people in similar "careers" have very similar personalities. The second part of the project is to explore the connection between the psychology of a leader in a genocide and the tendency or nature of the groupthink in that particular genocide. By examining how the personality of an individual leader affects groupthink, we hope to realize a part of what goes through people's heads when an act of genocide is taking place. Understanding the psyche of the leaders and followers may bring us one step closer to the successful prevention of genocide.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Fitts, Carlos; Lyons, Alexandra; Johnson, Jared; Hemmesch, Scott; Murphy, Rebecca; Harstad, Brianna; Mulcrone, Rebecca; Hartzell, Kaitlyn; Hammad, Sarah | Julius, Matthew; Tabakin, Geoffrey | Biological Sciences, Human Relations and Multicultural Education |

**Honors Leadership Institute**

At St. Cloud State University, the Honors Program gives students the opportunity to expand their knowledge in a way that gives students an advantage looking for jobs or trying to get into graduate school, but something is missing. Leadership is a skill that not everyone has, and it is something that is important for future success in life. Because of this, the formation of the Honors Leadership Institute will create further opportunities for the advancement of students in the Honors Program at SCSU. We have studied other college programs that have formed leadership institutes, and seeing the success of these programs, we have developed one with similar goals and ideas. The mission of this program is to connect leadership learning and development to student success. This will be done through the development of core values; which include integrity, vulnerability, discernment, awareness of human spirit, courage in relationships, a sense of humor, predictability, breadth, comfort with ambiguity, presence, intellectual energy and curiosity, respect for the future, regard for the present, and understanding of the past. This will be done through grant funding, fundraising, and volunteering and will be taught through to use of reading material such as Leadership From the Inside Out by Kevin Cashman and From Good to Great by Jim Collins. We have molded a platform structure of everything the Honors Leadership Institute will have to offer. The opportunities that the Honors Leadership Institute will provide are advanced courses in leadership development, challenges that will test an individual's imperfections, conferences, speakers, national and global meetings, global networking, constructive projects, testing authenticity, and flourishing ideas of young amateurs and forthcoming entrepreneurs.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Hemmesch, Scott; Backes, Tiffany; Rothe, Jennifer | Eyo, Bassey | Communication Studies |

**On the Success of SCSU Students with High ACT Scores**

The goal of this project is to study the success patterns of students at Saint Cloud State University who had recorded high ACT scores before entering as first year students. SCSU does not attract many students with ACT scores of 30 or more. The students with such high ACT scores are not always successful here. If we can discover what factors are associated with the success or lack of success of these students, it is possible that interventions might be planned which can help these students succeed. This project will follow the persistence of these students semester-by-semester, and associate the persistence rate with independent variables such as high school GPA and high school class percentage. These variables are the most predictive of academic success at SCSU, so it is expected that the use of these same variables with the high ACT student population will allow us to predict the persistence probabilities for these students.

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| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Ilboudo, Patrick | Robinson, David | Statistics |

**Teaching Pausing for Optimum Transfer Outside of the Clinical Setting**

Childhood stuttering affects up to 5% of children and can be associated with negative long-term consequences such as school dropout, social isolation, and unemployment (Guitar, 2010). While stuttering treatment is effective (Guitar, 2010), the cost and time involvement is prohibitive, particularly for those of low socioeconomic status (e.g., new immigrants, rural and inner city families). Speech-Language Pathologists teach new speech skills to clients who stutter. Two key principles that influence how well a client who stutters can use new skills out in the real world are practice and feedback. This project examined which types of practice and feedback optimized learning and transfer (using new skills outside of the clinical setting) of a stuttering therapy technique called pausing. This project is unique because no previous research has focused on comparing the effectiveness of different speech therapy techniques to save time and

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Stolt, Brittany; Dahl, Elizabeth; Korman, Karlee | Smits-Bandstra, Sarah | Communication Sciences and Disorders |

**Effect of DDE on Insulitis Development and Insulin Expression in NOD Mouse Model of Type 1 Diabetes**

In Type I Diabetes (T1D), insulin-producing beta cells, which are located in the pancreatic islets of Langerhans, are destroyed in an autoimmune attack by T cells. Because of destruction of beta cells, insulin production significantly decreases and the blood sugar levels increases. The histologic lesion, called insulitis, is characterized by infiltration of T cells in islets. The severity of insulitis reflects the level of destruction of islets, and predicts the onset of diabetes. Insulitis can be observed in diabetic humans, as well as mice. The most common model for studying T1D is a NOD (non-obese diabetic) mouse model, which spontaneously develops T1D. Whereas the cause of T1D is largely unknown, genetics and environmental factors have been proposed to play a role. Several studies have found increased levels of the environmental pollutant, *p,p'-dichlorodiphenoldichloroethylene* (DDE), in the sera of patients affected with T1D. Therefore, it is hypothesized that DDE could trigger the development of T1D, and that mice treated with DDE will display higher level of insulits compared to control mice. Therefore, the insulitis levels will be studied in the pancreata of NOD mice treated with DDE. Eight-week-old NOD females have been injected with 25 and 50 mg/kg of DDE disolved in corn oil, while control group received vehicle only. After 20 weeks of treatment, pancreata will be removed, fixed in formalin, embedded in parrrafin, cut in 4 um sections and stained with *hematoxylin-eosin*. Insulitis will be graded according to this scale: level 0 – no cell infiltration; level 1 - presence of cells arround the islet; level 2 – less than 50% of the islet infiltrated; level 3 – more than 50% of islet infiltrated; and level 4: entire islet infiltrated. Insulitis data obtained from DDE-treated and control mice will be statistically analyzed.

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| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Turkowski, Kari; Elshikh, Amira; Geller, Karly; Rai, Arbin; De Silva, Samera; Hoganson, Jessica; Toft, Jamie | Cetkovic-Cvrlje, Marina | Biological Sciences |

**Bootlegging in Stearns County from 1920 to 1933**

Bootlegging is best defined as the illegal making, selling, and distribution of alcohol during prohibition. This paper examines the positive and negative effects of "bootlegging" in Stearns County, Minnesota between 1920 through 1933. Many aspects of bootlegging will be analyzed, including crime rates and areas where crime was notably prominent or absent, political and moral consequences, prostitution, gambling, racketeering, the ramifications of infamous crime leaders strongly associated with bootlegging, such as John Dillinger and Machine Gun Kelly, and economic pressures. Through the use of data collection, mapping and interviews, conclusions will be drawn to establish a better understanding of prohibition and bootlegging during the early twentieth century and the role it played in shaping Stearns County into what it is today.

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| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Roberts, Kristina | Torguson, Jeffrey | Geography, Planning and Community Development |

**Characterization of Leukocytes Involved in Pathogenesis of Type 1 Diabetes in NOD Mice Exposed to a Persistent Organic Pollutant**

Type 1 diabetes (T1D) is a lifelong autoimmune disease caused by the attack of the body's own immune system on insulin-releasing pancreatic beta cells, resulting in insufficient insulin levels. Currently it is unknown whether the development of T1D results from genetics, the environment, or a combination of the two. Some research has suggested a possible association between environmental pollutants and T1D. *Dichlorodiphenyldichloroethylene* (DDE), a toxicant with many known adverse health effects, may be related to T1D development, as indicated in other research. T1D, as an autoimmune disease, is induced by cells of the immune system; therefore, if DDE affects development of T1D, it should affect populations of an exposed organism's immune cells. To test this hypothesis, non-obese diabetic (NOD) mice (the best known mouse model of T1D) and C57BL/6J mice (a secondary model organism) were injected with DDE, and leukocyte (white blood cell) subpopulations were quantified via flow cytometry. Experimental protocol consisted of cell suspension preparation from spleens extracted from DDE-injected mice, addition of fluorochrome-antibody complexes that allow the flow cytometer to detect specific cell types, and quantification and identification of leukocyte subpopulations using flow cytometry. Results were compared against a control group of mice receiving injections with no DDE. Unexpectedly, when exposed to DDE, statistically significant decreases in cytotoxic T cell populations (which attack beta cells) and increases in regulatory T cell populations (which defend beta cells by maintaining appropriate T cell populations) were observed in NOD mice. However, in C57BL/6J mice, populations of cytotoxic T cells significantly increased. Our results indicate that DDE does affect immune cell populations and might play a role in T1D development, although this association varies with species, concentration, and level of exposure.

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

| **Student Presenter(s):** | **Sponsor(s):** | **Department(s)** |
|---|---|---|
| Scott, Andrew; Schindler, Broc; Scott, Alex; O'Brien, Haley; Prigge, Christopher; Hansen, Sarah | Cetkovic-Cvrlje, Marina | Biological Sciences |

**Gelatin Holography with Ferric Ammonium Citrate**

Traditionally, undergraduate laboratory holography experiments often use gelatin film with *dichromate* (*dichromated gelatin* or DCG). Unfortunately, DCG is carcinogenic and highly toxic. An alternative sensitizer, ammonium ferric citrate (AFC), is a non-toxic food additive. The processing of AFC for holography has not been thoroughly described in the literature. This work is an effort to optimize the emulsion, exposure and development processes for AFC holograms. A variety of techniques are applied to this end, including optical microscopy, UV-Vis spectroscopy, and FTIR spectroscopy. Film thickness is estimated from spectroscopic interference in both UV-Vis and FTIR modes. Results map out the regions of maximum diffraction efficiency for the development of a practical non-toxic laboratory holography process.

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

| **Student Presenter(s):** | **Sponsor(s):** | **Department(s)** |
|---|---|---|
| Hislop, Travis | Sinko, John | Physics and Astronomy |

**Riluzole Reverses the Effects of Chemoconvulsants Acting on Glutamatergic Neurotransmission in Planaria**

Planarians, the non-parasitic flatworms, display dose-dependent, distinct (C-like and corkscrew-like) seizure-like hyperkinesias upon exposure to 0.001-10 mM aqueous solutions of glutamatergic agonists (L-glutamate and N-methyl-D-aspartate (NMDA)) and a glutamate decarbaoxylase (GAD) inhibitor, semicarbazide (0.001-5 mM). Riluzole, a supplemental antiepileptic drug (AED), attenuated glutamate, NMDA, and semicarbazide-induced planarian seizure-like activity (pSLA) in a concentration-dependent manner. Planarian seizure-like behavioral counting experiments revealed that riluzole (0.001 to 1 mM) displayed no significant behavioral activity by itself, but attenuated hyperkinesias elicited by the three drugs targeting the glutamatergic neurotransmission with the following order of potency (IC50): L-glutamate (0.027 mM> NMDA (0.14 mM)> semicarbazide (7.8 mM). The results provide pharmacological evidence for the presence of glutamatergic receptor-like proteins and semicarbazide sensitive functional GAD enzyme in planaria in addition to demonstrating anti-glutamatergic mechanisms of riluzole in an invertebrate model. We also carried out high performance liquid chromatography coupled with fluorescence detection (HPLC-F) analysis on the planarian extracts post treatment with 3 mM semicarbazide or a combination of 3 mM semicarbazide and 0.1 mM riluzole and compared the concentrations of glutamate and GABA in these two experimental groups with a control group of planarians which received no drug treatment. The significant findings such as semicarbazide-induced 35% decrease in the GABA levels and a 31% increase in the [glutamate]/[GABA], and riluzole-induced 42% decrease in glutamate levels with respect to the control group indicate that the planarians can be used as simple in-vivo and in-vitro model organisms for investigating the molecular mechanism of small molecular drugs.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Fettig, Samantha | Ramakrishnan, Latha | Chemistry |

**Offshore Drilling**

This research poster explores the environmental impacts of offshore drilling in the Gulf of Mexico. Offshore drilling for oil effects the aquatic marine life and pollutes the gulf waters.

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| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Kpaahkpai, Nathaniel | Lindstrom, Sheila | Sociology and Anthropology |

**The Scenery of Urban Sprawl**

In the past century, American commerce has changed from being centered around heavily foot-trafficked small business-oriented downtown areas, to vast seas of parking lots filled with the consumer ends of large corporations. Saint Cloud, unfortunately, is a fitting example. As soon as you cross Cooper Avenue heading westbound on Division Street, you no longer see unique landmarks, culture and character, but rather the exact same set of buildings and signage found in Omaha, Neb., Des Moines, Iowa, Rockford, Ill., and everywhere else across the Midwest. I've been to all of those places before, and I find this scenery disturbing because this is my hometown, and most of my friends and family are right here. I love living in Saint Cloud, and I've considered starting a family here, in the (distant) future. I need to find out big-picture problems associated with urban sprawl, from the environmental impacts, to the sociological and even psychological consequences. I believe this is an issue little light is shed upon because we were raised to accept that this is just what society is supposed to look like, and it's hard to take a step back for a birds-eye-view. I will do research to discover and trace the landscape of Saint Cloud over time, from the settlers to 2013, and the changes which have taken place. I will also do fieldwork, making observations and conducting experiments to uncover the effects of our city's vast, nearly three mile long stretch of spacious, commercial urban sprawl, focusing mainly on the businesses located on, or right off of Division Street on the west side. Saint Cloud is filled with friendly people who only want the best for their families and neighbors, and my goal here is just to find some ways to improve our quality of life.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Lauer, Michael | Lindstrom, Sheila | Sociology and Anthropology |

**The Great Lakes and Invasive Species**

In the Great Lakes, the lamprey has decimated the commercial fishing industry by causing a collapse of native lake trout populations. This poster presentation will explore the effects of invasive species on our Great Lakes with a focus on the lamprey. What is being done to control the non-native species and to protect the waters from further invasions?

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Pilarski, Krista; Czech, Matt | Lindstrom, Sheila | Sociology and Anthropology |

**Global Connection: St. Cloud State University as a Primary Destination for Nepalese International Students**

This research investigates the deciding factors for international students from Nepal to enroll at St. Cloud State University. St. Cloud State University has one of the highest populations of international students from Nepal (among American universities), so I focused on the reasons why they choose St. Cloud State University instead of other colleges. I used a few interviews and an open ended survey on Nepalese students at St. Cloud State to understand the reasons, such as tuition and relatives already in the area.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Prasomsack, Aektono | Torguson, Jeffrey; Blinnikov, Mikhail | Geography, Planning and Community Development, Global Studies |

**Forests**

My student research project will be about deforestation and the loss of trees affecting our everyday environment and society. My project will be completed and presented on a tri-fold poster board, loaded with facts, statistics, pictures and other necessities in informing an audience about deforestation. We care about this because trees help us in our everyday lives, whether we consciously know it or not. I will be filling readers and spectators in on how our environment gives us benefit in multiple ways. I will begin with research upon research on the topic using materials like magazines, books, journals, etc. Also included in my piece will be pictures and several eye attractions that allow for easy and knowledgeable read. It will be very important to take from project what you can do to keep the earth clean and livable for our societies.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Heiber, Rachel | Lindstrom, Sheila | Sociology and Anthropology |

**Speech Planning in Persons with Parkinson's Disease: An Evoked Response Potential Study**

The purpose of this study was to investigate the timing and integrity of neurological processes underlying improvements in speech production over practice in persons with Parkinson’s disease (PD). The Bereitschaftspotential (BP) was used to compare the brain waves corresponding to the planning of speech in 13 persons with PD (on medication) and 14 matched control participants using a syllable reaction time task. Specifically, differences between the groups in the area and latency of BP over practice were investigated. Results indicated persons with PD have increased negative BP area during early practice blocks and increased BP latency during late practice blocks as compared to matched controls. These results indicate a general learning impairment for persons with PD during the early phase of learning for speech related tasks, however, with time, this difference appears to diminish. The increased onset of BP latency of persons with PD coincided with improvements in speech reaction time performances during the late practice trials. Neurological processes underlying the anticipatory planning of speech tasks appear to effectively compensate for delays present during the early phase of learning. These findings may have implications regarding how to improve the speech of people with Parkinson’s disease through the use of neuro-rehabilitation services.

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

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

**Counseling Young Adults on the Autism Spectrum Using Narrative Therapy**

Autism Spectrum Disorders (ASD) is defined by impairments in social skills, communication, and restricted and repetitive behaviors and interests. However, the disorder is complicated by many other factors and is often accompanied by other conditions, including depression and anxiety. This information should not be ignored and individuals with ASD can benefit from structured therapy that is targeted at treating conditions such as depression. Narrative Therapy provides this structure. Using psychotherapeutic principles, the goal of Narrative Therapy is to carefully examine a problem in order to replace dysfunctional images with more positive self-concept. Research on Narrative Therapy suggests the approach has been successfully applied individuals with communication disorders, with few case studies suggesting benefits for individuals with ASD. The purpose of our current project was to examine the effectiveness of Narrative Therapy with young adults with ASD in a social communication group. To achieve this purpose, we examined the results of pre- and post-Narrative Therapy measures for three young men with ASD. Measures included answering questions in a Likert scale format addressing their self-awareness of communication skills, locus of control, and quality of life. Narrative Therapy consisted of six sessions which included modeling and assisting with 1) identification and externalization of a problem, 2) investigation of the effects of the problem on one's life, and 3) examination of how to take control of the problem. Using statistical analysis, no significant differences were found between pre- and post-intervention measures. The comparison of measures in each skill area resulted in steady performance or slight gains. Although not statistically significant, a 5-10% gain in a skill area for an individual may be clinically significant. All participants stated that they enjoyed the experience and would be willing to participate in Narrative Therapy again. Results suggest that more research is needed using better controlled and more frequent measures.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Holman, Whitney; Carpenter, Mary; Peichel, Patricia | Nelson Crowell, Rebecca; Gilbertson, Amy | Communication Sciences and Disorders |

**Clean Water Access in Somalia**

What if your greatest chances of getting water is only 50/50. What if you walked for miles for water to find that you can only take one gallon container full. Water is what every life wants and without it no life would exist. In Somalia many people do not have access to water that is safe and clean water.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Yusuf, Habibo | Lindstrom, Sheila | Sociology and Anthropology |

**Looking Good at a Cost**

In this poster presentation, hair salons are under the microscope. I will look at the environmental impact of beauty products. This research explores the effects of beauty and hair products that are discarded as waste and those that are being washed down the drain.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Honnold, Kistyn | Lindstrom, Sheila | Sociology and Anthropology |

**Minorities in Aviation**

Ever wonder how different minorities are treated in their occupations? This project will focus on the minorities in aviation with a focus on women. We will also compare and contrast our own experience of first-hand flight and take details from one particular person in aviation

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Pucel, Brendan | Olson, Angela | Aviation |

**On the Graduation Rates of Students in Developmental Math**

From review of summary statistics concerning graduation rates at SCSU, it was noticed that students who at some point enrolled in MATH 070 (Development Math) graduated at a higher rate than students who never enrolled in MATH 070. This surprising result prompted this research project. The goal is to understand why this occurs, by breaking these two groups of students into subgroups and looking at graduation rates within each subgroup. Specifically we considered MATH 070, MATH 072, MATH 193, MATH 196 and STAT 193, as well as scores on the ACT Math exam and DTMS 0161 (the old math placement exam). We also considered students' high school GPA and high school class percentage. We analyzed the data provided by the university from Fall 2001 to Spring 2006 for New Entering Freshmen (NEF) and New Entering Transfer (NET) students. The student names and ID numbers were not included in the data set, to ensure privacy. We created two-way tables and used descriptive statistics to compare the graduation rates of students who attempted the developmental courses MATH 070 and MATH 072. With these results we will be able to know under what conditions it is true that students who attempt these developmental courses graduate at a higher rate than students who don't attempt the courses. Also we will be able to see how high school GPA and high school class percentage are related to students' graduation rates, and how these relationships impact the graduation rates under study.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Erickson, Rikki | Robinson, David | Statistics |

**Investigation of Low Temperature Hole Mobilities in Tetracene Single Organic Crystals by Time of Flight**

Organic semiconductors are rapidly becoming popular in electronic devices since they can become large and flexible. Tetracene is being investigated due to the high hole mobility. High purity tetracene single crystals were grown by sublimation and physical vapor deposition under an inert atmosphere. Samples were prepared by sputtering silver contacts on either side of the crystal. Bulk Time of Flight (TOF) measures drift velocity of charge carriers in an applied electric field across the single crystal. Charge carriers were generated by short (1 ns) nitrogen laser pulse and charge mobility can be measured from the current produced. Areas being investigated are the effects of low temperature on mobility such as any trap states or molecular packing transitions.

**Presentation Index:** G-B 52 **Present Time:** 2:00 PM

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Voeller, Keith | Lidberg, Russell | Physics and Astronomy |

**On the Development of an Algorithm for Awarding Scholarships**

In order to improve the overall quality of the student body at SCSU, it is important to offer scholarships to the most talented students, in terms of their academic skills. The objective of this project is to develop an algorithm for awarding scholarships for students applying to SCSU as first-year students (New Entering Freshmen, NEF). The data for this project has been provided by the Institutional Research Office of Saint Cloud State University. I am using the NEF students admitted or enrolled in the university from Fall 2006 to Spring 2011, which is 12,529 students. Most of the data analysis is done in Microsoft Excel and JMP to generate graphical representation of the data. My independent variables are the high school GPA, high school class percentage, composite ACT score. These will be used to generate predicted quality points for the first two semesters at SCSU. The cumulative quality points after two semesters is found by multiplying the cumulative GPA with the cumulative attempted credits for the first two semesters. In order to account for missing data, I created dummy variables for independent variables that allow me to use all students even if some have missing ACT scores or high school GPA or high school class percentage. I am also using information on which students received scholarship offers from SCSU, and whether or not they enrolled here. The goal of the research is to use the predicted quality points to choose which students should receive scholarship offers. It is anticipated that this work may benefit the Admissions Office at SCSU in future years when they award scholarships to student applicants.

**Presentation Index:** G-B 53 **Present Time:** 2:00 PM

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Koh, Pei Yoong | Robinson, David | Statistics |

**On the Relationship of ACT Reading Scores and Accuplacer Scores**

With the large number of students applying to SCSU every year, it would be useful to find correlations between the different aspects of the application. Any relationships that were found could be used to predict a potential student's successfulness before they even attend the university. In particular, the university must often assess the reading readiness of a student based on ACT scores and/or Accuplacer placement scores. The relationship of these variables to each other is of particular interest, because Accuplacer testing is dependent on what ACT score a student has achieved. Our data comes from applications for new first-year and transfer students that were submitted from the fall of 2006 to the spring of 2012. There were a total of 62,957 applications in the data set. In order to ensure confidentiality, the student identification numbers for all of the applicants were omitted from the data set before analysis took place. The variables that were used in this analysis included scores from ACT Reading, ACT English, Accuplacer Sentence Skills, and Accuplacer Reading, as well as high school grade point average, and high school percentage. Using a statistical package called JMP Pro, several regression analyses were performed along with logistic regression analyses, and partitions. These procedures were used to determine if there were any relationships between the previous variables. Using our results, the Admissions Office can use ACT results to determine proper placement testing (Accuplacers), as well as using Accuplacer to predict the two ACT scores. Finally we will be able to relate High School GPA and Percentage to the different ACT and Accuplacer scores.

**Presentation Index:** G-B 54 **Present Time:** 2:00 PM

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Grave, Rachel | Robinson, David | Statistics |

**Determination of Ibuprofen in Waste Water by Means of Single Drop Micro Extraction Coupled with Gas Chromatography/Mass Specrometer**

Ibuprofen is a commonly used drug by many people. Due to its wide use, there may be unusual amounts of it within drinking water from people flushing expired ibuprofen or excreting ibuprofen that the body has not utilized. Single-drop micro extraction (SDME) was used to collect low concentrations of Ibuprofen from water samples. Both manual and automated SDME was performed. Octane with Dodecane as an internal standard was used as the solvents to extract the Ibuprofen from the water samples. A drop size of 0.75µl and a stir rate of 300 rotations per minute were used for all of the SDME trials. The drop from the extraction was then analyzed with gas chromatography and mass spectrometry. The concentration of ibuprofen was determined from the gas chromatography results, and the mass spectrometry was used to identify the ibuprofen peak. SDME trials for different concentration of ibuprofen in water were done to develop a calibration curve that plotted the peak area ratio of the Ibuprofen and Dodecane against the concentration of ibuprofen. This calibration curve was used to determine the concentration of unknown samples of ibuprofen in water. Ibuprofen concentrations as low as 10 parts per million were extracted from the water samples using the SDME.

**Presentation Index:** G-B 55 **Present Time:** 2:00 PM

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Lakings, Ross | Jeannot, Michael | Chemistry |

**Green Manufacturing and Renewable Energy in Small Businesses**

Green manufacturing is becoming a popular trend in the business environment (Survey Reveled 2010). Owners are finding that more consumers are supporting and investing in businesses that are implementing green manufacturing and sustainability practices. Many large companies have properly implemented it, but there's a high initial capital investment that small companies usually do not have to implement these practices. This library study of current literature, shows what practices can be implemented by small companies with a low initial investment to improve customer loyalty and profitability. Through this study, this paper has analyzed multiple businesses on their green practices to show how it can be implemented in small business.

**Presentation Index:** G-B 56 **Present Time:** 2:00 PM

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Fiedler, Shawn; Lenz, Joseph; Dillon, Jeffrey | Polacco, Alexander | Management |

**Comparison Between General American English Pronunciation and Korean English Pronunciation**

I want to distinguish differences between General American English pronunciation and Korean English pronunciation. Between American English and Korean English, there are dissimilarities. First, I will define what sounds are difficult for Koreans to pronounce. Second, I will explain grammatical differences between English and Korean. Lastly I will define why pronouncing English is hard for Koreans. I will also define differences about pronunciation between English and Korean.

**Presentation Index:** G-B 57 **Present Time:** 2:00 PM

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Park, Kyeongjong | Koffi, Ettien | English |

**Green Logistics**

Green efforts apply throughout the internal and external supply chain, programs involving the supply chain can be both forwards integrated as well as backwards integrated. This paper examines new trends in green and sustainable logistics. Green efforts have become a main focus for industries around the globe, which is mainly because of the consumers needs for environmental sustainability. In order for firms in industries to compete competitively, they must take on projects that will lessen or eliminate their carbon footprint. For this paper, we will be looking at what firms are currently doing with projects in green logistics. This study will consist of library research, as well as direct interviews with local companies in Saint Cloud, Minnesota.

**Presentation Index:** G-B 58 **Present Time:** 2:00 PM

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Saxton, Jeffery; Meissner, Tanner; Pufpaff, Adrian | Polacco, Alexander | Management |

**Attitude Towards the 2012 Minnesota Wolf Hunt**

The 2012 Minnesota wolf hunt has been a very controversial topic in the past year. In this paper I will try to assess the overall attitude towards the 2012 Minnesota wolf hunt. To determine this I will administer a questionnaire with a Likert-type scale. I believe that location will have a significant effect on peoples attitude towards the Minnesota wolf hunt. This research can help determine how the Department of Natural Resources (DNR) proceeds with possible future hunts. It could help how they portray wolf hunts in the future, or could help them change the hunting regulations to give it a more positive image with the public.

**Presentation Index:** G-B 59 **Present Time:** 2:00 PM

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Piersak, Matthew | Torguson, Jeffrey | Geography, Planning and Community Development |

**Periodic Table**

Periodic trends can be tough for chemistry students to conceptually understand. Currently there is little research on the misconceptions of periodic trends, but of the research done most shows that most students tend to memorize the trends and cannot explain the reasoning behind them. This study investigates subjects' conceptual understanding of the periodic trends as it relates to additional chemistry coursework. A paper and pencil survey was the method of data collection, with multiple questions showing the trend and explaining conceptually why the trend happens. An analysis of the survey provided an insight into the misconceptions of periodic trends with additional chemistry course work. Recommendations regarding teaching strategies to help build a conceptual understanding for trends instead of students memorizing the trends will be presented.

**Presentation Index:** G-B 60 **Present Time:** 2:00 PM

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Beehler, Kevin | Krystyniak, Rebecca | Chemistry |

**High Potentials-Employee Assessment Tools**

For this project we interviewed a Human Resources Administrator and developed a job description and employee selection tools. We created interview questions, job ads, applications forms and researched what tests we would use. This project took a lot of research and time to be fully developed and job analysis methods were used for the project.

**Presentation Index:** G-B 61 **Present Time:** 2:00 PM

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| McIntyre, Jennifer; Sivigny, Allison | Davis, Elaine | Management |

**Mindfulness in Children**

Mindfulness is a state of mind in which we are openly engaged in the present and noticing new things. This includes being open minded and non-defensive when experiencing things. Children actively engage in things different then adults do which are where we see the difference in mindfulness. Children have an easier time accepting new things and being present new ideas then most adults who have already have certain view points on different ideas. Mindfulness is a growing field it is being used in schools, psychological practices, and parenting. Many psychologists teach mindfulness as a coping technique for stress and anxiety. It is also being used in cognitive therapy. Mindfulness is being brought into schools as a way to help students regulate their emotions, decrease anxiety about test, and increase attention skills. Parents are using mindfulness as a way to better connect with their children. They do this by actively listening to their children, being nonjudgmental in their parenting, and being emotionally aware when parenting. Using mindfulness with children is a growing practice.

**Presentation Index:** G-B 63 **Present Time:** 2:00 PM

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Neuman, Cassandra | Valdes, Leslie | Psychology |

**Examination of Minnesota Diphthongs**

Vowels are an interesting topic for linguists to study because of the wide variation of production. Individuals produce vowels different from one another, allowing for accents to emerge and intelligibility problems to occur. The English language has 12 vowels and 3 diphthongs, with the diphthongs lacking of much supported research compared to the later. This study will aid in furthering research that could benefit further studies. This study will include the research of Diphthongs in order to determine frequency, length, and placement of articulation amongst a sample of people in order to determine if a pattern emerges. Samples of particular words will be taken by the participants to be analyzed using the Praat program, and then used to produce a normalization graph. This information will then allow for further analysis to identify emerging patterns. By completing this research we will learn more about this samples pronunciation and production of sounds, identified as groups' tendencies, and possibly address intelligibility problems. Results of this research will help fill an information gap in phonetics and in a broader context, this research could have implications for voice recognition software.

**Presentation Index:** G-B 64 **Present Time:** 2:00 PM

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Hamberg, Autumn; Zenzen, Matthew | Koffi, Ettien | English |

**Negative VOT**

The project I put together is about negative VOT in the production of English words by people from Montenegro. The research is supposed to show whether the phenomenon is linked to their mother tongue and how they produce consonants in their native language, as well as determining if negative VOT is a characteristic of Montenegrins learning English as a second language. I recorded three native Montenegrin speakers to produce a couple of English words, and, as it turns out, the negative VOT shows up before certain consonants in the production of all words, by all three people. I have tried to determine which consonants are more inclined to have negative VOT show up before them, and I tried analyzing the connection between Montenegrin and English consonants and their production, and the way the two of them could affect each other. My main goal was to find out if negative VOT has anything to do with the way Montenegrin consonants are produced, as well as how much Montenegrin affects learning English.

**Presentation Index:** G-B 65 **Present Time:** 2:00 PM

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Abat, Martina | Koffi, Ettien | English |

**Struggle of Assmilation in Somali Community; Assimilate or Maintain Ethnic Identity**

Saint Cloud has one of the largest numbers of Somali populations in Minnesota. The Somali community in Saint Cloud is growing faster than any other immigrant group. This fast growing population is contributing to the socio-economic aspect of the city. My project focuses on the difficulties Somali community members face in the Saint Cloud area. In my research I interviewed students at Saint Cloud State University and the Somali community to understand why Somalis chose the city of Saint Cloud for residency. I also investigated issues regarding cultural adaptation and the problems of assimilation into Saint Cloud community.

**Presentation Index:** G-B 66 **Present Time:** 2:00 PM

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Mekuria, Tedi | Blinnikov, Mikhail; Butenhoff, Linda | Political Science, Global Studies |

**Sulfide Mining in Minnesota**

In recent history sulfide mining has become a major issue in the northeast region of Minnesota, specifically near the Boundary Waters Canoe Area (BWCA). Mining exploration companies, such as Duluth Metals and Polymet, are being funded to open mining operations near the edge of the BWCA wilderness. This has become a major science, technological, and social issue due to the prospected location and mining techniques that are being used to extract precious metals. Secondary problems such as, jobs in the area are needed to help support local economies, royalties from mining companies can bring much needed revenue to the state. Unforeseen problems can be expensive, and landowners being forced to cooperate if they do not own the mineral rights to their land, are dividing local residents and the state legislature.

**Presentation Index:** G-B 67 **Present Time:** 2:00 PM

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Wollum, Bradley | Hoff, Jean | Earth and Atmospheric Sciences |

**Modulation of Estrogenic Exposure Effects Mediated through Dietary and Temperature Regimens in Male Fathead Minnows**

The effluent water given off by wastewater treatment facilities contains a variety of compounds that may have effects on endocrine function in vertebrates. Synthetic estrone is a common and potentially problematic compound that falls into this category. To simulate the effects of estrogenic exposure in the wild, we exposed 454 male fathead minnows to high (100 ng/L) and low (15 ng/L) concentrations of estradiol for a period of 21 days. Half of the minnows were kept at low temperatures (18°C) and half were kept at a higher temperature (26°C). Furthermore, each temperature group was then divided in half, with one group of minnows receiving a restricted diet, and the other being fed ad libitum. These parameters allow us to mimic the effects of warmer global water temperatures and diet restrictions in a wild fish population. At the end of the 21-day exposure, each fish was measured (mm), weighed (g), and analyzed for secondary sex characteristics. Blood sugar (mg/dL), liver weight (g), weight of testis (g), blood hematocrit percentage, body condition factor (g/mm3), gonadosomatic index, hepatosomatic index, vitellogenin concentration (µg/mL), cortisol concentration (µg/mL), and histological sex were also determined to measure the effects of exposure. Ultimately, this data will give rise to conclusions about the necessity of adequate waste management, and how it impacts the fragile balance of fish species in aquatic ecosystems. It will also show the unique, developmental ramifications exerted on each individual specimen.

**Presentation Index:** G-B 68 **Present Time:** 2:00 PM

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Feifarek, David | Schoenfuss, Heiko | Biological Sciences |

**Is Organic Food Really Healthier?**

The purpose of this project is to determine the health benefits of organic and non-organic foods, and compare the differences. We hope to inform the audience about the best option if there is a difference, and give examples from the research found. We think health is very important so we would like to educate others about the healthiest choice since it can be hard to maintain a healthy diet in America.

**Presentation Index:** G-B 69 **Present Time:** 2:00 PM

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Stomberg, Ashley; Erpelding, Maren | Lindstrom, Sheila | Sociology and Anthropology |

**Rationale for Neither Agreeing nor Disagreeing: Person and Item Contributors**

We examine the intentions behind middle category endorsement, and identify person and item antecedents to these intentions through verbal explanations of responses. Candidate item and person antecedents indicate that middle category endorsement intentions are more closely attributable to item versus respondent characteristics.

**Presentation Index:** G-B 70 **Present Time:** 2:00 PM

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Weber, Amanda; Roebke, Mark | Kulas, John | Psychology |

**Session H-GN** **Cultural and Social Influences on Behavior and Self Expression** **Glacier North**

**Social Experiences of African Immigrant Women in St. Cloud, Minnesota**

As an international student, coming to the United States was not an easy decision and when I arrived, I had to adjust to a way of life that was totally different from what I was used to. Through my interaction with various people in St. Cloud, I got to meet women who were going through similar struggles. I saw and heard some of their experiences here, and I wanted to understand what they were going through, and perhaps help them and/or learn from them, but most importantly help other women who will come to St. Cloud in the future. This research is intended to help current African women immigrants and future women who will settle in St. Cloud. This was a qualitative exploratory study that used in-depth interviews as the key method of data collection and a total of five interviews were conducted with African women who reside in St. Cloud. These included women in the community and students at various institutions in the area, and I used purposeful sampling through personal contacts. These women came from the Eastern, Western, and Central parts of Africa. The results of the study show that African immigrant women move to the United States and especially to St. Cloud, MN for various reasons that range from escaping from conflict in their home countries to pursuit of higher education. As a result of these unique circumstances, their experiences in St. Cloud differed greatly. Cultural differences and language, availability of housing, jobs, and education are some of the key issues that these women faced in this new environment. Through my research, I was able to identify important resources that have helped them in their transition, and also identified the resources that the city of St. Cloud could provide for these women.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Maina, Naomi | Mwangi, Mumbi | Women''s Studies |

**The Influence of Islamic Textiles on Matisse**

Henri Matisse is considered to be a great innovator and credited for significant developments in painting as a modernist artist. His incorporation of decoration into his painting is considered one of the most significant aspects of his innovation, but was his sense and understanding of decoration a result of a singular genius that led him to this groundbreaking concept in art? Was it innovation per-say? I believe not, it is my opinion that Matisse's sense of decoration was directly the result of his experience with Islamic art, and more specifically Islamic textiles. That his innovations concerning decoration were the implementation of already conceived ideas within Islamic textiles, into European painting.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Imady, Essma | Leung, Godfrey | Art |

**What Men Do Not Know: They Can Get Breast Cancer (part II)**

The goals of this project are to determine the current level of awareness and knowledge of men about breast cancer, to increase public health awareness concerning the existence and severity of the issue of male breast cancer, and to educate men of the steps necessary in detection and prevention in advance. This project may provide a significant insight that can help to improve men's knowledge of the disease in order to increase the efficiency of current public education efforts. To do this, a literature review and an exploratory survey of Male Breast Cancer (MBC) issues will be conducted to find current information. Males (n = 75) with different backgrounds and levels of knowledge will be asked to complete a short survey questionnaire on MBC. The results will be recorded and analyzed to show different level of men's awareness and knowledge of the disease in different ethnic and age groups. The survey conclusion is that MBC is a hidden public health issue that must be addressed in order to improve the general health and quality of life for thousands of American men. It is important to help men to be aware of the existence of the disease and to realize how dramatically breast cancer can possibly affect their health in general. Increases in self-awareness combined with early prevention are the most powerful strategies to combat male breast cancer.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Nguyen, Nhan | Antunez, Hector; Melcher, Joseph | Kinesiology, Health and Physical Education, Psychology |

**Perceptions of Principals About Their Roles, Capacities and Difficulties in Implementing Decentralization Reform in Albania**

Decentralization is not a new phenomenon in education policy. Its types and degrees, as well as its outcomes have evolved along with the leadership paradigms across time and space. Related literature provides assessments of the decentralization processes, outcomes, conditions, types and shifts as well as the role(s) and the capacities of educational leaders worldwide. It also indicates the importance of considering the contexts in introducing, implementing and assessing the reform. Moreover, research highlights principals as agents of stability and agents of change in any restructuring attempt within the education system that operate in contexts of constant changes in the internal and external environment. In addition, researchers also pinpoint that these new roles and responsibilities place new demands for capacities in school leaders, requiring them to acquire new knowledge, skills and expertise. This study needs to be conducted because there is a gap in the knowledge base regarding the efficiency and effectiveness of the decentralization reform in the Albanian education system. As a result, the purpose of this study will be to explore the perceptions of the principals about their role(s), capacities and difficulties in implementing the decentralization reform in the Albanian education system from 2008 until 2013. The researcher will collect data through interviews with 45 principals on the research question: What are the principals' perceptions of their role(s), capacities and barriers in implementing the decentralization reform at the school district of Pogradec, Albania from 2008 until 2013? This study is significant because it will provide an understanding of the successes and issues of the decentralization reform in the Albanian education system. It will also indicate venues for adjustments and alignments of goals and activities, identifying and narrowing the gaps, detecting and mitigating the unexpected (negative) consequences, as well as improving the overall outcomes of the reform.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Jesku, Eralda | Eller, John | Educational Leadership and Higher Education |

**Session H-VN** **Improving and Preserving Systems** **Voyageurs North**

**Effects of Compound of Emergent Concerns on Larval Fathead Minnow Swimming Behavior**

Compounds of emergent concerns are part of the family of chemicals that are being studied due the concern of their effect on the species of our biodiversity. In this study, we are evaluating the outcome of the exposure of Estradiol on the swimming behavior of larval fathead minnows. Data was collected by exposing male fathead minnows to a concentration of Estradiol once a day for 21 consecutive days and as a good experimental practice required, we also had a control group. Ensuring that exposure, we subjected both our control and exposed larvae to three different environmental conditions. During the first experimental condition, the larvae were allowed to swim freely in a wide mouth container with 2 cm squares diagrammed at the bottom of it. We determined the swimming behavior, by recording the number of squares the larvae crossed in the container. The second experimental condition was similar to the first one except that the center of the container had a plant. The third experimental condition involved the use of the same container without the plant, but we subjected the larvae to an alarm pheromone with the purpose of understanding their response to predation and danger. The quality of the three experimental conditions were emphasized as we calculated the distance of each fathead minnow from each other and from the center of the diagrammed container in an attempt to determine if exposure of Estradiol affected their group behavior.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Azo, Loris | Schoenfuss, Heiko | Biological Sciences |

**Design and Analysis of Grain Ship Unloaders**

Christianson Systems is a company located in Blomkest, Minnesota that manufacturers ship unloaders and pneumatic conveying systems for a wide range of bulk materials. Historically, Christianson Systems offered a 'Super Portable' model ship unloader which was lifted onto a ship from the ships own crane where it would remove the loaded grain by a pneumatic vacuum. However, recent changes in the shipping industry have now banned some ships from using their own cranes to rig shipping port equipment. The objective of this project was to design a movable structure which would support Christianson System's 'Super Portable' model along with a 35 metric ton hopper alongside the ship where a non-intrusive movable boom would reach onto the ship and remove the bulk material. The scope of work for this project was to design and analyze a structure which would mount to Christianson System's already designed drive system and support their machinery which would rest on top of the structure. The final design needed to be modular in order to be shipped overseas and assembled without the need of a welder. The design of the structure was completed using the three dimensional modeling software, Solidworks. The stress and force analysis of the structure was completed using various engineering principles which ensured an adequate safety factor was established throughout the entire design. The outcome of the design was a 30 ft. wide by 20 ft. long I-beam structure which stands over 50 ft. tall.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Schaefer, Joshua; Vossen, Lucas; Loxtercamp, Nicholas | Bekkala, Andrew | Mechanical and Manufacturing Engineering |

**Implementing a Lean Process at Suburban Manufacturing**

Mechanical Engineers from a senior design team analyze current manufacturing processes at Suburban Manufacturing in Monticello MN, and find more efficient ways to save time and money producing parts, reduce scrap material and other wastes, and find better solutions through job streamlining. The senior design team will give insight into approaching lean manufacturing and the steps they used when applying it at Suburban.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Redepenning, Timothy; Wojchouski, Devin; Olding, Matthew | Bekkala, Andrew | Mechanical and Manufacturing Engineering |

**Ambiguous Liaisons, Oil Politics, and Indigenous Survival in the Amazon**

The purpose of this project is to emphasize the importance of actively developing literacy in Spanish while studying "content area" subjects, such as the anthropology of Latin America (ANTH311). Although practicing oral Spanish would be unreasonable here, habitual use of relevant Spanish-language resources (YouTube and BBC Mundo) can drastically increase comprehension, both culturally and linguistically. To accurately grasp our rapidly globalizing world, it is crucial to develop active study habits that simultaneously engage context and language. By overcoming the artificial boundaries between English-only and Spanish-only classes and challenging the rigid monolingual mindset underlying them (pure English, puro espanol), one gains more authentic access to contemporary settings. In this project, to encourage a more multilingual approach, I demonstrate how online study combines language and content learning into a dynamic whole. The trio of YouTube films (peliculas) I chose unpack indigenous social development issues in Peru from the inside out, challenging me to interpret the action from a multiplicity of "native" perspectives. By tracing the complex intertextual links suggested by allusions to recognizable "literary texts," I immersed myself in a web of intricately-connected-yet-conflicting values. To interpret these, I googled and WordReferenced these "named texts," locating related YouTube and PDF documents and reading these against their ironic applications in the films themselves. Gradually, a vivid "insider" framework emerged (where popular culture unlocked history, and this history in turn informed my journey through contemporary media). Focusing on the most informal grassroots/indigenous film of my trio, El Perro Del Hortelano, I review insights from a 17th-century comic romance by de Vega, Galeano's book "Open Veins," news clips of Chavez and Obama, and related films such as Peter Pan, Memoria del Saqueo, Tambien la Ullvia, and Cementerio de los Elefantes. By merging all these in multilingual space, language and content reinforce each other in powerful ways.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Fonken, Gael | Lavenda, Robert | Sociology and Anthropology |

**Session H-VS** | **Information Systems** | **Voyageurs South**

**Vivid-Pass: A Dual Layer Authentication Method With Custom-Made Security Features**

Single-factor authentication, when used as the only control mechanism, is not adequate for high-risk authentication processes. Financial institutions offering internet-based products and services to their customers for example should use more effective methods to authenticate the identity of customers using those products and services. Moreover, the authentication techniques employed by the financial institution should be appropriate to the risks associated with those products and services. Furthermore, account fraud and identity theft are frequently the result of single-factor (e.g., ID/password) authentication exploitation. Where risk assessments indicate that the use of single-factor authentication is inadequate, financial institutions should implement multifactor authentication, layered security, or other controls reasonably calculated to mitigate those risks. Last but not least, as users are becoming increasingly roaming and mobile nowadays, password authentication independence of the supporting infrastructure makes it even more essential and demands a more secure authentication scenario that is yet convenient but provides more layers of security to come into play. Proposed solution, “Vivid-Pass” will add a dual layer of authentication with custom-made security features that will certainly add more security to the authentication process. A dual challenge authentication page will ask the user to pick two pre-defined items from two different sets. The first set is a broad set pre-defined by the user where it could be any set of the user's choice or preference (map, books, football or basketball teams...) combined with the second set, a pool of colors.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Shehadeh, Bashar | Chen, Qingjun | Computer Science and Information Technology |

**Statistical Modeling of Educational Data**

Statistical modeling of educational data abstract student evaluation has been the core tool in measuring the performance of teaching effectiveness in education for many years. In recent years, the federal policy makers have sought to implement data collection that would yield systematic information on the characteristics and the outcome of teacher preparation programs. The objective of this policy is to hold accountable teacher preparation programs when failing to provide appropriate training to the teacher candidates. This study investigates the factors associated with measuring teacher candidate performance using multinomial logistic regression analysis, regression tree and missing value imputation techniques. These statistical methods applied to a survey collected on teacher candidates during their practicum led to finding the variables that have the strong effects on teacher candidates’ performance. Theoretical background, advantages and disadvantages of these methods are discussed thoroughly in this thesis. The regression tree model seems to yield a promising outcome. The data for this analysis were collected over nine (9) years via mail surveys administered to cooperating teachers at the end of each semester, dating back to the 2000-2001 academic year. SAS and JMP packages will be used to run the analysis. Key words: Cooperating teachers’ evaluation, multinomial logistic regression analysis, Regression Tree Analysis, Cross Validation

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Savadogo, Alassane | Xu, Hui | Statistics |

**A Comparison Study of Estimation of Conformance Proportion**

Confidence Limits of Proportion of conformance is the basis of all the Quality Control tools Control Charts, Average Run Length, and Process Capability Index. In this paper different interval estimates of the proportion of conformance are compared in terms of their Average interval length and coverage probability. Some methods for constructing confidence limits were evaluated using simulation. Normally and non-normally distributed data were used to evaluate the robustness of the process. What role the normality of the data can play in the outcome of the confidence interval will be compared. Side by side comparison of Average interval length and coverage probability will be presented in the tabulated form.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Rimal, Mahesh | Xu, Hui | Statistics |

**Political Geography in the Digital Age**

People do not often equate the internet with "place," but that is exactly what it is, consisting of layers which all occupy different spaces, blurring the line between private and public. This paper will discuss the many ways that the internet is a commons, both free and controlled in ways that can vex officials over where jurisdiction begins and ends. Coupled with the rapid evolution and implementation of the internet into our daily lives, many people—governments, corporations, even the academic community—have adapted slowly to the Digital Age. In many countries, governments have been caught off guard by the use of the internet and connective technology in the political process. The Digital Age has raised new questions about the limits of territoriality and traditional borders. Lacking the true physical boundaries which have been ingrained in our collective consciousness since the Treaty of Westphalia, the effects of the internet on state sovereignty and in international relations are sometimes not completely understood. In this paper I will introduce some ways in which the Digital Age is changing world political geography, and consider whether or not the nation-state system has a future in our globally connected culture.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Bennett, Adam | John, Gareth | Geography, Planning and Community Development |

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

**Color Preference**

It is important to be able to recognize how colors coordinate when preparing to make color selections. This is a common problem seen with many consumers attempting to add some character in their home. This research focuses specifically on how participants feel colors coordinate with each other when comparing warm and cool colors. The study is set up so each participant was exposed to one main color along with an accent color within that main color. There are five participants in each grouping and the grouping is determined by one main color. Within each group, all participants were asked whether they believe that the combination of the two colors presented matched. It was designed so that two participants were shown two warm colors, two were shown clashing colors (warm and cool) and one was shown two random colors. Following this step, participants were exposed to each color separately. After each exposure, they are asked to rate the color on a scale from 1 to 5. Theoretically, if the participant believed the combination of the colors matched, they should rate the colors highly when presented individually.

**Presentation Index:** I-B 1 **Present Time:** 4:00 PM

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Heuring, Benjamin | Valdes, Leslie | Psychology |

**Comparing the Preschool Language Scale: 4th and 5th Editions**

The Preschool Language Scale-Fourth Edition (PLS-4) and the Preschool Language Scale-Fifth Edition (PLS-5) are norm-referenced instruments used to assess the auditory and expressive language skills of children from birth to 7 years, 11 months of age. Standardized language tests, such as the PLS-4 and PLS-5, aid in the process of identifying language disorders and delays. The PLS-4 has been recently revised based on information from recent research. Despite positive changes from the PLS-4 to the PLS-5, clinical impressions indicate that fewer children are being identified as having potential language delays or disorders through the use of the PLS-5 than through the PLS-4 (American Speech-Language Hearing Association list serv, 2012). The purpose of the present study is to serve as a pilot study to compare the properties of the PLS-5 to the PLS-4. This study will address two specific questions. First, what is the concurrent validity between the PLS-4 and the PLS-5? Second, using cut-off standardized scores of 70 and 77 (2 and 1.5 standard deviations below the mean) on both measures, what is the agreement between the PLS-4 and PLS-5 in identification of children with potential language delays? Twenty graduate students reviewed and compared the psychometric properties of the PLS-4 and the PLS-5. The graduate students administered both the PLS-4 and the PLS-5 to children from 16 months to 6 years of age. Each child was assessed individually by a graduate student with the PLS-4 and PLS-5 administered in a counterbalance order within two weeks of each other. Statistical analyses of individual test items, and individual and group standard scores were conducted. Implications regarding the psychometric properties of the two tests will be discussed.

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

| **Student Presenter(s):** | **Sponsor(s):** | **Department(s)** |
|---|---|---|
| Yang, Samantha; Erickson, Sarah | Estrem, Theresa | Communication Sciences and Disorders |

**Types of Ethical Issues Faced by Speech-Language Pathologists**

This study examined the types of ethical issues encountered by practicing speech-language pathologists (SLPs). Graduate students interviewed and surveyed 68 SLPs who worked in educational and clinical (medical, private practice) settings. SLPs defined ethics in the workplace and indicated types of ethical issues that they frequently encountered in the workplace. Results of the interviews and surveys indicated SLPs encounter a wide variety of ethical issues, including parent/caregiver interference, insurance/billing issues, confidentiality breaches, and continuation of unnecessary services. SLPs indicated that they encounter the most ethical issues with alternative-augmentative communication, dysphagia (swallowing disorders) and autism spectrum disorders populations. Half of SLPs indicated that ethical dilemmas have changed over time and most often reported technology (AAC, telepractice, confidentiality) as the factor that has most changed ethical issues. SLPs ranked conflict of interest, clinical competence and unethical coworkers, and unethical clients/families as the top three most frequently encountered ethical issues. SLPs must consider the code of ethics and their professional obligations when confronting ethical issues in the workplace.

**Presentation Index:** I-B 3 **Present Time:** 4:00 PM

| **Student Presenter(s):** | **Sponsor(s):** | **Department(s)** |
|---|---|---|
| Yang, Samantha; Weidner, Kristen; Bruner, Molly; Daleiden, Jillian; Schneider, Kristen | Whites, Margery | Communication Sciences and Disorders |

**Asian Carp as an Invasive Species in Minnesota**

Asian carp are an invasive species in North America, and these large fish are having a negative impact on the aquatic ecosystems that they have reached. Currently, there have only been a few sightings of Asian carp in Minnesota, and they are yet to establish a population here. Due to the potential economic, recreational, and even health problems that Asian carp pose, the fact that they are close to establishing a population in Minnesota is an issue that encompasses science, technology, and society. Many governmental entities, from local departments all the way to presidential candidates, have taken notice of the issue and several solutions have been proposed. However, each of the potential solutions has serious problems, both ethically and economically, and none has proven to be useful in stopping the movement of Asian carp. The goal of this project was to look at the knowledge, beliefs, and behaviors of a group of college students about what should be done to prevent Asian carp from becoming established in Minnesota waters.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Bambrick, Christopher | Simpson, Patricia | Biological Sciences |

**Smart Cart**

Our senior design team will build a shopping cart that usesRadio-Frequency Identification (RFID) technology, a touch screen LCD and Wi-Fi to enhance the shopping experience for customers. The Smart Cart's main purpose is to enhance the shopping experience for the customers. The Smart Cart will reduce check out time and make shopping more efficient by incorporating RFID, touch screen and WiFi technologies. The Smart Cart will be linked to the customers' account database. The Smart Cart uses weight sensors at the bottom of the cart that are connected to the analog to digital converters. When an item has been placed in or removed from the cart, the weight sensor will cause an interrupt in the microcontroller which will then tell the RFID reader to start a tag scan. The price and any weekly specials for the product will then be sent back to the Smart Cart to be displayed on the LCD. When the customer is ready to checkout, all they have to do is hit the checkout button on the touch screen, enter their personnel identification number (PIN) and press enter. All of the items in the cart will be subtracted from the store database and added to the customer's database. This project will incorporate both the hardware and software disciplines taught in the School of Electrical Engineering. We also learned about sourcing parts from manufactures to complete our project.

**Presentation Index:** I-B 5 **Present Time:** 4:00 PM

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Howard, John; Dunnigan, Michael; Martin, Alexander | Yao, Aiping | Electrical and Computer Engineering |

**A New Information System to Track Graduation Time Lines**

Maverick Software Consultants have a step-by-step process which helps students find a job when they are finished with college. Currently they keep track of students' progress manually and, with there being so many different steps, some students miss a step or a step gets overlooked. With the system we are creating, it will automate the current manual system and alert students and managers of any upcoming steps that need to be completed. It will also let the manager know when a step has been completed or has not been finished in a timely manner.

**Presentation Index:** I-B 6 **Present Time:** 4:00 PM

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Merrell, Bruce; Holm, Alex; Martin, James; Sellner, Tyrone | Schmidt, Mark | Information Systems |

**Genocide Education in Minnesota's Public Schools**

The topic we are presenting is Genocide Education in Minnesota Public Schools. The reason we chose this subject is because all of the members of our group have been through public schooling and after taking the Honors 211 and 130: Naming, Framing, and Blaming course have realized how the majority of us are misinformed and unfamiliar with the term genocide and its meaning. Also, we collectively found we were unaware what genocides have taken place around the world outside the most commonly mentioned genocide, the Holocaust. Because of this and the fact the majority of our group members are education majors, we have constructed the research questions: Why is the word genocide not used in the Social Study Standards of Minnesota Public Schools? Is the word genocide taboo in politics? We will construct our data by emailing the education board of Minnesota with a survey to ask them the following: why the term genocide is not directly used, their feelings on the use of the word, if they find it dangerous or inappropriate to use the word genocide in the social study standards, and if they feel it would be appropriate to teach about genocide in public schools. In addition to our emails we will construct online research and perform as analysis of the social study standards of Minnesota Public Education compared to the definition of genocide to see if they mention a majority of the words used to define genocide without actually writing or mentioning the word itself in the academic school standards.

**Presentation Index:** I-B 7 **Present Time:** 4:00 PM

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Gebur, Kevin; Wolter, Sarah; Fiecke, Amy; Roden, Lindsey; Smith, Ivy; Dahl, Callie; Barnes, Maya; Stensing, Allesson | Julius, Matthew; Tabakin, Geoffrey | Biological Sciences, Human Relations and Multicultural Education |

**I Believe I Can Fly**

"I Believe I Can Fly" is a project based on the personal experiences that have been made in the aviation industry by women. We will be comparing our first flight in a small airplane to those of Janet Bragg, Jenese Thatcher, Christina McColloch, and Harriet Quimby. We will also explore the many other exhilarating and sometimes frightening experiences that come a long with being a pilot, airplane mechanic, astronaut or a passenger. Through this presentation we would like women to realize that even though they are the minority in aviation, if they truly believe in themselves they can have a huge impact on the aviation industry.

**Presentation Index:** I-B 8 **Present Time:** 4:00 PM

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Roden, Lindsey; Swanson, Anna; Montag, Chelsea | Olson, Angela | Aviation |

**The Thrill of Flight**

Our project will compare and contrast between a flight experience that we took part in and between diverse aviators of the past that we read about independently. We also interviewed a pilot within the commercial airline industry that we will compare with as well. As a result of completing this project we learned more about the difficulties that minorities face in aviation. We also learned the problems of being an aviator back-in-the-day compared to what it is like in our current-age. As for a broader audience it is important for us to portray our appreciation for the aviation industry in all that they went through and have accomplished to push the boundaries of aviation to where they are today.

**Presentation Index:** I-B 9 **Present Time:** 4:00 PM

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Gebur, Kevin; Rothstein, Cory; Wilson, Caitlin | Olson, Angela | Aviation |

**Geographic Literacy Between International and Non-International Students at SCSU**

Geographic literacy is of vital importance as our world is continuing to become more interconnected than ever before and is needed by all people in order to better understand the world around them. The lack of geographic literacy in any demographic group is a disadvantage. The purpose of this study was to determine the level of geographic literacy between international and non international students currently enrolled at St. Cloud State University during spring semester of 2013. To find this information, international and non-international students were surveyed. Results were found by scoring and comparing the surveys and gathering them into separate data sets. The results were then analyzed to determine which group was more geographically literate.

**Presentation Index:** I-B 10 **Present Time:** 4:00 PM

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Hogrefe, Zachary | Torguson, Jeffrey | Geography, Planning and Community Development |

**Bioinformatic Analysis of the Arginine and Proline Biosynthetic Pathway in the *Bacillus cereus***

*Bacillus cereus* is a gram-positive rod bacteria isolated from blood and pleural fluid of a male pneumonia patient in 1969. It is a facultative aerobe with optimum growth temperature between 20° C to 40° C. *B. cereus* is a saprophytic soil bacterium so it can easily spread to food. *B. cereus* can produce enterotoxins and emetic toxins that cause food poisoning. Pathogenic bacilli such as *Bacillus anthracis* and *Bacillus thuringiensis* are related to *B. cereus*. Students of Advanced DNA Techniques (BIOL 484) course in Saint Cloud State University are annotating genes and identifying pathways for Department of Energy-Joint Genome Institute. Proline is an aliphatic amino acid with nonpolar side group. It is important in cellular signaling for molecular recognition. Arginine is amino acid with large charged polar side chain. I propose that using a comparative genomic approach, genes that express proteins involved in arginine and proline biosynthetic pathway can be identified in *Bacillus cereus*.

**Presentation Index:** I-B 11 **Present Time:** 4:00 PM

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Chitrakar, Iva | Kvaal, Christopher | Biological Sciences |

**Expert and Novice Study of Percent Yield**

The purpose of this research was primarily to identify what differences exist between expert and novice chemists in solving percent yield problems. To study this, volunteer subjects completed a think aloud while working through a set of example problems. The problems included a text book like example and a lab scenario. Later, with collected data, a task analysis was done in order to break down the steps taken by each subject on paper and mentally while solving for percent yield. In looking at differences in understanding percent yield between chemists at varying levels, research can predict what prior knowledge is necessary and how to better teach the topic in a classroom or lab.

**Presentation Index:** I-B 12 **Present Time:** 4:00 PM

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

**Our Height of Flight**

Our project consists of comparing the heights of our flight to others we have researched. We have interviewed past pilots and their experiences and compared them to our own. We compare the flights of Renee Bowman, Harriet Quimby, Bessie Coleman, and Tuskegee Airmen fighting in World War II to our own. We were given the opportunity to fly at St. Cloud's Airport with a total of three honors students in each group. This experience was enriching and want to be given the opportunity to share our experience at the 2013 colloquium. Our project's name is Height of Flight and the research, information, and experiences were gathered through the students of Hanna Brodt, Ally Herod, and Alex Halvorson.

**Presentation Index:** I-B 13 **Present Time:** 4:00 PM

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Brodt, Hanna; Herod, Alison; Halvorson, Alex | Olson, Angela | Aviation |

**Transgenerational Fathead Minnow Estrogen Exposure Study**

17β-estradiol, or E2, is the most potent natural form of the steroid sex hormone estrogen produced by vertebrates. E2 is a chemical that passes through most wastewater treatment plants and then enters waterways and the habitats of aquatic life. This study aimed to examine the effects of repeated and multigenerational E2 exposure on the development and reproductive health of the fathead minnow. Treatment exposure consisted of 6 weeks of E2 in solvent at environmental concentrations (12-15 ng/L). Over the P, F1, and F2 generations of laboratory raised fathead minnows, four different E2 treatment exposures were applied. A control group exposed only to solvent was also raised. For each of 47 fish completing the study, liver and gonad tissues were removed for histological processing: embedding, sectioning, auto-staining, and finally coverslipping. Three different liver sections and three different gonad sections per block of tissue were photographed for grading. Each section was graded independently by two different histological students and the rankings were then compared. Liver sections were ranked for hepatocyte vacuolization and the overall stage of spermatogenesis or oogenesis was ranked in the gonad. The presence of eosinophilic fluid and/or tissue pathology was also noted. A high percentage of vacuolization was noted in the liver tissue of both the treated and control groups of fish. No gonad tissue was available for a number of immature fish from both the treated and control groups. Due to the low concentration of E2 exposure mimicking that found in the natural environment, and the relatively small sample size of this study, there were limited trends evident in the data.

**Presentation Index:** I-B 14 **Present Time:** 4:00 PM

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Bedard, Marie; Ahmed, Faisa | Schoenfuss, Heiko | Biological Sciences |

**Leadership and Engagement of First-Year St. Cloud State University Students**

Student engagement and retention has been identified by many as a critical issue in higher education. This study looks at how student retention is impacted based on leadership and engagement of First-Year St. Cloud State University students. The study focuses on students who were initially categorized as low-risk by MAP-Works and have shown a moderate interest in getting involved in campus life. Leadership and engagement with the campus community is measured by surveys administered through the MAP-Works student success and retention software. The study shows that students who report higher levels of connections with other students who share common interests and higher levels of participating in student organizations are more successful at St. Cloud State University.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Maly, Anthony | Barth, Carrie | Counseling and Community Psychology |

**Southeast Asia Education Abroad Experience: Does it Benefit the Hmong Student**

This qualitative study examined what outcomes were identified by the students who participated in St. Cloud State University's education abroad experience to Laos, Thailand and Malaysia, specifically what were identified by the Hmong-American students that participated. Thirty-six students who attended the winter 2012 Education Abroad experience participated in focus groups one month after their two week academic trip and discussed their experiences. Five of the groups (N= 33) were comprised of self-identified Hmong-American students while the sixth group (N=3) contained students that were not Hmong-American. All students were given a demographic survey, those that self-identified as Hmong were given further questions relating to their ethnicity and ethnic pride. Future analysis of this program is warranted to research whether the identified outcomes are statistically significant and necessitate continuation of the program.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Kroll, Stephanie | Barth, Carrie | Counseling and Community Psychology |

**Histological Effects of Effluent Contaminated Water on Bluegill Sunfish**

In a recent United States Geological Survey (USGS) of Minnesota lakes, it was found that endocrine active compounds, (EAC's) including estrogenic compounds and pharmaceuticals were present in the water and sediment of many lakes. Lakes with a high density of septic systems and shoreline development often had the greatest concentration of these chemicals. Even at low levels, these chemicals are known to cause local extinction of forage fish and abnormal sexual development of larger species. Given these circumstances, we need to know how EAC's and pharmaceuticals are affecting fish populations. Two lakes were selected for our study; Big Marine Lake near the Twin Cities and Williams Lake in Northern part of the state near Akeley MN. The fish (n=62) were sampled from active nesting sites during the spawning season and selected from developed and non-developed shoreline areas. The goal was to see how vulnerable adult Bluegill are to EAC's and pharmaceuticals during the spawning season. Selective staining methods using an H&E stain allowed us to identify cellular details of the liver and gonadal tissue. Through in-depth sectioning of the two tissues and histopathology analysis of the gonad and liver, we are able to determine sexual abnormalities and stress on the liver. The study assessed patterns in the histopathology of Bluegill in these two lakes to determine if EAC's and pharmaceuticals are problematic during the spawning season.

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

| **Student Presenter(s):** | **Sponsor(s):** | **Department(s)** |
|---|---|---|
| Wirth, Daniel | Schoenfuss, Heiko | Biological Sciences |

**Bioinformatic Analysis of the Lysine Biosynthetic Pathway in *Bacillus cereus* ATCC 14579**

*Bacillus cereus* is a gram-positive, facultative anaerobe, spore-forming bacteria. It grows optimally at temperatures between 20°C and 40°C and is capable of adapting to a wide range of environmental conditions. (1) Most of the literature on *Bacillus cereus* is concerned with pathogenicity, whether intestinal or non-intestinal, associated with tissue-destructive and reactive exoenzyme production. Saint Cloud State University is part of a consortium of institutions that make up the Collaborative Undergraduate Genomic Annotation Team. SCSU has undertaken the responsibility of using comparative genomics to identify the lysine biosynthetic pathway. Lysine is a basic amino acid with a side chain that is polar, positively charged. The amino group is highly reactive and often participates in reactions at the active centers of enzymes. (2) We hypothesize that the amino acid lysine has a biosynthetic pathway in *Bacillus cereus* ATCC 14579, and that we will be able to identify the genes responsible for the synthesis of lysine using comparative genomics approach.

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

| **Student Presenter(s):** | **Sponsor(s):** | **Department(s)** |
|---|---|---|
| Morhardt, Mary | Kvaal, Christopher | Biological Sciences |

**Unmanned Aerial Vehicle: Quadrotor**

This project entails the development and construction of a quad-rotor aerial vehicle. A quad-rotor is a vertical take-off and landing capable aircraft, similar to a helicopter, that has four independent rotors in an X or H formation. The Quad-Rotor Unmanned Aerial Vehicle project has many benefits to St. Cloud State University, the Electrical and Computer Engineering department, and future projects that may use the aircraft as a platform to conduct experiments. Engineering controls students will also benefit from a working prototype upon which laboratory exercises can be conducted. Extensive research has identified an integral back-stepping control algorithm approach as the best for maintaining stable flight in variable conditions. This control method was combined with research on aerodynamic requirements of small radio-controlled aircraft to identify appropriate mechanical components (motors, propellers, and frame design) that allow the prototype to fly without requiring in depth mathematical and computer model (derivation of a detailed mathematical model of the system is beyond the scope of an undergraduate project). A microcontroller, an inertial measurement unit and a radio-control module (Bluetooth) are employed to satisfy the system requirements. The prototype is developed incrementally, beginning with programming that turns the motors to verify that they are operating correctly, and proceeding up to the final goal of vertical take-off from ground, autonomous hovering at a user-specified height, and vertical landing. This project requires a very sophisticated control algorithm that when successfully implemented will create a stable platform for future projects and be an excellent avenue for future students to learn control theory.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Shah, Anil; Lade, Daniel | Glazos, Michael | Electrical and Computer Engineering |

**Bioinformatic Analysis of Tryptophan Biosynthetic Pathway in *Bacillus cereus* ATCC 14579**

*Bacillus cereus* is an endemic soil-dwelling, gram-positive aerobic or facultative anaerobic spore-forming rod with optimum growth occurring between 20 °C to 40 °C. *Bacillus cereus*, like other members of the genus Bacillus, can produce protective endospores. It is usually the cause of food poisoning that is associated with the consumption of rice-based dishes. The organism produces an emetic or diarrheal syndrome induced by an emetic toxin and enterotoxin, respectively. The genome of *Bacillus cereus* is 100% complete, funded by The Department of Energy Joint Genome Institute. Saint Cloud State University is part of the consortium of institutions that make up the Collaborative Undergraduate Genomic Annotation team. SCSU using IMG-ACT has undertaken the responsibility of employing comparative genomics to identify the amino acid biosynthetic pathways. Tryptophan is a hydrophobic non-polar amino acid. Tryptophan is the largest of the amino acids. It is also a derivative of alanine, having an indole substituent on the β carbon. I hypothesize that tryptophan has biosynthetic pathway in *Bacillus cereus*, and that I will be able to identify the genes responsible for the synthesis of tryptophan using a comparative genomics approach.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Malla, Minesh | Kvaal, Christopher | Biological Sciences |

**Impacts of Estrogenic Effluents on Resident and Caged Fish in St. Croix Tributaries**

Endocrine active compounds (EAC) including estrogenic compounds are commonly found in the effluent of waste water treatment plants (WWTP). Little is known as to what impact these compounds have on resident fish populations. This study investigates the impact these compounds have, if any, on the development of wild fish, using histology to determine if endocrine disruption occurred. Five tributaries of the St. Croix River were used as sites for sample collection; 265 resident fish were caught upstream of the effluent site, directly from the effluent discharge, and downstream of the site. As a means of a control population, 109 fat head minnows (*Pimephales promelas*) were divided into five mini mobile units and were also placed upstream, downstream, and directly in the effluent discharge for 12 days. After sample collection, the fish were sacrificed and gonadal and liver tissues were harvested. The tissues were fixed in formalin then processed to be sectioned and stained using hematoxylin and eosin. Histological analysis allowed for the determination of abnormal sexual characteristics and liver vacuolization in resident and caged fish.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Cox, Megan; Jenson, Grace; Miles, Kelly | Schoenfuss, Heiko | Biological Sciences |

**Bioinformatic Analysis of the Phenylalanine and Tyrosine Biosynthetic Pathways of *Bacillus cereus* ATCC 14579**

*Bacillus cereus* is a gram-positive, facultatively aerobic, spore-forming rod. At an optimum growth range of 20 to 40°C, *B. cereus* is primarily known for causing food poisoning, although instances often go undiagnosed. There are two types of food-borne illnesses that it causes: a short-incubation form caused by emetic toxins and a long-incubation form mediated by enterotoxins. The genome of *Bacillus cereus* is 100% complete, funded by the Department of Energy Joint Genome Program. Saint Cloud State University is part of a consortium of institutions that make up the Collaborative Undergraduate Genomic Annotation Team. SCSU has undertaken the responsibility of using comparative genomics to identify the amino acid biosynthetic pathways. Two important amino acids of *Bacillus cereus* are phenylalanine and tyrosine. Phenylalanine is a nonpolar amino acid found in three forms. As an aromatic compound, it constitutes the second most abundant class of organic substrates and environmental pollutants—a substantial part which is metabolized by bacteria via phenylacetate. Tyrosine is synthesized from phenylalanine, forming an amino acid with a polar side group. It is hypothesized that these amino acids have biosynthetic pathways in *Bacillus cereus* and that the genes will be identified as responsible for the synthesis of these amino acids using a comparative genomics approach.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Jendro, Milissa | Kvaal, Christopher | Biological Sciences |

**Goniothalamin: A Template for Chemotherapeutic Drug Design and Synthesis**

It is estimated by the National Cancer Institute that close to 65 percent of all cancer drugs are a direct result of isolation, characterization, and manipulation of natural products. This research focuses on the natural product goniothalamin, which was isolated from the dried stem bark of Malaysian plants of the genus *Goniothalamus*. Goniothalamin has been shown to induce apoptosis in cancer cells. The bioactivity of this molecule is thought to be due to its ability to react with thiols. One mechanism involves the reaction of goniothalamin with glutathione, a natural antioxidant found in all cells. The other mechanism involves the inhibition of nuclear factor-kappa B, an enzyme involved in cell proliferation. The goal of this project is to use goniothalamin's structure as a template in the synthesis of a new, more potent goniothalamin analogue. It is anticipated that by changing the endocyclic double bond in goniothalamin's lactone core to an exocyclic double bond, the compound will react more rapidly with thiols. If this hypothesis holds true, the prepared analogue should result in an increased cytotoxicity towards cancer cells and could provide valuable insight into the development of new chemotherapeutic drugs.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Pillsbury, Makenzie | Mechelke, Mark | Chemistry |

**Water Into...Jet Fuel?**

Research poster presentation on the United States Navy's efforts at turning sea water into jet fuel for military aircraft. Recently released information demonstrates that if the Naval efforts prove to be successful, there will be economic and environmental benefits with little identified risks. The Navy hopes to pursue the project more diligently as additional funding becomes available.

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

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Knutson, Rhiannon; Mezzano, Sara | Lindstrom, Sheila | Sociology and Anthropology |

**Task Switching and Breaks**

In the everyday business world many people are asked to do multiple things at once. There is a very high demand for individuals that can multitask efficiently. I am looking for information that can lead to a more efficient way to multitask. What this experiment does is tests an individual's skill on judging whether a number is a higher magnitude or oddity. There are three groups; the control group will have six blocks of twenty trials. Each block will have a specific target of oddity or magnitude depending on the block. Each block in the control group will only have one type of target. Each target will be used in three blocks each. The second group, the experimental group, will also have six blocks of twenty trials. In this block the magnitude target and oddity target will be randomly arranged so that task switching will have to be performed within the same block. The third group, the test group, will have six blocks of twenty trials each. This block will have a set placement at the beginning of the block where the participants will do four trials of oddity and then have to perform one task switch and perform a magnitude task and vice versa. I will be measuring accuracy and reaction time of completing these tasks. My hypothesis is that the control group will have the best accuracy and reaction time followed by the test group and experimental group.

**Presentation Index:** I-B 26 **Present Time:** 4:00 PM

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Richards, Brandon | Valdes, Leslie | Psychology |

**Hypnosis and Quitting Smoking**

Hypnosis is a very popular phenomenon that many of us wonder about. How does it work? Does it work for everyone? What can it be used for? Neuroscientific evidence suggests that hypnotic trance induction is a modified state of consciousness that emphasize attention, concentration and the letting go of thoughts. It is also based on the suggestibility of the person. This project will review historical background of hypnosis as well as theories that postulate how hypnosis works and affects the human brain. The focus of my poster will be the effectiveness of hypnosis as an aid to stop smoking. Hypnosis as a treatment will be contrasted with nicotine patches, psychotherapy, and behavior modification strategies. I will also be looking at the success of group hypnotherapy for quitting smoking (we have all seen these advertised before) compared to group relaxation as the control group.

**Presentation Index:** I-B 27 **Present Time:** 4:00 PM

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Rollins, Lindsay | Valdes, Leslie | Psychology |

**Insourcing and Re-Shoring to Reduce Risk in Supply Chain Management**

Recent trends show organizations are bringing manufacturing jobs back to the United States. By insourcing and re-shoring jobs, companies save money in logistics, in taxes, and give back even more to the United States economy. Insourcing and re-shoring labor has proven to be beneficial to many organizations such as General Motors and Apple Inc. This study consisted of library research and analysis of current organizational case studies. Insourcing and re-shoring jobs reduces, or has even eliminated, risks and interruptions within the overall process of managing a supply chain. By simply reducing the distance a product travels before reaching the final consumer, unforeseen risks in the supply chain have been averted.

**Presentation Index:** I-B 28 **Present Time:** 4:00 PM

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Overby, Bradley; Willert, Jonathon; Molnar, Brandon | Polacco, Alexander | Management |

**Analysis of Multiple Repeats in Math Courses**

In the past, it has been necessary for some students at SCSU to repeat math classes several times before they are able to pass. The Math Department at SCSU has recently introduced a new policy for repeating classes. Retaking for the first and second time does not require department permission but retaking for the third time requires department permission. We are analyzing data from Summer 2010 to Fall 2012. Looking at the grades students achieved at the third attempt, we would like to know the indicators which determine whether the student will be successful in repeating the course for the third time. The math courses we examine are MATH 112, 115, 196, 201, 211, 221, and 222. We use JMP software to analyze this data. The indicators that are included in this project are: Cumulative GPA from 1st term to 5th term, ACT Math, Accuplacer Arithmetic, Accuplacer College Level Math, Accuplacer Elementary Algebra, Accuplacer Cal Readiness, DTMS Algebra Skill, DTMS Functions and Graphs, High School GPA 4 Scale, High School Percentage, Transfer GPA (if they are NET students), Non Resident Alien (International student indicator), DGS indicator, and Major.

**Presentation Index:** I-B 29 **Present Time:** 4:00 PM

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Chai, Joyce | Robinson, David | Statistics |

**On the Relationship of ACT Math Scores and Accuplacer Math Scores**

In this project, we analyzed the relationship of ACT Math scores and Accuplacer Math scores. First, we used ACT Math to be the independent variable, and AccuplacerCollLvl Math, Accuplacer Arithmetic, Accuplacer Elementary Algebra to be dependent variables. We described the relationships using correlation. Next, we created two dummy variables to indicate missing values of ACT Math, and analyzed the relationship between these two dummy variables and the dependent variables of AccuplacerCollLvl Math, Accuplacer Arithmetic and Accuplacer Elementary Algebra. We then added HS GPA as another independent variable to the previous model, and then used multiple regression to describe the relationships one by one. In addition, we reset the dependent variable of Elementary Algebra Accuplacer (1 if its score is >=70, and 0 if its score is <70), and used three similar three logistic regressions to predict this Elementary Algebra Accuplacer indicator, with predictor variables ACT Math score; two dummy variables of ACT Math; and two dummy variables of ACT Math with HSGPA. We repeated these three logistic regressions with College Level Math Accuplacer (1 if its score is >=50, and 0 if its score is <50). A second phase of this project was to find the relationship between the dependent variable of cumulative GPA and independent variables of DTMS IntAlgebraSkills, DTMS IntFunctionsAndGraphs, AccuplacerCollLvl Math, Accuplacer Arithmetic, Accuplacer Elem Algebra. We began this by examining boxplots to see whether there were outliers among these variables, and deleted those outliers. Next, we analyzed first and second term cumulative GPA, using a regression with the five independent variables. We expect these results will help shed light on how to relate ACT scores, Accuplacer scores, and SCSU GPAs to each other.

**Presentation Index:** I-B 30 **Present Time:** 4:00 PM

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Ren, Qing | Robinson, David | Statistics |

**Paying Attention to Warnings on Prescription Labels**

There are a variety of different labels that can be on prescription medication. Font, print size, color, location, and images can all affect how a person reads their own prescription on the bottle, and what they pay most attention to. Because the warnings on medication are not being observed closely enough, medication poisoning is becoming a common occurrence. The study is related to research done by Hedwig von Restroff and the isolation effect. It is predicted that warnings on a label will draw more attention if there is an icon along with the words and highlighted with a border. By creating a visual test with questions relating to the labels presented, this study will test ways to better highlight critical information on prescription labels to help reduce the probability of medication poisoning.

**Presentation Index:** I-B 31 **Present Time:** 4:00 PM

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Tangen, Stephanie | Valdes, Leslie | Psychology |

**Journaling and Mood**

The purpose of the research is to determine how different forms of journaling (text, drawing, text and drawing) affect an individual's mood. Participants completed a mood adjective checklist, PANAS, before they were given a journal, then the participants will be given one of three different journals (at random) to keep and maintain for the period of one week (7 days). The first type of journaling was written. Participants that receive the written journal were instructed to write on the same topic for at least 15 minutes a day. Participants in the drawing journal condition were instructed to draw something for at least 15 minutes a day. The last condition was a combination of both writing and drawing. The participants were instructed to both draw and write in conjunction with each other in their journals. When the participants return the journals, they will again be given the PANAS to compare the participant's mood from their pre-journaling results. The participants filled out a questionnaire to eliminate any confounding variables, such as previous journaling experience, artistic experience, psychoanalysis, medications, age and gender. It is hoped that the drawing method of journaling will have an increase in someone's positive mood. Results and implications for art therapy are discussed.

**Presentation Index:** I-B 32 **Present Time:** 4:00 PM

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Drexel, Catherine | Valdes, Leslie | Psychology |

**ADHD in the Workplace**

The following project is a breakdown of adults with ADHD in the workplace. I will be discussing the positives and negatives of adults having ADHD in the workplace by analyzing articles and previous studies related to this topic.

**Presentation Index:** I-B 33 **Present Time:** 4:00 PM

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Barett, Lorren | Valdes, Leslie | Psychology |

**Mindfulness and Extraversion**

Mindfulness is being aware of what you are currently doing and being focused on the present moment. This study examines the relationship of mindfulness ratings and extroversion. Individuals who are extroverts tend to be very social and outgoing. Introverts, those who score low on extroversion scales, tend to be more interested in thinking. We hypothesize that individuals classified as introverts will have high positive rating of mindfulness, whereas extroverts will score a lower positive rating on the mindfulness scale. Data collection is ongoing. Implications of effects of personality on mindfulness are discussed.

**Presentation Index:** I-B 34 **Present Time:** 4:00 PM

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Gill, Taylor; Allen, Rebecca | Valdes, Leslie | Psychology |

**Bright Minds, Bright Futures: Empowering Young Minds to Lead**

For my project I will create a unique curriculum for elementary students which teaches students the concept of holistic leadership. I will also incorporate the S.O.A.R. strategic planning method and explain how this method of analyzing students' strengths, opportunities, aspirations and results. Some topics I will include are bullying prevention and positively contributing to a community by being good citizens. While incorporating these topics into everyday classroom activities, I will incorporate the process of modeling these updated ideas on leadership and goal planning. This issue is important because children can be leaders and the ideals about leadership are evolving. Many people, children included, do not consider themselves as leaders and as a teacher, I feel a responsibility to empower those who have undiscovered leadership potential. In order to carry out this project, I will analyze curriculum materials for primary elementary students (K-3), the current Minnesota standards and I will analyze the S.O.A.R. method of planning and goal setting with the purpose of applying and integrating each part into a unified, practical teaching method and curriculum towards the goal of empowering children to be leaders. By putting the effort towards my passion and curiosity, I would like to use the knowledge I discover through this process and share my work with other teachers who have similar goals and beliefs on leadership. By doing a project like this, I could change the educational system and create awareness for the importance of leadership education.

**Presentation Index:** I-B 35 **Present Time:** 4:00 PM

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Danzeisen, Ali | Eyo, Bassey | Communication Studies |

**Leadership Through Athletics and Gender**

Our topic proposal is to do a case study within St. Cloud State Athletics. We want to look at what a male sports team philosophy is on leaders and leadership and compares it to how women's sports team views leaders and leadership. Once we have our actual data and first hand research we want to compare both of the responses to the model of leaders and leadership that has developed in Honors 210: Honors Leadership. Lastly, we want to get a first-hand look at how St. Cloud State Athletic Director, Heather Weems, views leaders and leadership. We also want to look at her model of the two within the university, and compare that to the past Athletic Director's views on the same topic, as he is male. Overall, we want to compare and contrast what male/female teams believe is leadership and leading and compare it to the model discussed in class. Also, how athletic leaders view leadership within the university.

**Presentation Index:** I-B 36 **Present Time:** 4:00 PM

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Kanak, Samantha; Arnold, Brandon; Parsons, Jameson | Eyo, Bassey | Communication Studies |

**Global Leadership Compentencies: Implications for SCSU students**

This paper is on Global leadership Competencies. Relevant literature is reviewed on broad competencies critical for professional success in international and global careers. Implications from this are provided for preparing SCSU students for International and global careers.

**Presentation Index:** I-B 37 **Present Time:** 4:00 PM

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Ditoubilianou, Flamine marie | Eyo, Bassey | Communication Studies |

**Leadership in the Classroom**

A current problem in today's society is how we are educating our children. We are teaching them important writing, reading, and math skills but we are not preparing them for the challenges they will face when they leave school. Incorporating leadership into the curriculum and classroom will help solve this problem. After reading through school curriculums and multiple articles and periodicals, I have learned how to teach children about leadership, ways they can volunteer and show their leadership skills, how to encourage students to continue practicing leadership, and the benefits of teaching leadership at an early age. The most important aspect of my finding is the preparation it will give students so they can live happy and successful lives. Applying these findings to classrooms across the country will result in students becoming more prepared for a variety of situations they will face.

**Presentation Index:** I-B 38 **Present Time:** 4:00 PM

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Albright, Courtney | Eyo, Bassey | Communication Studies |

**Effective Mapping Techniques: Cartogram Versus Choropleth**

The objective set forth by this paper is to determine which cartographic method, the contiguous area cartogram or the choropleth map, is best for displaying political data. In this case presidential election data for Minnesota at a county level will be examined. Both methods have been used in the past in every type of media, and both have had some success. The findings will tell which method displays the data most clearly to the everyday user. After analyzing a series of academic journals, Annals of the American Geographer included, and displaying examples of the different maps to a sample of the geography students, data will be gathered using a questionnaire. The data will be evaluated using a series of graphs. Suspected is that the contiguous area cartogram will have a clearer display of the political data. If this hypothesis ends as truth, the contiguous area cartogram should be the primary display choice for political data.

**Presentation Index:** I-B 39 **Present Time:** 4:00 PM

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Orness, Joshua | Torguson, Jeffrey | Geography, Planning and Community Development |

**Going Green Can Help Reduce Healthcare Costs**

Innovation, efficiency, and profitability are common components enhanced within the internal business environment. On the other hand, sustainability (also known as "going green") is a continuously growing field that dictates the efficiency and profitability upon both the internal and external business environments. The environment and a company's bottom line are two key issues that are intertwined in operating a sustainable business. Therefore, this project will cover the overall aspect of sustainability and its correlation into the medical industry. In addition to this, the project will provide examples of modern day "green" hospitals and how "green" hospitals save healthcare costs. Today, many companies are becoming profitable by adopting "green" practices.

**Presentation Index:** I-B 40 **Present Time:** 4:00 PM

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Johnson, Derek; Ellis, Brittney; Kleven, Charles; Engstrom, Laura | Polacco, Alexander | Management |

**Comparing Genocides**

Classifying Genocides How can we classify genocide in a way that makes it easier to understand? Classifying is one of the ways humans naturally organize concepts in order to understand them. No genocide is the same, but they can still have similarities that fit them into categories. By identifying patterns amongst genocides and categorizing them, we will be better equipped to recognize and prevent future genocide. To begin the process of classifying genocide, we will form an initial classification scheme that we believe genocide falls into. Next we will thoroughly research a set of twelve genocides to compare and contrast. Certain aspects we will focus on include: Historical context Targets of genocide Perpetrators of genocide Steps leading to genocide Methodology and process of each genocide carried out by perpetrators International involvement Relief Time line Government sponsorship Religion & race politics After researching these topics, we will reevaluate our classification system based on the data we collected. We will compare this to our old system, as well as existing classifications of genocide. We will look at the official definition of genocide and see if our data helps to more clearly define it. With this information, we will design and present a visual representation of our new classification system.

**Presentation Index:** I-B 42 **Present Time:** 4:00 PM

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Schmid, Alyssa; Robeck, Julia; Steinmetz, Keri; Godding, Micah; Mills, Samantha; Mix, Rebekah | Julius, Matthew; Tabakin, Geoffrey | Biological Sciences, Human Relations and Multicultural Education |

**Propaganda, Media and Genocide**

Media is everywhere. It influences many areas of our lives. It may influence the way we think, perceive and behave. This is especially crucial when talking about the subject of genocide. How are propaganda and the media used to dehumanize a group of people and convince society that a group is inferior? Our project will look at the types of propaganda and media used in two different genocides and determine what makes certain types successful and others that fail. We will do this by looking at the Holocaust, researching types of propaganda used, and compare the data found to the Rwandan genocide. When looking at the Holocaust, we will determine select types of propaganda and media used and look at the Rwandan genocide to see if those types compare. After analyzing both genocides, it is important to note the correlation between propaganda and genocide and perhaps use it for future warning signs of genocide to come.

**Presentation Index:** I-B 43 **Present Time:** 4:00 PM

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Manuel, Laura; Vanoverbeke, Kyle; Curley, Isaac; McKimmy, Kent; Strand, Kaitlyn; Weinberg, Samantha; Notch, Jennifer; Lehrke, Hannah | Julius, Matthew; Tabakin, Geoffrey | Biological Sciences, Human Relations and Multicultural Education |

**American Maglev Trains**

Magnetic Levitation trains, or Maglev for short, is a new transportation technology that represents a very promising future for mass transit worldwide. Since its introduction in the 1980s, Maglev has proven to be much faster, safer, and more environmentally friendly than cars and traditional passenger trains. Despite the many advantages, Maglev development in the United States has recently come to an abrupt stop. Research has been almost entirely defunded and several potential projects around the country have been scrapped in favor of repairing existing automobile infrastructure. Given the great success of Maglev in countries like China and Japan, I set out to investigate why it remains so unpopular here in the United States. To accomplish this, I created a short survey designed to identify any common misconceptions about Maglev and to determine the transportation habits of a typical American college student. The survey was administered to over one hundred students at the Twin Cities campus of the University of Minnesota. My results tended to confirm my hypothesis that many young Americans are misinformed and generally distrustful of this new technology. I hope that as the American public learns more about Maglev and begins to recognize the potential that it has, we can finally move forward and make up for our slow start.

**Presentation Index:** I-B 44 **Present Time:** 4:00 PM

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Leo, Frank | Hoff, Jean | Earth and Atmospheric Sciences |

**Declared Major and Duration Analyses**

A key component of student success at any university is finding the major program which best fits a student's interest. At Saint Cloud State University, which programs do students choose most often for their major? Of these, which are the ones they are most likely to continue to completion, and which are the programs students are most likely to fail to complete? By analyzing the statistics on students' declared majors, we acquired insight about the students' successful and unsuccessful choices. Our data is drawn from SCSU's ISRS (Integrated Student Record System) database, and consists of 12,529 student records over six semesters here, from the years 2006 to 2011. We classify the students as focused or indecisive with respect to major of choice by semester. With the decisive and indecisive students, we tally proportions of declared majors, and then compare the student's high school GPA, ACT composite score, and credits taken at the university. Then we analyze groups of students who decided not to attend the university anymore and compare their intended majors by counting how many times they switched before they stopped attending. With all of this information we gain further insight into how Saint Cloud State University advisors can counsel students to enable them to be more successful in choosing the best major program for their interests.

**Presentation Index:** I-B 45 **Present Time:** 4:00 PM

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| King, Bryan; Radermacher, Derek | Robinson, David | Statistics |

**Portable Water-Filter System From Third World Countries**

My research project consists of building a portable water filter system for third world countries. This filter is a fast and temporary solution to obtaining safe drinking water until a permanent water filtering system is installed. The idea of the project is to build a removable water-filtering system that can go on top of the clay pot and purifies the water from bacteria, viruses and parasites. This filter will also reduce the water turbidity, alkalinity, dangerous dissolved particles and such. Water-borne diseases that can easily be prevented through proper sanitation and clean drinking water include but are not limited to diarrhea caused by the presence of viruses and bacteria, cholera caused by bacteria, different intestinal worm infections, and typhoid. These diseases can cause diarrhea, acute stomach aches, dehydration and even death. The portable water filter system is a temporary solution to avoiding these problems.

**Presentation Index:** I-B 46 **Present Time:** 4:00 PM

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Gebremariam, Reshet | Nicholson, James | Environmental and Technological Studies |

**p38 MAP Kinase Activates PGC-1a by Inhibiting the EDD Ubiquitin Ligase**

Peroxisome proliferator-activated receptor-γ coactivator 1-α (PGC-1α) is a human protein involved in both neurological and metabolic disorders, such as Parkinson's disease, Huntington's disease, obesity, and Type-2 diabetes. It is a transcriptional coactivator that turns on the transcription of many genes, including antioxidant genes. This plays an important role in protecting cells from oxidative stress. Low levels of PGC-1α have been implicated in causing some forms these diseases. We have been studying the regulation of PGC-1α to identify proteins that regulate PGC-1α. These would be ideal drug targets to restore PGC-1α levels in patients. p38 was previously shown to activate PGC-1α by phosphorylating it. This phosphorylation targets it for degradation by the ubiquitin ligase Cdc4, but also surprisingly stabilizes the levels of PGC-1α, possibly by inhibiting the action of another ubiquitin ligase. We have now identified EDD as another ubiquitin ligase that targets PGC-1α for degradation; here we identify that p38 inhibits the action of EDD and that the site of action is independent from the previously identified phosphorylation sites associated with Cdc4. Currently, we are characterizing this phosphorylation further. These results help to resolve the conundrum of how p38-mediated phosphorylation initiates both the stabilization and degradation of the PGC-1α protein. They imply that p38 functions as a switch from EDD-targeted degradation of PGC-1α to Cdc4-targeted degradation of PGC-1α.

**Presentation Index:** I-B 47 **Present Time:** 4:00 PM

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Cox, Karlee | Olson, Brian | Biological Sciences |

**Levels of High School and College Engagement in First Year Honor Students**

The University Honors Program at St Cloud State University is currently attempting to be more deliberate in their programming efforts and is always looking for new and improved ways to better serve their student population. In keeping with this practice, my internship research project is directed at first year honors students and their levels of engagement in their high school years as it compares to their levels of engagement during their freshman year of college. This will be achieved by distributing a survey to the first year honors students population with questions assessing their levels of engagement as well as their preferred types of engagement in both the high school and university setting. If time allows, a focus group will also be conducted in order to get more specific information about their experiences as well as which types of engagement contributed most to their identity as a honors student at the university. The results of this research are not yet available, but the expected implications include an influence over future programming through the University Honors Program, as well as potential data useful in the application review process.

**Presentation Index:** I-B 48 **Present Time:** 4:00 PM

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Wilson, Brittany | Barth, Carrie | Counseling and Community Psychology |

**Session J-GN** **Productivity** **Glacier North**

**Visibility in Medical Supply Chains**

Medical supplies are the second highest cost for hospitals after medical labor expenses. The supply chain for hospitals is very complex having materials coming from many different sources. Currently the medical industry lacks visibility in the supply chain and there is room for improvement. Supply chain visibility (SCV) is the ability of parts, components or products in transit to be tracked throughout the supply chain. The goal of SCV is to strengthen the supply chain by making data readily available to all stakeholders, including the customer. This is difficult because the medical industry has barriers such as confidentiality, regulations and a dynamic environment. If visibility is improved there would be less waste, increased efficiency, better relationships with suppliers, and overall profit would improve.

**Presentation Index:** J-GN 1 **Present Time:** 5:00 PM

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Gunderson, Ross; Shiraz, Fathima; Redford, Garrett | Polacco, Alexander | Management |

**I Have No Idea What is Installed in my Machine**

With the advancement in technology and the expansion of the internet, many computer users have no idea what is installed in their machines. This can happen by just opening an unknown email attachment or running an unknown program. Broadband users, people who use AOL, Instant Messaging, Kazaa (peer-to-peer trading), or anyone with a teenager or a younger sibling is at High risk. In order to avoid exposing your computer to such dangers, it will be necessary to know these threats and the risk associated with them. Knowing these threats and risks will provide computer users a better understanding on how easy it is to break into their machine and what motivates these attacks. The best way to avoid putting your computer at risk would be to use the appropriate preventive measures such as using protection software, using a firewall, making regular backups of critical data. After explaining all these concepts, I will be showing a hand on approach on how to effectively extract PDF files Objects from Malicious Files.

**Presentation Index:** J-GN 2 **Present Time:** 5:20 PM

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Ba, Alassane | Herath, Susantha | Information Systems |

**Finger Tracking Using Depth Images**

Finger tracking is an important technology in the field of human-computer interaction that allows computers to recognize the orientation of a person's hand. With finger tracking, programs can be created with more natural user interfaces that recognize hand gestures, allowing easier use of computers. Using Microsoft's Kinect for Windows, a basic hand tracking algorithm is implemented, which uses Microsoft's proprietary skeletal tracking framework to locate the hand, and subsequently a silhouette image of the hand and depth information on points of the silhouette are used to identify the finger and palm locations. This algorithm is then tested on a variety of computers to test the computing cost of the algorithm and determine how viable it is to deploy on standard computers.

**Presentation Index:** J-GN 3 **Present Time:** 5:40 PM

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Nguyen, Vien | Herath, Jayantha | Computer Science and Information Technology |

**Session J-VN** **Engineering** **Voyageurs North**

**Wind Tunnel**

This project attempts to remodel the wind tunnel at SCSU and design new experiments to be performed by the prospective Mechanical and Manufacturing Engineering (MME) students. Currently, the wind tunnel is equipped to perform only the airfoil experiment, where the students measure the pressures and velocities at different locations on an airfoil. With the new base that will be equipped with four load cells, students will be able to measure drag and lift forces on a miniature car model inside the wind tunnel. Likewise, the generator mounted inside the wind tunnel will allow the students to calculate the power generation of wind turbines at various wind speeds.

**Presentation Index:** J-VN 1 **Present Time:** 5:00 PM

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Lamichhane, Ujjwal; Onta, Uddar; Basnet, Santosh | Miller, Kenneth | Mechanical and Manufacturing Engineering |

**Air Water Generator**

The United Nations estimates that 1.2 billion people currently live in areas of physical water scarcity. Some of these geographical areas have a low yearly rainfall but high humidity levels. A way to extract water from humid air is by using an atmospheric water generator. This device is similar to a dehumidifier and can be employed to supply water in these locations. However energy costs to power atmospheric water generators prevent widespread use. To help solve this problem, an atmospheric water generator was designed with the goal of keeping operating costs at a minimum. The final design uses free renewable wind and geothermal energy sources. Preliminary calculations show the prototype is capable of producing an average daily amount of one liter per day using weather information from Cairo Egypt.

**Presentation Index:** J-VN 2 **Present Time:** 5:20 PM

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Tesfaye, Milkias; Boeck, Jason; Wardrip, Nathaniel | Zhao, Yongli | Mechanical and Manufacturing Engineering |

**Graphical User Interface Trivia Game**

This project is an interactive trivia game titled, General User Interface Trivia Game (GUITG). The idea for this project stems from a trivia game which displays the questions on the game application screen. The questions allow the user to input four options as an answer, but only one of those four answers is correct. The user physically presses the buttons to choose their answer and the game responds by stating whether it's a right answer or wrong answer. The plan is to design the game app to respond with a picture and/or a sound if the answer is right; if the answer is wrong the game app responds with a disappointing sound. The program coding used for this project is C#. The project will continue to be researched for improvements and other ideas for additional features and ease of use including: the use of LEDs to tell the user if the answer is right or wrong in combination with sounds and a wireless USB communicator to enable the user to access and control the game in different ways.

**Presentation Index:** J-VN 3 **Present Time:** 5:40 PM

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Raza, Faisal; Wyman, Matthew | Thamvichai, Ratchaneekorn | Electrical and Computer Engineering |

**Heat Treat Loading Station Improvement**

The student design team is working for Whirltronics, which is based out of Buffalo Minnesota and produces large quantities of precision lawn mower blades for various companies. The company uses a heat treating system to finish their products where operators must stand on an elevated platform to load and unload blades on overhead racks. The team was tasked with designing a solution to remove the platform and duplicate the current loading/unloading conditions at ground level while leaving the rest of the system unmodified. Research was conducted to determine the cost savings and cost avoidance of accomplishing such a project and a proposed budget of $8,825 was determined to be appropriate for a four year payback period with a 4.5% rate of return. The team brainstormed several possible solutions and utilized a design matrix with weighted design criteria including life, safety, cost, integration, complexity, corrosion resistance, and lead time to narrow down the list of possible designs. The prospective merits and flaws of each solution were further analyzed and a collective decision was made to design, build and install a suspended overhead scissor-lift that utilizes two vertically mounted hydraulic cylinders working in parallel to raise and lower a ten foot section of the rails that the heat treatment racks are suspended from. The team designed a lift composed primarily of A36 steel that has three degrees of freedom to account for vertical lift as well as minor translation in the X-Y plane and uses a 2.3 GPM hydraulic pump that integrates with the current programmable logic control system. Failure mode and effects analysis was conducted using FEA and hand calculations to ensure acceptable safety factors for normal operating conditions as well as account for worst-case-scenario binding conditions. The project timeline sets the completion date for the beginning of May at present.

**Presentation Index:** J-VN 4 **Present Time:** 6:00 PM

| Student Presenter(s): | Sponsor(s): | Department(s) |
|---|---|---|
| Pruss, Mitchell; Anderson, Andrew; Toews, Andrew | Bekkala, Andrew | Mechanical and Manufacturing Engineering |

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| Abebe, Ayda | Communicating Common Ground | Mutua, Eddah | 9:50 AM | Glacier North |
| Abeykoon, Kasun | Computer Crime Analysis Using Digital Forensics | Schmidt, Mark | 10:30 AM | Glacier South |
| Abeykoon, Thusith | Computer Crime Analysis Using Digital Forensics | Schmidt, Mark | 10:30 AM | Glacier South |
| Acharya, Jyotindra | Robotic Applications in Small Businesses | Polacco, Alexander | 9:00 AM | Ballroom |
| Ackerman, Jacque | Buffalo Trail-Marker Survey | Hiemenz, Melinda; Henry, Vonna | 9:00 AM | Ballroom |
| Adhikari, Subash | Mobile Forensics Analysis | Schmidt, Mark | 10:10 AM | Glacier South |
| Ahmed, Faisa | Transgenerational Fathead Minnow Estrogen Exposure Study | Schoenfuss, Heiko | 4:00 PM | Ballroom |
| Albright, Courtney | Leadership in the Classroom | Eyo, Bassey | 4:00 PM | Ballroom |
| Alfaro Cruz, Jose | Acoustic Vowel Space of Low Vowels | Koffi, Ettien | 9:00 AM | Ballroom |
| Allen, Rebecca | Mindfulness and Extraversion | Valdes, Leslie | 4:00 PM | Ballroom |
| Almuqrin, Afrah | Corpus Consultation of Inflectional Morpheme -s and Evaluation of Arab Learners of English | Madden, John | 9:30 AM | Alumni |
| Amisi, Thierry | Spring Survey of SCSU Students 2013 | Robinson, David; Kulas, John; Hammes, Michelle; Zerbib, Sandrine; Wagner, Steven; Frank, Stephen | 8:00 AM | Glacier South |
| Andersen, Joshua | A Comparison of Flight Experiences | Olson, Angela | 9:00 AM | Ballroom |
| Anderson, Andrew | Heat Treat Loading Station Improvement | Bekkala, Andrew | 6:00 PM | Voyageurs North |
| Anderson, Benjamyn | Alignment and Test of an All-Reflection Real Fringe DASH Interferometer | Harlander, John | 9:00 AM | Ballroom |
| Anderson, Benjamyn | Automated Robot Chassis | Petzold, Mark | 9:00 AM | Ballroom |
| Anderson, Robert | Resources and Strategies Used by Speech-Language Pathologists to Address Ethical Dilemmas | Whites, Margery | 9:00 AM | Ballroom |
| Arnold, Brandon | Leadership Through Athletics and Gender | Eyo, Bassey | 4:00 PM | Ballroom |
| Arola, Kyle | Restoration of Eastern White Pine at Mille Lacs Kathio State Park | Cook, William | 9:00 AM | Ballroom |
| Athmacharan, Varshni | Resources and Strategies Used by Speech-Language Pathologists to Address Ethical Dilemmas | Whites, Margery | 9:00 AM | Ballroom |
| Azo, Loris | Effects of Compound of Emergent Concerns on Larval Fathead Minnow Swimming Behavior | Schoenfuss, Heiko | 3:30 PM | Voyageurs North |
| Ba, Alassane | I Have No Idea What is Installed in my Machine | Herath, Susantha | 5:20 PM | Glacier North |

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| Student Presenter | Project Title | Sponsor(s) | Time | Room |
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| Bajracharya, Arbindra | Smartphone Controlled Omni-Directional Tri-Wheel Robot (SCOTR) | Hou, Ling | 2:00 PM | Ballroom |
| Bambrick, Christopher | Asian Carp as an Invasive Species in Minnesota | Simpson, Patricia | 4:00 PM | Ballroom |
| Barett, Lorren | ADHD in the Workplace | Valdes, Leslie | 4:00 PM | Ballroom |
| Barnes, Maya | Genocide Education in Minnesota's Public Schools | Julius, Matthew; Tabakin, Geoffrey | 4:00 PM | Ballroom |
| Basnet, Santosh | Wind Tunnel | Miller, Kenneth | 5:00 PM | Voyageurs North |
| Bates, Stephanie | The Value of Amateurs | Eyo, Bassey | 9:00 AM | Ballroom |
| Bauer, Lauren | Predicting Duration of Stay in Jail | Robinson, David; Xu, Hui | 10:10 AM | Voyageurs North |
| Baumann, Travis | Muscle Differentiation in the Waterfall Climbing Hawaiian Goby | Schoenfuss, Heiko | 8:20 AM | Voyageurs South |
| Beaudry, Katherine | Obesity in America and Education of Healthy Living | Zuo, Jiping | 9:00 AM | Ballroom |
| Becker, Christopher | Diversity in Media: On-Air Minorities in Twin Cities Television News | Heinrich, Lisa | 11:00 AM | Glacier South |
| Bedard, Marie | Transgenerational Fathead Minnow Estrogen Exposure Study | Schoenfuss, Heiko | 4:00 PM | Ballroom |
| Beehler, Kevin | Periodic Table | Krystyniak, Rebecca | 2:00 PM | Ballroom |
| Bendoraitis, Emily | Steps Speech-Language Pathologists Take to Resolve Ethical Dilemmas | Whites, Margery | 9:00 AM | Ballroom |
| Bennett, Adam | Political Geography in the Digital Age | John, Gareth | 4:30 PM | Voyageurs South |
| Berent, Taylor | Bioinformatic Analysis of the Valine, Leucine, and Isoleucine Biosynthetic Pathways in *Bacillus cereus* | Kvaal, Christopher | 2:00 PM | Ballroom |
| Berry, Julie | What is the Origin of the Holocaust? | Julius, Matthew; Tabakin, Geoffrey | 9:00 AM | Ballroom |
| Berthiaume, Alissa | Speech-Language Pathologists Satisfaction with Workplace Ethics Policies and Procedures | Whites, Margery | 9:00 AM | Ballroom |
| Biehl, Michael | Solving a Virtual Crime Using Digital Forensics Tools | Schmidt, Mark | 2:00 PM | Glacier South |
| Blank, Shawn | Teaching to the New Rhetorical Expectations of Audiences and Authors | Veeder, Rex | 2:40 PM | Voyageurs South |
| Bloch, Daniel | Predicting Successful Clients for Stearns County Community Corrections | Robinson, David; Xu, Hui | 9:50 AM | Voyageurs North |
| Blumhoefer, Michael | A Comparison of Flight Experiences | Olson, Angela | 9:00 AM | Ballroom |
| Boeck, Jason | Air Water Generator | Zhao, Yongli | 5:20 PM | Voyageurs North |
| Bowen, Syrena | Speech-Language Pathologists Satisfaction with Workplace Ethics Policies and Procedures | Whites, Margery | 9:00 AM | Ballroom |

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| Student Presenter | Project Title | Sponsor(s) | Time | Room |
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| Brezinka, Katie | Buffalo Trail-Marker Survey | Hiemenz, Melinda; Henry, Vonna | 9:00 AM | Ballroom |
| Brodt, Hanna | Our Height of Flight | Olson, Angela | 4:00 PM | Ballroom |
| Bruner, Molly | Types of Ethical Issues Faced by Speech-Language Pathologists | Whites, Margery | 4:00 PM | Ballroom |
| Brunette, Kirsten | Predicting Successful Clients for Stearns County Community Corrections | Robinson, David; Xu, Hui | 9:50 AM | Voyageurs North |
| Byiringiro, Janvier | Twese Hamwe (All of us) | Mutua, Eddah | 11:20 AM | Little Theatre |
| Campion, Ryan | Demineralization System Piping Evaluation | Zhao, Yongli | 10:10 AM | Voyageurs South |
| Carlson, Katie | Teaching Easy Onsets Effectively for Optimum Retention | Smits-Bandstra, Sarah | 2:00 PM | Ballroom |
| Carpenter, Mary | (Central) Auditory Processing in Young Adults on the Autism Spectrum | Estrem, Theresa; Nelson Crowell, Rebecca | 11:25 AM | Cascade |
| Carpenter, Mary | Counseling Young Adults on the Autism Spectrum Using Narrative Therapy | Nelson Crowell, Rebecca; Gilbertson, Amy | 2:00 PM | Ballroom |
| Cenolli, Eglantina | Promoting Leadership for Women in Higher Education | Mills, Michael | 11:00 AM | Voyageurs North |
| Chai, Joyce | Analysis of Multiple Repeats in Math Courses | Robinson, David | 4:00 PM | Ballroom |
| Chapala, Naveenbabu | Improvement in Facilities Layout of a Restaurant | Shah, Hiral | 11:00 AM | Glacier North |
| Chase, Taryn | Judicial System Funnel | Robinson, David; Xu, Hui | 9:30 AM | Voyageurs North |
| Chen, Li | Will Green Trends Result in More Insourcing in Global Supply Chains? | Polacco, Alexander | 2:00 PM | Ballroom |
| Chen, Zepu | Computer Forensics Project | Schmidt, Mark | 2:20 PM | Glacier South |
| Chilukuri, Koushik | Digital Tracing: Revolutionary Methods for Crime Scene Investigation | Schmidt, Mark | 9:50 AM | Glacier South |
| Chitrakar, Baadal | Effect of Persistent Organic Pollutants on Proliferative Capacity of Immune Cells | Cetkovic-Cvrlje, Marina | 9:00 AM | Ballroom |
| Chitrakar, Iva | Bioinformatic Analysis of the Arginine and Proline Biosynthetic Pathway in the *Bacillus cereus* | Kvaal, Christopher | 4:00 PM | Ballroom |
| Choksi, Rujuta | Analyzing and Improving Current Layout of Grocery Stores Using 5S Tools | Shah, Hiral | 11:40 AM | Voyageurs South |
| Chrisinger, Alyssa | The Analysis of the Culture, Issues, and Economic Impact of the Spanish Speaking Community in the St. Cloud Area | Blinnikov, Mikhail | 2:40 PM | Voyageurs North |
| Christianson, Marjorielee | Diversity in Media: Halloween Costume Advertising | Heinrich, Lisa | 11:45 AM | Glacier South |

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| Collette, Ashlee | Smartphone Controlled Omni-Directional Tri-Wheel Robot (SCOTR) | Hou, Ling | 2:00 PM | Ballroom |
| Colpaert, Kathrine | The Role of English in Saudi Arabia | Schwartz, Michael | 10:30 AM | Alumni |
| Colpaert, Kathrine | How Do We Know What Our Students Know? An Alternative Method of Assessment. | Jarvis, Shawn | 2:20 PM | Alumni |
| Cox, Karlee | p38 MAP Kinase Activates PGC-1a by Inhibiting the EDD Ubiquitin Ligase | Olson, Brian | 4:00 PM | Ballroom |
| Cox, Megan | Impacts of Estrogenic Effluents on Resident and Caged Fish in St. Croix Tributaries | Schoenfuss, Heiko | 4:00 PM | Ballroom |
| Curley, Isaac | Propaganda, Media and Genocide | Julius, Matthew; Tabakin, Geoffrey | 4:00 PM | Ballroom |
| Czech, Matt | The Great Lakes and Invasive Species | Lindstrom, Sheila | 2:00 PM | Ballroom |
| Dahl, Callie | Genocide Education in Minnesota's Public Schools | Julius, Matthew; Tabakin, Geoffrey | 4:00 PM | Ballroom |
| Dahl, Elizabeth | Teaching Pausing for Optimum Transfer Outside of the Clinical Setting | Smits-Bandstra, Sarah | 2:00 PM | Ballroom |
| Daleiden, Jillian | Types of Ethical Issues Faced by Speech-Language Pathologists | Whites, Margery | 4:00 PM | Ballroom |
| Danzeisen, Ali | Bright Minds, Bright Futures: Empowering Young Minds to Lead | Eyo, Bassey | 4:00 PM | Ballroom |
| De Silva, Samera | Effect of DDE on Insulitis Development and Insulin Expression in NOD Mouse Model of Type 1 | Cetkovic-Cvrlje, Marina | 2:00 PM | Ballroom |
| Devries, Crystal | Will Green Trends Result in More Insourcing in Global Supply Chains? | Polacco, Alexander | 2:00 PM | Ballroom |
| Dillon, Jeffrey | Green Manufacturing and Renewable Energy in Small Businesses | Polacco, Alexander | 2:00 PM | Ballroom |
| Ditoubilianou, Flamine marie | Global Leadership Compentencies: Implications for SCSU students | Eyo, Bassey | 4:00 PM | Ballroom |
| Doumbia, Aminata | Communicating Common Ground | Mutua, Eddah | 9:50 AM | Glacier North |
| Drexel, Catherine | Journaling and Mood | Valdes, Leslie | 4:00 PM | Ballroom |
| Duerkop, Peter | Plant Functional Response to Prescribed Fire Regime Variables | Cook, William | 9:00 AM | Ballroom |
| Dumke, Addison | Synthesis of an Anti-Cancer Drug Using Goniothalamin as a Natural Product Template | Mechelke, Mark | 9:00 AM | Ballroom |
| Dunnigan, Michael | Smart Cart | Yao, Aiping | 4:00 PM | Ballroom |
| Duong, Quyen | Judicial System Funnel | Robinson, David; Xu, Hui | 9:30 AM | Voyageurs North |
| Duong, Quyen | Verification Bias Correction in the ROC Curve Estimation for Continuous Outcomes | Zhang, Shiju | 2:00 PM | Ballroom |

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| Edwards, Bretta | Investigation of Success in Blended Learning Sections of ENGL 191 and LIB 180, Using ISRS and Map-Works Data | Robinson, David; Cogdill, Sharon | 9:00 AM | Ballroom |
| Elker, Eric | The Roles of Percussion in the Romantic and Post-Romantic Periods of Music | Verrilli, Catherine | 2:40 PM | Alumni |
| Ellis, Brittney | Going Green Can Help Reduce Healthcare Costs | Polacco, Alexander | 4:00 PM | Ballroom |
| Elshikh, Amira | Effect of DDE on Insulitis Development and Insulin Expression in NOD Mouse Model of Type 1 | Cetkovic-Cvrlje, Marina | 2:00 PM | Ballroom |
| Emslander, Erin | Pesticides and Parkinsons | Lindstrom, Sheila | 9:00 AM | Ballroom |
| Engelen, Kelsey | Environmental Development and Human Displacement: An Analysis of the Divergence and Integration of Environmental and Human Needs in Botswana and Nepal | Blinnikov, Mikhail | 9:00 AM | Ballroom |
| Engh, Kaycie | Buffalo Trail-Marker Survey | Hiemenz, Melinda; Henry, Vonna | 9:00 AM | Ballroom |
| Engstrom, Laura | Going Green Can Help Reduce Healthcare Costs | Polacco, Alexander | 4:00 PM | Ballroom |
| Erdahl, Thomas | Investigation of Success in Blended Learning Sections of ENGL 191 and LIB 180, Using ISRS and Map-Works Data | Robinson, David; Cogdill, Sharon | 9:00 AM | Ballroom |
| Erickson, Rikki | On the Graduation Rates of Students in Developmental Math | Robinson, David | 2:00 PM | Ballroom |
| Erickson, Sarah | Resources and Strategies Used by Speech-Language Pathologists to Address Ethical Dilemmas | Whites, Margery | 9:00 AM | Ballroom |
| Erickson, Sarah | Comparing the Preschool Language Scale: 4th and 5th Editions | Estrem, Theresa | 4:00 PM | Ballroom |
| Erpelding, Maren | Is Organic Food Really Healthier? | Lindstrom, Sheila | 2:00 PM | Ballroom |
| Eschrich, Alyssa | What is the Origin of the Holocaust? | Julius, Matthew; Tabakin, Geoffrey | 9:00 AM | Ballroom |
| Evans, Zoegar | Bioinfromatic Analysis of the Alanine, Aspartate and Glutamate Metabolism in the Pathway in *Bacillus cereus* | Kvaal, Christopher | 2:00 PM | Ballroom |
| Ezepue, Patricia | Accessibility to Oral Care in Litchfield | Hiemenz, Melinda; Henry, Vonna; Bajari, Ann; Zelenak, Mary | 9:00 AM | Ballroom |
| Feifarek, David | Modulation of Estrogenic Exposure Effects Mediated through Dietary and Temperature Regimens in Male Fathead Minnows | Schoenfuss, Heiko | 2:00 PM | Ballroom |

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| Ferguson, Elizabeth | Slaves in 19th-Century St. Cloud: Presenting the Rhetoric of Race in a Digital Archive | Cogdill, Sharon | 2:20 PM | Voyageurs South |
| Fettig, Samantha | Riluzole Reverses the Effects of Chemoconvulsants Acting on Glutamatergic Neurotransmission in Planaria | Ramakrishnan, Latha | 2:00 PM | Ballroom |
| Fiecke, Amy | Genocide Education in Minnesota's Public Schools | Julius, Matthew; Tabakin, Geoffrey | 4:00 PM | Ballroom |
| Fiedler, Shawn | Green Manufacturing and Renewable Energy in Small Businesses | Polacco, Alexander | 2:00 PM | Ballroom |
| Fischer, Kelsey | What is the Origin of the Holocaust? | Julius, Matthew; Tabakin, Geoffrey | 9:00 AM | Ballroom |
| Fitts, Carlos | Psychology of Genocide | Julius, Matthew; Tabakin, Geoffrey | 2:00 PM | Ballroom |
| Flatz, Cole | FSAE: Car Project | Miller, Kenneth | 8:40 AM | Voyageurs South |
| Fonken, Gael | Ambiguous Liaisons, Oil Politics, and Indigenous Survival in the Amazon | Lavenda, Robert | 4:30 PM | Voyageurs North |
| Fonss, Rebecca | Assessing the Kuder Journey Interest Inventory for the Career Service Center at SCSU | Barth, Carrie | 2:00 PM | Ballroom |
| Frank, Kendall | Choosing a Vendor Managed Inventory System | Polacco, Alexander | 9:00 AM | Ballroom |
| Frempong, Nora | Effect of DDE on Type 1 Diabetes Incidence in NOD Mouse Model | Cetkovic-Cvrlje, Marina | 2:00 PM | Ballroom |
| Froelich, Jonathan | An Investigation Into the Knowledge and Beliefs of Earthquakes in California and the Rebuilding Process | Simpson, Patricia | 9:00 AM | Ballroom |
| Frost, Hannah | The Molding of Artisans: A Field Based Study on the Marketing Methods of Nicaraguan Ceramicists | Blinnikov, Mikhail | 2:00 PM | Ballroom |
| Fuchs, Matt | Pesticides and Parkinsons | Lindstrom, Sheila | 9:00 AM | Ballroom |
| G.C., Deepak | A Digital Forensic Quandary: Who Done it? | Schmidt, Mark | 3:00 PM | Glacier South |
| Gahm, Noah | Gayly Celebrating Minnesota: A Musical Program | Wells, Scott | 11:00 AM | Little Theatre |
| Gahungu, Guy Armel | Twese Hamwe (All of us) | Mutua, Eddah | 11:20 AM | Little Theatre |
| Gaikwad, Sampada | Investigation of Success in Blended Learning Sections of ENGL 191 and LIB 180, Using ISRS and Map-Works Data | Robinson, David; Cogdill, Sharon | 9:00 AM | Ballroom |
| Galloway, Ashley | Kandioyohi County Public Health Customer Satisfaction | Hiemenz, Melinda; Warner, Susan | 2:00 PM | Ballroom |
| Gardner, Colin | Electrochemical and AFM Study of Oxide Over-Layers on Magnetite | Petitto, Sarah | 2:00 PM | Ballroom |
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| Gebur, Kevin | Genocide Education in Minnesota's Public Schools | Julius, Matthew; Tabakin, Geoffrey | 4:00 PM | Ballroom |
| Gebur, Kevin | The Thrill of Flight | Olson, Angela | 4:00 PM | Ballroom |
| Gehrman, Diana | Community Assessment of Diabetic Foot Ulcers in Concepcion, Chile | Hiemenz, Melinda; Henry, Vonna | 2:00 PM | Ballroom |
| Geller, Karly | Effect of DDE on Insulitis Development and Insulin Expression in NOD Mouse Model of Type 1 | Cetkovic-Cvrlje, Marina | 2:00 PM | Ballroom |
| Ghazal, Leila | Effect of DDE on Type 1 Diabetes Incidence in NOD Mouse Model | Cetkovic-Cvrlje, Marina | 2:00 PM | Ballroom |
| Gill, Taylor | Mindfulness and Extraversion | Valdes, Leslie | 4:00 PM | Ballroom |
| Gip, Melanie | Stearns County Public Health Breastfeeding Resources | Hiemenz, Melinda; DeBruycker, Jo | 9:00 AM | Ballroom |
| Girtz, Stephen | Investigation into the Knowledge, Beliefs and Behaviors of Midwesterners into Issues Regarding the Great Lakes | Hoff, Jean; Simpson, Patricia | 9:00 AM | Ballroom |
| Godding, Micah | Comparing Genocides | Julius, Matthew; Tabakin, Geoffrey | 4:00 PM | Ballroom |
| Goerdt, Briana | Buffalo Trail-Marker Survey | Hiemenz, Melinda; Henry, Vonna | 9:00 AM | Ballroom |
| Golden, Kadylyn | Global Population Growth | Lindstrom, Sheila | 9:00 AM | Ballroom |
| Gong, Hwee Kiat | Effect of Persistent Organic Pollutants on Proliferative Capacity of Immune Cells | Cetkovic-Cvrlje, Marina | 9:00 AM | Ballroom |
| Gopali, Bishow | Expression, Isolation, Purification and Analysis of ALDH-9A1, a Fusion Protein from *E.Coli* | Sreerama, Lakshmaiah | 9:00 AM | Ballroom |
| Gordon, Rebekah | The Use and Usefulness of Collocations Dictionaries | Madden, John | 10:10 AM | Alumni |
| Gould, Peter | Medical Device Design Process | Covey, Steven | 9:00 AM | Voyageurs South |
| Gourisetty, Ramya | Improvement in Facilities Layout of a Restaurant | Shah, Hiral | 11:00 AM | Glacier North |
| Graff, Isaac | FSAE: Car Project | Miller, Kenneth | 8:40 AM | Voyageurs South |
| Grave, Rachel | On the Relationship of ACT Reading Scores and Accuplacer Scores | Robinson, David | 2:00 PM | Ballroom |
| Greenwaldt, Courtney | Accessibility to Oral Care in Litchfield | Hiemenz, Melinda; Henry, Vonna; Bajari, Ann; Zelenak, Mary | 9:00 AM | Ballroom |
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| Grussing, Cara | Creating a Peer Mentor Program for Underprepared Students at a Technical and Community College | Barth, Carrie | 9:00 AM | Ballroom |
| Gunderson, Ross | Visibility in Medical Supply Chains | Polacco, Alexander | 5:00 PM | Glacier North |
| Habisch, Courtney | Occupational Therapy In A School Setting | Valdes, Leslie | 2:00 PM | Ballroom |
| Hallak, Rami | Creating a STELLA Software Model to Simulate Nitrogen Removal During the Wastewater Treatment Process | Rose, Charles | 2:00 PM | Ballroom |
| Halonen, Daniel | Investigation of Success in Blended Learning Sections of ENGL 191 and LIB 180, Using ISRS and Map-Works Data | Robinson, David; Cogdill, Sharon | 9:00 AM | Ballroom |
| Halvorson, Alex | Our Height of Flight | Olson, Angela | 4:00 PM | Ballroom |
| Hamberg, Autumn | Examination of Minnesota Diphthongs | Koffi, Ettien | 2:00 PM | Ballroom |
| Hammad, Sarah | Psychology of Genocide | Julius, Matthew; Tabakin, Geoffrey | 2:00 PM | Ballroom |
| Hansen, Sarah | Characterization of Leukocytes Involved in Pathogenesis of Type 1 Diabetes in NOD Mice Exposed to a Persistent Organic Pollutant | Cetkovic-Cvrlje, Marina | 2:00 PM | Ballroom |
| Harstad, Brianna | Psychology of Genocide | Julius, Matthew; Tabakin, Geoffrey | 2:00 PM | Ballroom |
| Harter, Joseph | Lateral Field Time-of-Flight for Determination of Surface Charge Carrier Mobility | Lidberg, Russell | 9:00 AM | Ballroom |
| Hartzell, Kaitlyn | Ethical Leadership and the LGBT Community | Eyo, Bassey | 8:20 AM | Glacier North |
| Hartzell, Kaitlyn | Three Generations of Flight Experience | Olson, Angela | 11:20 AM | Glacier North |
| Hartzell, Kaitlyn | Psychology of Genocide | Julius, Matthew; Tabakin, Geoffrey | 2:00 PM | Ballroom |
| Haugen, Leah | Phonetic Variation Between P and B | Koffi, Ettien | 9:00 AM | Ballroom |
| Heck, Tara | School Psychology & Attention | Valdes, Leslie | 9:00 AM | Ballroom |
| Heiber, Rachel | Forests | Lindstrom, Sheila | 2:00 PM | Ballroom |
| Heikkila, William | Effects of Multigenerational Exposure of Fathead Minnows to 17β-Estradiol Alters Predator Performance and Survival | Schoenfuss, Heiko | 11:00 AM | Voyageurs South |
| Hemmesch, Scott | Honors Leadership Institute | Eyo, Bassey | 2:00 PM | Ballroom |
| Hemmesch, Scott | Psychology of Genocide | Julius, Matthew; Tabakin, Geoffrey | 2:00 PM | Ballroom |
| Hennes, Jack | Resisting the Mechanistic Model: Praxis, Technology, and Meaningful Practice | Heiman, James | 2:00 PM | Voyageurs South |

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| Herrala, Brent | Buffalo Trail-Marker Survey | Hiemenz, Melinda; Henry, Vonna | 9:00 AM | Ballroom |
| Heuring, Benjamin | Color Preference | Valdes, Leslie | 4:00 PM | Ballroom |
| Hicks, Elizabeth | What is the Origin of the Holocaust? | Julius, Matthew; Tabakin, Geoffrey | 9:00 AM | Ballroom |
| Hill, Mackenna | Accessibility to Oral Care in Litchfield | Hiemenz, Melinda; Henry, Vonna; Bajari, Ann; Zelenak, Mary | 9:00 AM | Ballroom |
| Hislop, Travis | Gelatin Holography with Ferric Ammonium Citrate | Sinko, John | 2:00 PM | Ballroom |
| Hoganson, Jessica | Effect of DDE on Insulitis Development and Insulin Expression in NOD Mouse Model of Type 1 | Cetkovic-Cvrlje, Marina | 2:00 PM | Ballroom |
| Hogrefe, Zachary | Geographic Literacy Between International and Non-International Students at SCSU | Torguson, Jeffrey | 4:00 PM | Ballroom |
| Holm, Alex | A New Information System to Track Graduation Time Lines | Schmidt, Mark | 4:00 PM | Ballroom |
| Holman, Whitney | Counseling Young Adults on the Autism Spectrum Using Narrative Therapy | Nelson Crowell, Rebecca; Gilbertson, Amy | 2:00 PM | Ballroom |
| Holman, Whitney | Speech Planning in Persons with Parkinson's Disease: An Evoked Response Potential Study | Smits-Bandstra, Sarah | 2:00 PM | Ballroom |
| Holmes, Kelley | Perceived Importance of Strength and Conditioning Relative to Sports Orientation in Junior Alpine Ski Racers | Bacharach, David | 9:00 AM | Ballroom |
| Holstad, Deb | Individual Learning Styles | Imbra, Christine | 9:00 AM | Ballroom |
| Holstad, Maren | Stearns County Public Health Breastfeeding Resources | Hiemenz, Melinda; DeBruycker, Jo | 9:00 AM | Ballroom |
| Honnold, Kistyn | Looking Good at a Cost | Lindstrom, Sheila | 2:00 PM | Ballroom |
| Horn, Jacob | Alignment and Test of an All-Reflection Real Fringe DASH Interferometer | Harlander, John | 9:00 AM | Ballroom |
| Horn, Jacob | Sleep Cycle Monitoring Alarm Clock | Thamvichai, Ratchaneekorn | 9:00 AM | Ballroom |
| Horn, Rocky | A Look at SCSU Athletics | Imbra, Christine | 9:00 AM | Ballroom |
| Howard, John | Smart Cart | Yao, Aiping | 4:00 PM | Ballroom |
| Hoyme, Alissa | Resources and Strategies Used by Speech-Language Pathologists to Address Ethical Dilemmas | Whites, Margery | 9:00 AM | Ballroom |
| Hughes, Tyla | Attention and Aging Stereotypes | Valdes, Leslie | 9:00 AM | Ballroom |

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| Idifle, Abdikadir | Analysis of Recidivism Among Stearns County Corrections Clients | Robinson, David; Xu, Hui | 10:30 AM | Voyageurs North |
| Igoe, Jacob | Stearns County Public Health Breastfeeding Resources | Hiemenz, Melinda; DeBruycker, Jo | 9:00 AM | Ballroom |
| Ilboudo, Patrick | Spring Survey of SCSU Students 2013 | Robinson, David; Kulas, John; Hammes, Michelle; Zerbib, Sandrine; Wagner, Steven; Frank, Stephen | 8:00 AM | Glacier South |
| Ilboudo, Patrick | On the Success of SCSU Students with High ACT Scores | Robinson, David | 2:00 PM | Ballroom |
| Imady, Essma | The Influence of Islamic Textiles on Matisse | Leung, Godfrey | 3:50 PM | Glacier North |
| Irving-Hewey, Ruby | A Comparative Analysis of Contaminant Removal in Two Residential Stormwater Ponds | Schoenfuss, Heiko | 8:00 AM | Voyageurs South |
| Ivancich, Kelsey | International Student Usage of Campus Recreation Facilities at the College of St. Benedict | Barth, Carrie | 9:00 AM | Ballroom |
| Jagodzinski, Nicole | A Comparative Study of Success Measures in Off-Campus and On-Campus First Year Students at St. Cloud State University | Barth, Carrie; Robinson, David | 9:00 AM | Ballroom |
| Jendro, Milissa | Bioinformatic Analysis of the Phenylalanine and Tyrosine Biosynthetic Pathways of *Bacillus cereus* ATCC 14579 | Kvaal, Christopher | 4:00 PM | Ballroom |
| Jenson, Grace | Impacts of Estrogenic Effluents on Resident and Caged Fish in St. Croix Tributaries | Schoenfuss, Heiko | 4:00 PM | Ballroom |
| Jesku, Eralda | Perceptions of Principals About Their Roles, Capacities and Difficulties in Implementing Decentralization Reform in Albania | Eller, John | 4:30 PM | Glacier North |
| Johnson, Derek | Going Green Can Help Reduce Healthcare Costs | Polacco, Alexander | 4:00 PM | Ballroom |
| Johnson, Jared | Psychology of Genocide | Julius, Matthew; Tabakin, Geoffrey | 2:00 PM | Ballroom |
| Johnson, Jeffrey | Optimization of Electrochemical Deposition | Neu, Donald | 9:00 AM | Ballroom |
| Johnson, Zach | Stem Cells and Society: What Secondary Students Know and Believe About Regenerative Medicine | Hoff, Jean | 2:00 PM | Ballroom |
| Johnston, Faith | Medical Device Design Process | Covey, Steven | 9:00 AM | Voyageurs South |

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| Kanak, Samantha | Leadership Through Athletics and Gender | Eyo, Bassey | 4:00 PM | Ballroom |
| Kang, Hyemi | Predicting Duration of Stay in Jail | Robinson, David; Xu, Hui | 10:10 AM | Voyageurs North |
| Kanne, Sunandha | Improvement in Facilities Layout of a Restaurant | Shah, Hiral | 11:00 AM | Glacier North |
| Katagowni, Goutham Raj | Optimization of Maintenance Repair and Operating Supplies (MRO) Process at an Appliance Manufacturing Company | Shah, Hiral | 11:40 AM | Glacier North |
| Katzmarek, Angela | Processing Speed Variation | Guster, Dennis | 8:00 AM | Voyageurs North |
| Kelly, Kimberly | Spring Survey of SCSU Students 2013 | Robinson, David; Kulas, John; Hammes, Michelle; Zerbib, Sandrine; Wagner, Steven; Frank, Stephen | 8:00 AM | Glacier South |
| Kelm, Jordan | Choosing a Vendor Managed Inventory System | Polacco, Alexander | 9:00 AM | Ballroom |
| Kettlewell, Jason | Sleep Cycle Monitoring Alarm Clock | Thamvichai, Ratchaneekorn | 9:00 AM | Ballroom |
| Keyworth, Paul | The Acoustic Correlates of Stress-Shifting Suffixes in Native and Nonnative English | Koffi, Ettien | 9:30 AM | Cascade |
| Khadka, Elina | Flu Vaccine - So How Effective is it? | Antunez, Hector | 9:00 AM | Ballroom |
| Khan, Adib | Smart Mug | Yao, Aiping | 9:00 AM | Ballroom |
| Khan, Maham | Optimization of Maintenance Repair and Operating Supplies (MRO) Process at an Appliance Manufacturing Company | Shah, Hiral | 11:40 AM | Glacier North |
| King, Bryan | Declared Major and Duration Analyses | Robinson, David | 4:00 PM | Ballroom |
| Klasen, Scott | Salt and pH-Dependent Swelling of Poly(N-isopropyl acrylamide-co-acrylic acid) Hydrogel Composites | Sivaprakasam, Kannan | 2:00 PM | Ballroom |
| Kleven, Charles | Going Green Can Help Reduce Healthcare Costs | Polacco, Alexander | 4:00 PM | Ballroom |
| Klinkhammer, Nichole | Stearns County Public Health Breastfeeding Resources | Hiemenz, Melinda; DeBruycker, Jo | 9:00 AM | Ballroom |
| Klinkner, Brandy | How Safe is Fluoride in Our Water? | Lindstrom, Sheila | 9:00 AM | Ballroom |

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| Student Presenter | Project Title | Sponsor(s) | Time | Room |
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| Knutson, Rhiannon | Water Into...Jet Fuel? | Lindstrom, Sheila | 4:00 PM | Ballroom |
| Kodali, Prudhvi Krishna | Inventory Management at a Grocery Store | Shah, Hiral | 12:00 PM | Voyageurs South |
| Koethe, Matthew | Using Social Media to Promote Small Organizations | Cogdill, Sharon | 11:20 AM | Voyageurs North |
| Koh, Pei Yoong | On the Development of an Algorithm for Awarding Scholarships | Robinson, David | 2:00 PM | Ballroom |
| Kohler, Benjamin | Second Language Acquisition with Rosetta Stone | Mueller, Isolde | 2:00 PM | Alumni |
| Korman, Karlee | Teaching Pausing for Optimum Transfer Outside of the Clinical Setting | Smits-Bandstra, Sarah | 2:00 PM | Ballroom |
| Kowalke, Lori | What is the Origin of the Holocaust? | Julius, Matthew; Tabakin, Geoffrey | 9:00 AM | Ballroom |
| Kpaahkpai, Nathaniel | Offshore Drilling | Lindstrom, Sheila | 2:00 PM | Ballroom |
| Kramer, Richard | Expression and Characterization of Lytic *Staphylococcus Aureus* Phage P68 Holin Proteins in *Escherichia Coli* | Kvaal, Christopher | 9:55 AM | Cascade |
| Kroll, Alastriona | Punk Goes Criminal: Does Music Transform Youth Into a Political Threat? | Blinnikov, Mikhail | 9:00 AM | Ballroom |
| Kroll, Stephanie | Southeast Asia Education Abroad Experience: Does it Benefit the Hmong Student | Barth, Carrie | 4:00 PM | Ballroom |
| Lade, Daniel | Unmanned Aerial Vehicle: Quadrotor | Glazos, Michael | 4:00 PM | Ballroom |
| Lakings, Ross | Determination of Ibuprofen in Waste Water by Means of Single Drop Micro Extraction Coupled with Gas Chromatography/Mass Specrometer | Jeannot, Michael | 2:00 PM | Ballroom |
| Lamichhane, Ujjwal | Wind Tunnel | Miller, Kenneth | 5:00 PM | Voyageurs North |
| Lamsal, Vivek | Effect of Persistent Organic Pollutants on Proliferative Capacity of Immune Cells | Cetkovic-Cvrlje, Marina | 9:00 AM | Ballroom |
| Larson, Halie | What is the Origin of the Holocaust? | Julius, Matthew; Tabakin, Geoffrey | 9:00 AM | Ballroom |
| Larson, Jillian | Accessibility to Oral Care in Litchfield | Hiemenz, Melinda; Henry, Vonna; Bajari, Ann; Zelenak, Mary | 9:00 AM | Ballroom |
| Larson, KatiLee | Do Re Me: Sight Reading Music Notation | Valdes, Leslie | 9:00 AM | Ballroom |
| Lauer, Michael | The Scenery of Urban Sprawl | Lindstrom, Sheila | 2:00 PM | Ballroom |
| Lea, Allan | Effect of Persistent Organic Pollutants on Proliferative Capacity of Immune Cells | Cetkovic-Cvrlje, Marina | 9:00 AM | Ballroom |
| Lee, Seng Tiong | Stearns County Public Health Breastfeeding Resources | Hiemenz, Melinda; DeBruycker, Jo | 9:00 AM | Ballroom |

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| Student Presenter | Project Title | Sponsor(s) | Time | Room |
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| Lehrke, Hannah | Propaganda, Media and Genocide | Julius, Matthew; Tabakin, Geoffrey | 4:00 PM | Ballroom |
| Lenz, Joseph | Green Manufacturing and Renewable Energy in Small Businesses | Polacco, Alexander | 2:00 PM | Ballroom |
| Leo, Frank | American Maglev Trains | Hoff, Jean | 4:00 PM | Ballroom |
| Li, Zhengyi | Predicting Duration of Stay in Jail | Robinson, David; Xu, Hui | 10:10 AM | Voyageurs North |
| Li, Zhengyi | High Dimensional Model Selection and Validation: A Comparison Study | Xu, Hui | 2:20 PM | Glacier North |
| Lindberg, Jennifer | A Review of Mindfulness Benefits From Childhood to Young Adulthood | Valdes, Leslie | 2:00 PM | Ballroom |
| Lo, Siu-Pong | Investigation of Success in Blended Learning Sections of ENGL 191 and LIB 180, Using ISRS and Map-Works Data | Robinson, David; Cogdill, Sharon | 9:00 AM | Ballroom |
| Louis, Deborah | Kandioyohi County Public Health Customer Satisfaction | Hiemenz, Melinda; Warner, Susan | 2:00 PM | Ballroom |
| Loxtercamp, Nicholas | Design and Analysis of Grain Ship Unloaders | Bekkala, Andrew | 3:50 PM | Voyageurs North |
| Lu, Shan | Judicial System Funnel | Robinson, David; Xu, Hui | 9:30 AM | Voyageurs North |
| Lyons, Alexandra | Psychology of Genocide | Julius, Matthew; Tabakin, Geoffrey | 2:00 PM | Ballroom |
| Magnan, Logan | Medical Device Design Process | Covey, Steven | 9:00 AM | Voyageurs South |
| Maharjan, Kuldip | Smart Mug | Yao, Aiping | 9:00 AM | Ballroom |
| Mahoney, Johanna | Community Assessment of Diabetic Foot Ulcers in Concepcion, Chile | Hiemenz, Melinda; Henry, Vonna | 2:00 PM | Ballroom |
| Maina, Naomi | Social Experiences of African Immigrant Women in St. Cloud, Minnesota | Mwangi, Mumbi | 3:30 PM | Glacier North |
| Malla, Minesh | Bioinformatic Analysis of Tryptophan Biosynthetic Pathway in *Bacillus cereus* ATCC 14579 | Kvaal, Christopher | 4:00 PM | Ballroom |
| Malla, Sandesh | Using Agile Project Management Technology in Dynamic Environments | Polacco, Alexander | 2:00 PM | Ballroom |
| Malla, Sandesh | Analysis of Solid State Drive | Schmidt, Mark | 3:20 PM | Glacier South |
| Malone, Kayla | Germination Requirements for Native Minnesota Prairie Forbs | Arriagada, Jorge | 9:00 AM | Ballroom |

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| Student Presenter | Project Title | Sponsor(s) | Time | Room |
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| Manuel, Laura | A Comparison of Flight Experiences | Olson, Angela | 9:00 AM | Ballroom |
| Manuel, Laura | Propaganda, Media and Genocide | Julius, Matthew; Tabakin, Geoffrey | 4:00 PM | Ballroom |
| Martell, Heather | Stearns County Public Health Breastfeeding Resources | Hiemenz, Melinda; DeBruycker, Jo | 9:00 AM | Ballroom |
| Martin, Alexander | Smart Cart | Yao, Aiping | 4:00 PM | Ballroom |
| Martin, James | A New Information System to Track Graduation Time Lines | Schmidt, Mark | 4:00 PM | Ballroom |
| McInnis, Marnie | Speech-Language Pathologists Satisfaction with Workplace Ethics Policies and Procedures | Whites, Margery | 9:00 AM | Ballroom |
| McIntyre, Jennifer | High Potentials-Employee Assessment Tools | Davis, Elaine | 2:00 PM | Ballroom |
| McKimmy, Kent | Propaganda, Media and Genocide | Julius, Matthew; Tabakin, Geoffrey | 4:00 PM | Ballroom |
| McWilliams, Erin | Teaching Pausing Effectively for Optimum Retention | Smits-Bandstra, Sarah | 2:00 PM | Ballroom |
| Meade, Jesse | Immigration Path and Livelihood of Somali People in Stearns County | Torguson, Jeffrey | 9:00 AM | Ballroom |
| Meemaduma, Dayan | Demineralization System Piping Evaluation | Zhao, Yongli | 10:10 AM | Voyageurs South |
| Meissner, Tanner | Green Logistics | Polacco, Alexander | 2:00 PM | Ballroom |
| Mekuria, Tedi | Struggle of Assmilation in Somali Community; Assimilate or Maintain Ethnic Identity | Blinnikov, Mikhail; Butenhoff, Linda | 2:00 PM | Ballroom |
| Merrell, Bruce | A New Information System to Track Graduation Time Lines | Schmidt, Mark | 4:00 PM | Ballroom |
| Metzger, Nathan | Regulation of PGC-1beta: A Protein Implicated in Neurodegenerative Disorders | Olson, Brian | 1:15 PM | Cascade |
| Mezzano, Sara | Water Into...Jet Fuel? | Lindstrom, Sheila | 4:00 PM | Ballroom |
| Michael, Kimberly | Kandioyohi County Public Health Customer Satisfaction | Hiemenz, Melinda; Warner, Susan | 2:00 PM | Ballroom |
| Miles, Kelly | Impacts of Estrogenic Effluents on Resident and Caged Fish in St. Croix Tributaries | Schoenfuss, Heiko | 4:00 PM | Ballroom |
| Milkovich, Steven | Comparison of Barefoot and Shod, Sub Maximal Triple Jumping | Street, Glenn | 9:00 AM | Ballroom |
| Miller, Meghan | Speech-Language Pathologists Satisfaction with Workplace Ethics Policies and Procedures | Whites, Margery | 9:00 AM | Ballroom |
| Mills, Samantha | Comparing Genocides | Julius, Matthew; Tabakin, Geoffrey | 4:00 PM | Ballroom |

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| Mitiku, Aida | Remote Air Quality Monitor Device | Glazos, Michael | 9:00 AM | Ballroom |
| Mix, Rebekah | Comparing Genocides | Julius, Matthew; Tabakin, Geoffrey | 4:00 PM | Ballroom |
| Mogal, Priyanka | Analyzing and Improving Current Layout of Grocery Stores Using 5S Tools | Shah, Hiral | 11:40 AM | Voyageurs South |
| Mohite, Mayur | Application of DOE in Metal Coating Process Improvement at RIE Coatings | Sundheim, Nancy; Shah, Hiral; Engelbrekt, Brent; Haglund, Mike | 11:00 AM | Cascade |
| Molnar, Brandon | Insourcing and Re-Shoring to Reduce Risk in Supply Chain Management | Polacco, Alexander | 4:00 PM | Ballroom |
| Montag, Chelsea | I Believe I Can Fly | Olson, Angela | 4:00 PM | Ballroom |
| Morhardt, Mary | Bioinformatic Analysis of the Lysine Biosynthetic Pathway in *Bacillus cereus* ATCC 14579 | Kvaal, Christopher | 4:00 PM | Ballroom |
| Moulder, Breanna | Spring Survey of SCSU Students 2013 | Robinson, David; Kulas, John; Hammes, Michelle; Zerbib, Sandrine; Wagner, Steven; Frank, Stephen | 8:00 AM | Glacier South |
| Muddu, Sai Mohit | Digital Tracing: Revolutionary Methods for Crime Scene Investigation | Schmidt, Mark | 9:50 AM | Glacier South |
| Muhonen, Rianne | Buffalo Trail-Marker Survey | Hiemenz, Melinda; Henry, Vonna | 9:00 AM | Ballroom |
| Mulcrone, Rebecca | Psychology of Genocide | Julius, Matthew; Tabakin, Geoffrey | 2:00 PM | Ballroom |
| Mumukunde, Inga | Twese Hamwe (All of us) | Mutua, Eddah | 11:20 AM | Little Theatre |
| Munezero, Darlene | Twese Hamwe (All of us) | Mutua, Eddah | 11:20 AM | Little Theatre |
| Murphy, Joseph | Demineralization System Piping Evaluation | Zhao, Yongli | 10:10 AM | Voyageurs South |
| Murphy, Rebecca | Psychology of Genocide | Julius, Matthew; Tabakin, Geoffrey | 2:00 PM | Ballroom |
| Naga, Babita | Effect of DDE on Type 1 Diabetes Incidence in NOD Mouse Model | Cetkovic-Cvrlje, Marina | 2:00 PM | Ballroom |
| Najmee, Taha | Home Automation System | Hossain, Md | 1:40 PM | Cascade |
| Ndayiziga, Mika | Twese Hamwe (All of us) | Mutua, Eddah | 11:20 AM | Little Theatre |
| Nelson Ramos, Kristy | Working Mom vs. Stay-at-home Mom | Zuo, Jiping; Finan, Ann-Marie | 10:30 AM | Glacier North |

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| Neu, Jennifer | Optimization of Electrochemical Deposition | Neu, Donald | 9:00 AM | Ballroom |
| Neuman, Cassandra | Mindfulness in Children | Valdes, Leslie | 2:00 PM | Ballroom |
| Nguyen, Nhan | What Men Do Not Know: They Can Get Breast Cancer (part II) | Antunez, Hector; Melcher, Joseph | 2:00 PM | Ballroom |
| Nguyen, Nhan | What Men Do Not Know: They Can Get Breast Cancer (part II) | Antunez, Hector; Melcher, Joseph | 4:10 PM | Glacier North |
| Nguyen, Vien | Finger Tracking Using Depth Images | Herath, Jayantha | 5:40 PM | Glacier North |
| Notch, Jennifer | Propaganda, Media and Genocide | Julius, Matthew; Tabakin, Geoffrey | 4:00 PM | Ballroom |
| Noyes, Joseph | Cloning, Induction, And *In Silico* Analysis Of A Putative Cyclin Of *T. Gondii* In *E. Coli* | Kvaal, Christopher | 11:20 AM | Voyageurs South |
| Nsengiyumva, Sybille | Twese Hamwe (All of us) | Mutua, Eddah | 11:20 AM | Little Theatre |
| Nwoke, Uchechukwu | Investigation of Success in Blended Learning Sections of ENGL 191 and LIB 180, Using ISRS and Map-Works Data | Robinson, David; Cogdill, Sharon | 9:00 AM | Ballroom |
| Nwoke, Uchechukwu | Using Time Series Methods to Predict Emergency Department Patient Flow | Xu, Hui | 3:00 PM | Glacier North |
| O'Brien, Haley | Characterization of Leukocytes Involved in Pathogenesis of Type 1 Diabetes in NOD Mice Exposed to a Persistent Organic Pollutant | Cetkovic-Cvrlje, Marina | 2:00 PM | Ballroom |
| O'Doherty, Adam | Culminating Experience at the SCSU Minnesota Teacher Licensure Exam Center | Imbra, Christine | 9:00 AM | Ballroom |
| Ofori-Amoah, Evans | Mobile Forensics Analysis | Schmidt, Mark | 10:10 AM | Glacier South |
| Olding, Matthew | Implementing a Lean Process at Suburban Manufacturing | Bekkala, Andrew | 4:10 PM | Voyageurs North |
| Olmscheid, Emily | Three Generations of Flight Experience | Olson, Angela | 11:20 AM | Glacier North |
| Olson, Hailey | Study Abroad Returnee Programs Benefit Students' Futures | Barth, Carrie | 2:00 PM | Ballroom |
| Olson, Marin | Environmental Contaminants and Disease | Cetkovic-Cvrlje, Marina | 12:50 PM | Cascade |
| Olson, Sarah | Antibiotics in Meat | Lindstrom, Sheila | 2:00 PM | Ballroom |
| Omoke, Emmanuel | Stearns County Public Health Breastfeeding Resources | Hiemenz, Melinda; DeBruycker, Jo | 9:00 AM | Ballroom |
| Onken, Jessica | Steps Speech-Language Pathologists Take to Resolve Ethical Dilemmas | Whites, Margery | 9:00 AM | Ballroom |
| Onta, Uddar | Wind Tunnel | Miller, Kenneth | 5:00 PM | Voyageurs North |
| Orness, Joshua | Effective Mapping Techniques: Cartogram Versus Choropleth | Torguson, Jeffrey | 4:00 PM | Ballroom |

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| Overby, Bradley | Insourcing and Re-Shoring to Reduce Risk in Supply Chain Management | Polacco, Alexander | 4:00 PM | Ballroom |
| Pakhreen, Sushma | A Comparative Study of Success Measures in Off-Campus and On-Campus First Year Students at St. Cloud State University | Barth, Carrie; Robinson, David | 9:00 AM | Ballroom |
| Palmer, Justin | Century Farms of Melrose Township | Torguson, Jeffrey | 9:00 AM | Ballroom |
| Panchyshyn, Vanessa | The 50% We Don't Know: Followership | Eyo, Bassey | 8:00 AM | Glacier North |
| Panek, Kimberly | Would You Like Aresenic With That? | Lindstrom, Sheila | 9:00 AM | Ballroom |
| Park, Kyeongjong | Comparison Between General American English Pronunciation and Korean English Pronunciation | Koffi, Ettien | 2:00 PM | Ballroom |
| Parsons, Jameson | Leadership Through Athletics and Gender | Eyo, Bassey | 4:00 PM | Ballroom |
| Paudel, Badri | Analysis of Used Hard Drives Using Computer Forensics Tool | Schmidt, Mark | 9:30 AM | Glacier South |
| Paulsen, Justin | Lateral Field Time-of-Flight for Determination of Surface Charge Carrier Mobility | Lidberg, Russell | 9:00 AM | Ballroom |
| Paulson, Benjamin | Can a Distributed Key System Broken up Over Multiple Nodes Provide Greater Security Robustness While Meeting System Performance Requirements? | Guster, Dennis | 8:20 AM | Voyageurs North |
| Pavuluri, Snigdha | Optimization of Maintenance Repair and Operating Supplies (MRO) Process at an Appliance Manufacturing Company | Shah, Hiral | 11:40 AM | Glacier North |
| Pearson, Anthony | Should I Use Open Source Software? | Herath, Jayantha | 8:40 AM | Voyageurs North |
| Peichel, Patricia | Counseling Young Adults on the Autism Spectrum Using Narrative Therapy | Nelson Crowell, Rebecca; Gilbertson, Amy | 2:00 PM | Ballroom |
| Perske, Greta | Kandioyohi County Public Health Customer Satisfaction | Hiemenz, Melinda; Warner, Susan | 2:00 PM | Ballroom |
| Peterson, Ronni | Teaching Easy Onsets Effectively for Optimum Retention | Smits-Bandstra, Sarah | 2:00 PM | Ballroom |
| Phung, Huong | Effect of Persistent Organic Pollutants on Proliferative Capacity of Immune Cells | Cetkovic-Cvrlje, Marina | 9:00 AM | Ballroom |

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| Student Presenter | Project Title | Sponsor(s) | Time | Room |
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| Piehl, Katherine | Community Assessment of Diabetic Foot Ulcers in Concepcion, Chile | Hiemenz, Melinda; Henry, Vonna | 2:00 PM | Ballroom |
| Piersak, Matthew | Attitude Towards the 2012 Minnesota Wolf Hunt | Torguson, Jeffrey | 2:00 PM | Ballroom |
| Pilarski, Krista | The Great Lakes and Invasive Species | Lindstrom, Sheila | 2:00 PM | Ballroom |
| Pillsbury, Makenzie | Goniothalamin: A Template for Chemotherapeutic Drug Design and Synthesis | Mechelke, Mark | 4:00 PM | Ballroom |
| Pitts, Terry | Processing Speed Variation | Guster, Dennis | 8:00 AM | Voyageurs North |
| Poepping, Brittany | The Impact of Forest Fragmentation on Vegetative and Avian Inhabitants | Cook, William | 9:00 AM | Ballroom |
| Poepping, David | Influences on the Boston Stamp Act Crisis | Glade, Betsy | 9:00 AM | Glacier North |
| Prasomsack, Aektono | Global Connection: St. Cloud State University as a Primary Destination for Nepalese International Students | Torguson, Jeffrey; Blinnikov, Mikhail | 2:00 PM | Ballroom |
| Prigge, Christopher | Characterization of Leukocytes Involved in Pathogenesis of Type 1 Diabetes in NOD Mice Exposed to a Persistent Organic Pollutant | Cetkovic-Cvrlje, Marina | 2:00 PM | Ballroom |
| Prodoehl, Caitlin | Temperature Versus Emergence of Emerald Ash Borer In Minnesota | Torguson, Jeffrey | 2:00 PM | Ballroom |
| Proell, Hannah | Steps Speech-Language Pathologists Take to Resolve Ethical Dilemmas | Whites, Margery | 9:00 AM | Ballroom |
| Pruss, Mitchell | Heat Treat Loading Station Improvement | Bekkala, Andrew | 6:00 PM | Voyageurs North |
| Pucel, Brendan | Minorities in Aviation | Olson, Angela | 2:00 PM | Ballroom |
| Pufpaff, Adrian | Green Logistics | Polacco, Alexander | 2:00 PM | Ballroom |
| Qualen, Paula | Steps Speech-Language Pathologists Take to Resolve Ethical Dilemmas | Whites, Margery | 9:00 AM | Ballroom |
| Quesada Montoya, Maria | Hispanic Speakers English Vowel Pronunciation Problems | Koffi, Ettien | 9:00 AM | Ballroom |
| Quillo, Kori | Antibiotics in Meat | Lindstrom, Sheila | 2:00 PM | Ballroom |
| Radermacher, Derek | Declared Major and Duration Analyses | Robinson, David | 4:00 PM | Ballroom |
| Rai, Arbin | Effect of DDE on Insulitis Development and Insulin Expression in NOD Mouse Model of Type 1 | Cetkovic-Cvrlje, Marina | 2:00 PM | Ballroom |
| Rajkarnikar, Sagun | Stearns County Public Health Breastfeeding Resources | Hiemenz, Melinda; DeBruycker, Jo | 9:00 AM | Ballroom |

## STUDENT PRESENTER INDEX

| Student Presenter | Project Title | Sponsor(s) | Time | Room |
|---|---|---|---|---|
| Ramdin, Priyanka | Analyzing and Improving Current Layout of Grocery Stores Using 5S Tools | Shah, Hiral | 11:40 AM | Voyageurs South |
| Raza, Faisal | Graphical User Interface Trivia Game | Thamvichai, Ratchaneekorn | 5:40 PM | Voyageurs North |
| Rearick, Daniel | Anatomical, Behavioral, and Molecular Responses of Minnows Exposed to Pharmaceuticals Using Field and Laboratory Approaches | Schoenfuss, Heiko | 9:30 AM | Voyageurs South |
| Reddy, Seshagiri | Inventory Management at a Grocery Store | Shah, Hiral | 12:00 PM | Voyageurs South |
| Redepenning, Timothy | Implementing a Lean Process at Suburban Manufacturing | Bekkala, Andrew | 4:10 PM | Voyageurs North |
| Redford, Garrett | Visibility in Medical Supply Chains | Polacco, Alexander | 5:00 PM | Glacier North |
| Redman, James | Analysis of Solid State Drive | Schmidt, Mark | 3:20 PM | Glacier South |
| Regnier, Stacy | Steps Speech-Language Pathologists Take to Resolve Ethical Dilemmas | Whites, Margery | 9:00 AM | Ballroom |
| Rehnstrand, Wendy | Teaching Pausing Effectively for Optimum Retention | Smits-Bandstra, Sarah | 2:00 PM | Ballroom |
| Ren, Qing | On the Relationship of ACT Math Scores and Accuplacer Math Scores | Robinson, David | 4:00 PM | Ballroom |
| Rhodes, Mark | Tracing Scottish Migration to Minnesota Through Religious, Cultural, and Social Landscapes, 1840-1930 | John, Gareth | 2:15 PM | Cascade |
| Rice, Erich | A Digital Forensic Quandary: Who Done it? | Schmidt, Mark | 3:00 PM | Glacier South |
| Richards, Brandon | Task Switching and Breaks | Valdes, Leslie | 4:00 PM | Ballroom |
| Richards, Pauline | Creating a Peer Mentor Program for Underprepared Students at a Technical and Community College | Barth, Carrie | 9:00 AM | Ballroom |
| Richter, Danielle | Buffalo Trail-Marker Survey | Hiemenz, Melinda; Henry, Vonna | 9:00 AM | Ballroom |
| Rimal, Mahesh | A Comparison Study of Estimation of Conformance Proportion | Xu, Hui | 4:10 PM | Voyageurs South |
| Riordan, Megan | Buffalo Trail-Marker Survey | Hiemenz, Melinda; Henry, Vonna | 9:00 AM | Ballroom |
| Robarge, Rachel | Computer Forensics Case Solutions | Schmidt, Mark | 3:40 PM | Glacier South |
| Robeck, Julia | Comparing Genocides | Julius, Matthew; Tabakin, Geoffrey | 4:00 PM | Ballroom |
| Roberts, Alyssa | Teaching Easy Onsets Effectively for Optimum Retention | Smits-Bandstra, Sarah | 2:00 PM | Ballroom |
| Roberts, Kristina | Bootlegging in Stearns County from 1920 to 1933 | Torguson, Jeffrey | 2:00 PM | Ballroom |

## STUDENT PRESENTER INDEX

| Student Presenter | Project Title | Sponsor(s) | Time | Room |
|---|---|---|---|---|
| Roden, Lindsey | Genocide Education in Minnesota's Public Schools | Julius, Matthew; Tabakin, Geoffrey | 4:00 PM | Ballroom |
| Roden, Lindsey | I Believe I Can Fly | Olson, Angela | 4:00 PM | Ballroom |
| Roebke, Mark | Rationale for Neither Agreeing nor Disagreeing: Person and Item Contributors | Kulas, John | 2:00 PM | Ballroom |
| Roelle, Gregory | Processing Speed Variation | Guster, Dennis | 8:00 AM | Voyageurs North |
| Rogers, Lindsey | Merging Corporate and Social Leadership: A New Model | Eyo, Bassey | 8:40 AM | Glacier North |
| Rogers, Meredith | Community College Connection (SCSU/SCTCC) | Imbra, Christine | 9:00 AM | Ballroom |
| Rollins, Lindsay | Hypnosis and Quitting Smoking | Valdes, Leslie | 4:00 PM | Ballroom |
| Rolstad, Nancy | The Ubiquitin-Mediated Regulation of the Proto-Oncogene Myc by DNA Damage | Olson, Brian | 10:30 AM | Voyageurs South |
| Rosenberger, Jamie | Will Green Trends Result in More Insourcing in Global Supply Chains? | Polacco, Alexander | 2:00 PM | Ballroom |
| Rothe, Jennifer | Honors Leadership Institute | Eyo, Bassey | 2:00 PM | Ballroom |
| Rother, Elizabeth | The Effects of Riming and Aggregation on the Fall Velocities of Snowflakes | Kubesh, Rodney | 2:00 PM | Ballroom |
| Rothstein, Cory | The Thrill of Flight | Olson, Angela | 4:00 PM | Ballroom |
| Ruanglertsilp, Ekkarat | Acoustics Fricatives and Affricates | Koffi, Ettien | 9:00 AM | Ballroom |
| Rudziva, Tatenda | Buffalo Trail-Marker Survey | Hiemenz, Melinda; Henry, Vonna | 9:00 AM | Ballroom |
| Salzwedel, Rachel | Individual Differences in Attention: Optimism and Pessimism | Valdes, Leslie | 2:00 PM | Ballroom |
| Savadogo, Alassane | Statistical Modeling of Educational Data | Xu, Hui | 3:50 PM | Voyageurs South |
| Saxton, Jeffery | Green Logistics | Polacco, Alexander | 2:00 PM | Ballroom |
| Schaefer, Joshua | Design and Analysis of Grain Ship Unloaders | Bekkala, Andrew | 3:50 PM | Voyageurs North |
| Schindler, Broc | Characterization of Leukocytes Involved in Pathogenesis of Type 1 Diabetes in NOD Mice Exposed to a Persistent Organic Pollutant | Cetkovic-Cvrlje, Marina | 2:00 PM | Ballroom |
| Schleppenbach, Alexis | Accessibility to Oral Care in Litchfield | Hiemenz, Melinda; Henry, Vonna; Bajari, Ann; Zelenak, Mary | 9:00 AM | Ballroom |
| Schmid, Alyssa | Comparing Genocides | Julius, Matthew; Tabakin, Geoffrey | 4:00 PM | Ballroom |
| Schneider, Kristen | Types of Ethical Issues Faced by Speech-Language Pathologists | Whites, Margery | 4:00 PM | Ballroom |
| Schroden, Melissa | Diversity in Media: Latinos and Immigration | Heinrich, Lisa | 11:30 AM | Glacier South |

## STUDENT PRESENTER INDEX

| Student Presenter | Project Title | Sponsor(s) | Time | Room |
|---|---|---|---|---|
| Schulzetenberg, Aaron | Lateral Field Time-of-Flight for Determination of Surface Charge Carrier Mobility | Lidberg, Russell | 9:00 AM | Ballroom |
| Schwarting, Joel | Can a Distributed Key System Broken up Over Multiple Nodes Provide Greater Security Robustness While Meeting System Performance Requirements? | Guster, Dennis | 8:20 AM | Voyageurs North |
| Schwieters, Rita | Twitter in the Chemistry Classroom | Robinson Parsons, Ruth | 9:00 AM | Ballroom |
| Scott, Alex | Characterization of Leukocytes Involved in Pathogenesis of Type 1 Diabetes in NOD Mice Exposed to a Persistent Organic Pollutant | Cetkovic-Cvrlje, Marina | 2:00 PM | Ballroom |
| Scott, Andrew | Characterization of Leukocytes Involved in Pathogenesis of Type 1 Diabetes in NOD Mice Exposed to a Persistent Organic Pollutant | Cetkovic-Cvrlje, Marina | 2:00 PM | Ballroom |
| Scotting, Amanda | Processing Speed Variation | Guster, Dennis | 8:00 AM | Voyageurs North |
| Seefeldt, Lacey | University Honors Program Outcomes | Barth, Carrie | 2:00 PM | Ballroom |
| Sellner, Tyrone | A New Information System to Track Graduation Time Lines | Schmidt, Mark | 4:00 PM | Ballroom |
| Sengwiza, Loris | Twese Hamwe (All of us) | Mutua, Eddah | 11:20 AM | Little Theatre |
| Setrum, Holly | Kandioyohi County Public Health Customer Satisfaction | Hiemenz, Melinda; Warner, Susan | 2:00 PM | Ballroom |
| Shah, Anil | Unmanned Aerial Vehicle: Quadrotor | Glazos, Michael | 4:00 PM | Ballroom |
| Shehadeh, Bashar | Solving a Virtual Crime Using Digital Forensics Tools | Schmidt, Mark | 2:00 PM | Glacier South |
| Shehadeh, Bashar | Vivid-Pass: A Dual Layer Authentication Method With Custom-Made Security Features | Chen, Qingjun | 3:30 PM | Voyageurs South |
| Sheikh, Mohamed Deq | Development and Monitoring of a Lignin Depolymerization by Laccase Using Cellulolytic Microorganisms | Sreerama, Lakshmaiah | 9:00 AM | Ballroom |
| Shiraz, Fathima | Visibility in Medical Supply Chains | Polacco, Alexander | 5:00 PM | Glacier North |
| Shrestha, Gamir | Smart Mug | Yao, Aiping | 9:00 AM | Ballroom |
| Simon, Tricia | Motivational Interviewing and Student Alcohol Use | Klepetar, Adam | 9:00 AM | Ballroom |
| Sivigny, Allison | High Potentials-Employee Assessment Tools | Davis, Elaine | 2:00 PM | Ballroom |
| Smiles, Deondre | St. Cloud State and the Graduate Geographic Hinterland | Torguson, Jeffrey | 9:00 AM | Ballroom |
| Smith, Ivy | Genocide Education in Minnesota's Public Schools | Julius, Matthew; Tabakin, Geoffrey | 4:00 PM | Ballroom |

## STUDENT PRESENTER INDEX

| Student Presenter | Project Title | Sponsor(s) | Time | Room |
|---|---|---|---|---|
| Smith, Jacob | Spring Survey of SCSU Students 2013 | Robinson, David; Kulas, John; Hammes, Michelle; Zerbib, Sandrine; Wagner, Steven; Frank, Stephen | 8:00 AM | Glacier South |
| Smith, John | Unintended Consequences of Public Policy | Zuo, Jiping | 10:10 AM | Glacier North |
| Soderling, Stephanie | Study of Science and Society's Views on the Benefits of Space Experiments | Simpson, Patricia | 9:00 AM | Ballroom |
| Songnaba, Pengdwende | Bioinformatic Analysis of Cysteine and Methionine Biosynthesis Pathway in the *Bacillus cereus* ATCC 14579 | Kvaal, Christopher | 9:00 AM | Ballroom |
| Sperzel, Kristin | Twitter in the Chemistry Classroom | Robinson Parsons, Ruth | 9:00 AM | Ballroom |
| Spoden, Derek | Diversity in Media: Color Me Bad-African Americans in Fitness Advertising | Heinrich, Lisa | 12:00 PM | Glacier South |
| Srivastava, Shipra | Analyzing and Improving Current Layout of Grocery Stores Using 5S Tools | Shah, Hiral | 11:40 AM | Voyageurs South |
| Stanton, Dexter | Afro-American Apathy Around Issues of Voting Rights | Zuo, Jiping; Finan, Ann-Marie | 11:40 AM | Voyageurs North |
| Staszewski, Zachary | Be a Community Superhero Workshop | Imbra, Christine | 9:00 AM | Ballroom |
| Stay, Karen | Spring Survey of SCSU Students 2013 | Robinson, David; Kulas, John; Hammes, Michelle; Zerbib, Sandrine; Wagner, Steven; Frank, Stephen | 8:00 AM | Glacier South |
| Stein, Brandon | The Effects of Forest Disturbance on Beetle Diversity and Abundance | Cook, William | 9:00 AM | Ballroom |
| Steinmetz, Keri | Comparing Genocides | Julius, Matthew; Tabakin, Geoffrey | 4:00 PM | Ballroom |
| Stenerson, Sandra | Resources and Strategies Used by Speech-Language Pathologists to Address Ethical Dilemmas | Whites, Margery | 9:00 AM | Ballroom |
| Stensing, Allesson | Genocide Education in Minnesota's Public Schools | Julius, Matthew; Tabakin, Geoffrey | 4:00 PM | Ballroom |
| Stolt, Brittany | Teaching Pausing for Optimum Transfer Outside of the Clinical Setting | Smits-Bandstra, Sarah | 2:00 PM | Ballroom |
| Stomberg, Ashley | Is Organic Food Really Healthier? | Lindstrom, Sheila | 2:00 PM | Ballroom |
| Strand, Kaitlyn | Propaganda, Media and Genocide | Julius, Matthew; Tabakin, Geoffrey | 4:00 PM | Ballroom |
| Studniski, Hien | CSB/SJU Bonner Program | Imbra, Christine | 9:00 AM | Ballroom |

## STUDENT PRESENTER INDEX

| Student Presenter | Project Title | Sponsor(s) | Time | Room |
|---|---|---|---|---|
| Stumvoll, Tanner | Smartphone Controlled Omni-Directional Tri-Wheel Robot (SCOTR) | Hou, Ling | 2:00 PM | Ballroom |
| Svendsen, Benjamin | Spring Survey of SCSU Students 2013 | Robinson, David; Kulas, John; Hammes, Michelle; Zerbib, Sandrine; Wagner, Steven; Frank, Stephen | 8:00 AM | Glacier South |
| Swanberg, Breanna | Teaching Pausing Effectively for Optimum Retention | Smits-Bandstra, Sarah | 2:00 PM | Ballroom |
| Swanson, Anna | I Believe I Can Fly | Olson, Angela | 4:00 PM | Ballroom |
| Swanson, Jacob | Characterization of Magnetite (111) Surface Oxidation Using Conductance Atomic Force Microscopy (CAFM) | Petitto, Sarah | 9:00 AM | Ballroom |
| Swanson, Rochelle | Speech-Language Pathologists Satisfaction with Workplace Ethics Policies and Procedures | Whites, Margery | 9:00 AM | Ballroom |
| Sze Tho, Min Soon | Robotic Applications in Small Businesses | Polacco, Alexander | 9:00 AM | Ballroom |
| Tamanag, Priyanka | Fictitious Crime Investigation Using Digital Forensics | Schmidt, Mark | 2:40 PM | Glacier South |
| Tamang, Ritu | Flu Vaccine - So How Effective is it? | Antunez, Hector | 9:00 AM | Ballroom |
| Tan, Chung Keong | Home Automation System | Hossain, Md | 1:40 PM | Cascade |
| Tangen, Stephanie | Paying Attention to Warnings on Prescription Labels | Valdes, Leslie | 4:00 PM | Ballroom |
| Teachout, Jenita | Stearns County Public Health Breastfeeding Resources | Hiemenz, Melinda; DeBruycker, Jo | 9:00 AM | Ballroom |
| Tellapally, Anusha | Inventory Management at a Grocery Store | Shah, Hiral | 12:00 PM | Voyageurs South |
| Tesfaye, Milkias | Air Water Generator | Zhao, Yongli | 5:20 PM | Voyageurs North |
| Tetali, Venkata | Computer Forensics Case Solutions | Schmidt, Mark | 3:40 PM | Glacier South |
| Tham, Jason | Leadership Without Borders: Celebrating Diversity and Inclusion of International Student Leaders | Hyde, R. Bruce | 9:30 AM | Glacier North |
| Tham, Jason | Tomorrow's College: An Analysis of a Blended Learning Pilot Project for First-Year Composition | Fox, Catherine | 10:20 AM | Cascade |
| Tham, Jason | We're All In This Together. RT @BarackObama: Social Media Use and College Students' Civic Engagement During the 2012 Presidential Election. | Peng, Zengjun; Akhavan, Roya | 11:50 AM | Cascade |
| Thapa, Jenny | Comparison of Full-time and Part-time Students at SCSU | Robinson, David | 9:00 AM | Ballroom |
| Thielen, Amanda | How Career Services Can Better Serve International Students | Barth, Carrie | 2:00 PM | Ballroom |

## STUDENT PRESENTER INDEX

| Student Presenter | Project Title | Sponsor(s) | Time | Room |
|---|---|---|---|---|
| Thinamany, Sinduja | Effect of DDE on Type 1 Diabetes Incidence in NOD Mouse Model | Cetkovic-Cvrlje, Marina | 2:00 PM | Ballroom |
| Thomas, Jumoke | Judicial System Funnel | Robinson, David; Xu, Hui | 9:30 AM | Voyageurs North |
| Thomas, Perrin | Teaching Easy Onsets Effectively for Optimum Transfer Outside of the Clinical Setting | Smits-Bandstra, Sarah | 2:00 PM | Ballroom |
| Thorstad, Kimberly | Understanding The Minnesota Teacher Licensure Exams (MTLE) | Imbra, Christine | 9:00 AM | Ballroom |
| Toews, Andrew | Heat Treat Loading Station Improvement | Bekkala, Andrew | 6:00 PM | Voyageurs North |
| Toft, Jamie | Effect of DDE on Insulitis Development and Insulin Expression in NOD Mouse Model of Type 1 | Cetkovic-Cvrlje, Marina | 2:00 PM | Ballroom |
| Traczek, Cara | What is the Origin of the Holocaust? | Julius, Matthew; Tabakin, Geoffrey | 9:00 AM | Ballroom |
| Tripathi, Dipendra | Analysis of Used Hard Drives Using Computer Forensics Tool | Schmidt, Mark | 9:30 AM | Glacier South |
| Tripathi, Dipendra | Using Agile Project Management Technology in Dynamic Environments | Polacco, Alexander | 2:00 PM | Ballroom |
| Tuladhar, Dibesh | Fictitious Crime Investigation Using Digital Forensics | Schmidt, Mark | 2:40 PM | Glacier South |
| Turkowski, Kari | Effect of DDE on Insulitis Development and Insulin Expression in NOD Mouse Model of Type 1 | Cetkovic-Cvrlje, Marina | 2:00 PM | Ballroom |
| Twinawe, Sarah | Accessibility to Oral Care in Litchfield | Hiemenz, Melinda; Henry, Vonna; Bajari, Ann; Zelenak, Mary | 9:00 AM | Ballroom |
| Udofia, David | Diversity in Media: Perceptions & Attitudes Towards Muslim Americans | Heinrich, Lisa | 11:15 AM | Glacier South |
| Udvig, Colin | Data Analysis of SCSU Students Applying During Free App Week | Robinson, David | 2:00 PM | Glacier North |
| Ulrich, Keith | Automated Robot Chassis | Petzold, Mark | 9:00 AM | Ballroom |
| Vallabhaneni, Santhosh Kumar | Improvement in Facilities Layout of a Restaurant | Shah, Hiral | 11:00 AM | Glacier North |
| Vallis, Amanda | Contact Zones of the Winnebago: Tracing Cultural Exchange from Wisconsin to Nebraska, 1634-1874 | Torguson, Jeffrey | 9:00 AM | Ballroom |
| Vanga, Shruthi | Inventory Management at a Grocery Store | Shah, Hiral | 12:00 PM | Voyageurs South |
| Vanoverbeke, Kyle | Propaganda, Media and Genocide | Julius, Matthew; Tabakin, Geoffrey | 4:00 PM | Ballroom |
| Voeller, Keith | Investigation of Low Temperature Hole Mobilities in Tetracene Single Organic Crystals by Time of Flight | Lidberg, Russell | 2:00 PM | Ballroom |
| Vos, Evan | Digital Humanities and Pedagogy in Medieval History and English Studies | Cogdill, Sharon | 9:50 AM | Alumni |
| Vossen, Lucas | Design and Analysis of Grain Ship Unloaders | Bekkala, Andrew | 3:50 PM | Voyageurs North |

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| Student Presenter | Project Title | Sponsor(s) | Time | Room |
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| Wacker, Tina | E-Waste in the United States | Lindstrom, Sheila | 9:00 AM | Ballroom |
| Waddell, Abby | Expert and Novice Study of Percent Yield | Krystyniak, Rebecca | 4:00 PM | Ballroom |
| Wang, LuLu | Sleep Cycle Monitoring Alarm Clock | Thamvichai, Ratchaneekorn | 9:00 AM | Ballroom |
| Wardrip, Nathaniel | Air Water Generator | Zhao, Yongli | 5:20 PM | Voyageurs North |
| Warren, Nicholas | Corporate Externalities | Lindstrom, Sheila | 2:00 PM | Ballroom |
| Weber, Amanda | Rationale for Neither Agreeing nor Disagreeing: Person and Item Contributors | Kulas, John | 2:00 PM | Ballroom |
| Weber, Laura | Buffalo Trail-Marker Survey | Hiemenz, Melinda; Henry, Vonna | 9:00 AM | Ballroom |
| Weckwerth, Marissa | Kandioyohi County Public Health Customer Satisfaction | Hiemenz, Melinda; Warner, Susan | 2:00 PM | Ballroom |
| Weidner, Kristen | Types of Ethical Issues Faced by Speech-Language Pathologists | Whites, Margery | 4:00 PM | Ballroom |
| Weinberg, Samantha | Propaganda, Media and Genocide | Julius, Matthew; Tabakin, Geoffrey | 4:00 PM | Ballroom |
| Welinski, Michael | How Playing Video Games Affects Attention | Valdes, Leslie | 9:00 AM | Ballroom |
| Wickremasuriya, Boosabaduge A. | Home Automation System | Hossain, Md | 1:40 PM | Cascade |
| Willaert, Emily | The Capability of a Random Forest to Predict Crouch Gait Status of Adolescents with Cerebral Palsy | Street, Glenn | 9:00 AM | Ballroom |
| Willert, Jonathon | Insourcing and Re-Shoring to Reduce Risk in Supply Chain Management | Polacco, Alexander | 4:00 PM | Ballroom |
| Willis, Ashley | Analysis of Recidivism Among Stearns County Corrections Clients | Robinson, David; Xu, Hui | 10:30 AM | Voyageurs North |
| Wilson, Brittany | Levels of High School and College Engagement in First Year Honor Students | Barth, Carrie | 4:00 PM | Ballroom |
| Wilson, Caitlin | The Thrill of Flight | Olson, Angela | 4:00 PM | Ballroom |
| Wirth, Daniel | Histological Effects of Effluent Contaminated Water on Bluegill Sunfish | Schoenfuss, Heiko | 4:00 PM | Ballroom |
| Wojchouski, Devin | Implementing a Lean Process at Suburban Manufacturing | Bekkala, Andrew | 4:10 PM | Voyageurs North |
| Wolfe, Bradley | Sexual Expression in the GLBTQ Community | Zuo, Jiping | 2:20 PM | Voyageurs North |
| Wollum, Bradley | Sulfide Mining in Minnesota | Hoff, Jean | 2:00 PM | Ballroom |
| Wolter, Sarah | Genocide Education in Minnesota's Public Schools | Julius, Matthew; Tabakin, Geoffrey | 4:00 PM | Ballroom |

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| Student Presenter | Project Title | Sponsor(s) | Time | Room |
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| Wyman, Matthew | Graphical User Interface Trivia Game | Thamvichai, Ratchaneekorn | 5:40 PM | Voyageurs North |
| Xu, Liheng | Computer Forensics Project | Schmidt, Mark | 2:20 PM | Glacier South |
| Yahya, Nawal | Effects of Age and Gender on Thyrotropin and Thyroid Hormones Among Western Sudanese | Gazal, Oladele; Jacobson, Bruce | 9:00 AM | Ballroom |
| Yang, Allen | Processing Speed Variation | Guster, Dennis | 8:00 AM | Voyageurs North |
| Yang, Dia | Adult Basic Education College Transition Program | Imbra, Christine | 9:00 AM | Ballroom |
| Yang, Samantha | Comparing the Preschool Language Scale: 4th and 5th Editions | Estrem, Theresa | 4:00 PM | Ballroom |
| Yang, Samantha | Types of Ethical Issues Faced by Speech-Language Pathologists | Whites, Margery | 4:00 PM | Ballroom |
| Yiadom, Atuobi | Analytical Extraction Methodology: Developing an Efficient Single Drop Microextraction (SDME) Method for Diphenhydramine | Jeannot, Michael | 2:00 PM | Ballroom |
| Yiadom, Atuobi | EEG Activity Show Differences Between True and False Memory For Video Recall | Valdes, Leslie | 2:00 PM | Ballroom |
| Yin, Mengmei | Chinese Style Privatization and its Impact on GDP Growth | MacDonald, Lynn | 12:00 PM | Glacier North |
| Young, Timothy | FSAE: Car Project | Miller, Kenneth | 8:40 AM | Voyageurs South |
| Yusuf, Habibo | Clean Water Access in Somalia | Lindstrom, Sheila | 2:00 PM | Ballroom |
| Zaiser, Kelly | Kandioyohi County Public Health Customer Satisfaction | Hiemenz, Melinda; Warner, Susan | 2:00 PM | Ballroom |
| Zelinski, Tyler | Play Call And Noise: Ignoring The Roar Of The Crowd | Valdes, Leslie | 12:00 PM | Voyageurs North |
| Zenzen, Matthew | Examination of Minnesota Diphthongs | Koffi, Ettien | 2:00 PM | Ballroom |
| Zhang, Borui | Study and Analysis of Intelligibility Problems on Consonants Between Chinese English and General American English | Koffi, Ettien | 9:00 AM | Ballroom |
| Zimmerman, Rhonda | The Impact of Forest Fragmentation on Vegetative and Avian Inhabitants | Cook, William | 9:00 AM | Ballroom |
| Zuluaga, Juan | Optimal Matching - Does It Reveal Deep Structure? | Xu, Hui | 2:40 PM | Glacier North |

# St. Cloud State University

## College of Liberal Arts

### *Communication Studies*

| Sponsor | Student(s) |
|---|---|
| Eyo, Bassey | Hemmesch, Scott; Hartzell, Kaitlyn; Ditoubilianou, Flamine marie; Albright, Courtney; Panchyshyn, Vanessa; Backes, Tiffany; Rothe, Jennifer; Danzeisen, Ali; Bates, Stephanie; Rogers, Lindsey; Kanak, Samantha; Arnold, Brandon; Parsons, Jameson |
| Hyde, R. Bruce | Tham, Jason |
| Mutua, Eddah | Ndayiziga, Mika; Mumukunde, Inga; Byiringiro, Janvier; Munezero, Darlene; Gahungu, Guy Armel; Nsengiyumva, Sybille; Sengwiza, Loris; Doumbia, Aminata; Abebe, Ayda |
| Wells, Scott | Gahm, Noah |

### *English*

| Sponsor | Student(s) |
|---|---|
| Cogdill, Sharon | Edwards, Bretta; Erdahl, Thomas; Gaikwad, Sampada; Halonen, Daniel; Lo, Siu-Pong; Ferguson, Elizabeth; Vos, Evan; Koethe, Matthew; Nwoke, Uchechukwu |
| Fox, Catherine | Tham, Jason |
| Heiman, James | Hennes, Jack |
| Koffi, Ettien | Keyworth, Paul; Zhang, Borui; Ruanglertsilp, Ekkarat; Haugen, Leah; Alfaro Cruz, Jose; Hamberg, Autumn; Zenzen, Matthew; Quesada Montoya, Maria; Hudalla, Jared; Abat, Martina; Park, Kyeongjong |
| Madden, John | Almuqrin, Afrah; Gordon, Rebekah |
| Schwartz, Michael | Colpaert, Kathrine |
| Veeder, Rex | Pickar, Michael; Blank, Shawn |

### *Foreign Languages and Literature*

| Sponsor | Student(s) |
|---|---|
| Jarvis, Shawn | Colpaert, Kathrine |
| Mueller, Isolde | Kohler, Benjamin |

### *Global Studies*

| Sponsor | Student(s) |
|---|---|
| Blinnikov, Mikhail | Chrisinger, Alyssa; Engelen, Kelsey; Frost, Hannah; Swanberg, Luke; Kroll, Alastriona; Mekuria, Tedi; Prasomsack, Aektono |

### *History*

| Sponsor | Student(s) |
|---|---|
| Glade, Betsy | Poepping, David |

### *Mass Communications*

| Sponsor | Student(s) |
|---|---|
| Akhavan, Roya | Tham, Jason |
| Heinrich, Lisa | Becker, Christopher; Schroden, Melissa; Spoden, Derek; Christianson, Marjorielee; Udofia, David |
| Peng, Zengjun | Tham, Jason |

### *Psychology*

| Sponsor | Student(s) |
|---|---|
| Jazwinski, Christine | Wethern, Jessica; McGregor, Tamara |
| Kulas, John | Stay, Karen; Amisi, Thierry; Ilboudo, Patrick; Kafle, Bikal; Kelly, Kimberly; Moulder, Breanna; Smith, Jacob; Svendsen, Benjamin; Weber, Amanda; Roebke, Mark |
| Melcher, Joseph | Nguyen, Nhan |
| Valdes, Leslie | Yiadom, Atuobi; Rollins, Lindsay; Hughes, Tyla; Gill, Taylor; Habisch, Courtney; Welinski, Michael; Lindberg, Jennifer; Heck, Tara; Salzwedel, Rachel; Allen, Rebecca; Barett, Lorren; Heuring, Benjamin; Zelinski, Tyler; Tangen, Stephanie; Drexel, Catherine; Larson, KatiLee; Richards, Brandon; Neuman, Cassandra; Ernst, Emily |

### *Sociology and Anthropology*

| Sponsor | Student(s) |
|---|---|
| Finan, Ann-Marie | Stanton, Dexter; Nelson Ramos, Kristy |
| Lavenda, Robert | Fonken, Gael |
| Zerbib, Sandrine | Stay, Karen; Amisi, Thierry; Ilboudo, Patrick; Kafle, Bikal; Kelly, Kimberly; Moulder, Breanna; Smith, Jacob; Svendsen, Benjamin |
| Zuo, Jiping | Stanton, Dexter; Nelson Ramos, Kristy; Wolfe, Bradley; Smith, John; Beaudry, Katherine |

### *Women''s Studies*

| Sponsor | Student(s) |
|---|---|
| Mwangi, Mumbi | Maina, Naomi |

## College of Science and Engineering

### *Aviation*

| Sponsor | Student(s) |
|---|---|
| Olson, Angela | Brodt, Hanna; Gebur, Kevin; Herod, Alison; Halvorson, Alex; Roden, Lindsey; Hartzell, Kaitlyn; Manuel, Laura; Swanson, Anna; Montag, Chelsea; Olmscheid, Emily; Andersen, Joshua; Blumhoefer, Michael; Pucel, Brendan; Rothstein, Cory; Wilson, Caitlin; Ferguson, Connor |

# SPONSOR INDEX

## *Biological Sciences*

| Sponsor | Student(s) |
|---|---|
| Arriagada, Jorge | Malone, Kayla |
| Cetkovic-Cvrlje, Marina | Chitrakar, Baadal; Lea, Allan; Scott, Andrew; Schindler, Broc; Scott, Alex; O'Brien, Haley; Prigge, Christopher; Hansen, Sarah; Phung, Huong; Lamsal, Vivek; Turkowski, Kari; Elshikh, Amira; Geller, Karly; Rai, Arbin; De Silva, Samera; Olson, Marin; Ghazal, Leila; Frempong, Nora; Hoganson, Jessica; Toft, Jamie; Thinamany, Sinduja; Knutson, Annie; Naga, Babita; Gong, Hwee Kiat |
| Cook, William | Arola, Kyle; Stein, Brandon; Poepping, Brittany; Zimmerman, Rhonda; Duerkop, Peter |
| Gazal, Oladele | Yahya, Nawal |
| Jacobson, Bruce | Yahya, Nawal |
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# ACKNOWLEDGEMENTS


## 16TH ANNUAL STUDENT RESEARCH COLLOQUIUM

About 520 students presented their research or creative projects during this year's Student Research Colloquium. Sponsored by St. Cloud State University's Office of Academic Affairs, the colloquium is one of the largest events of its kind and is open to college and university students around the world. Patterned after professional conferences, the Student Research Colloquium encourages students to conduct authentic research and to contribute to the body of knowledge in their disciplines.

## FORMAL PAPER COMPETITION

Papers submitted for the formal paper competition are judged on the following criteria: background, thesis, methodology, implications and organization. Formal paper submissions of up to a 2,000 word narrative, not including references, were due by March 1st. The judges are as follows:

- Rachel Wexelbaum, Chair, Collection Management Librarian, Learning Resources Services
- Leslie Valdes, Associate Professor, Psychology
- Stephanie Hill, Adjunct Faculty & Reference Librarian, Learning Resources Center
- Cari Kenner, Associate Professor, Academic Learning Center
- Subba Moorthy, Professor, Management
- Alexander Polacco, Professor, Management
- Hung-Chih (Alvin) Yu, Associate Professor, Geography, Planning and Community Development

## PAPER PRESENTATION COMPETITION

Step two of the paper competition process involves presenting before a panel of judges at the Student Research Colloquium. Ten papers were selected for the presentation competition with evaluation criteria including: background, thesis, methodology, implications, organization, student's speaking skills, visual aids effectiveness and the student's ability to answer questions. The best paper presentation is awarded $300; there are up to six honorable mention awards given at $150 each. The judges are as follows:

- Leslie Valdes, Co-chair, Associate Professor, Psychology
- Rachel Wexelbaum, Co-chair, Collection Management Librarian, Learning Resources Services
- Shiju Zhang, Assistant Professor, Mathematics and Statistics
- Julie Nienaber, MedTech Coordinator, College of Science and Engineering
- Soumia Bardhan, Assistant Professor, Communication Studies

## POSTER PRESENTATION COMPETITION

There were 53 posters entered into the poster presentation competition. A panel of judges from various disciplines evaluated the posters based on visual effectiveness, language appropriateness, originality, creativity and content. The best poster presentation is awarded $300; there are up to six honorable mention awards given at $150 each. The judges are as follows:

- Balsy Kasi, Chair, Professor, Environmental and Technological Studies
- David Bacharach, Professor, Kinesiology
- Marina Cetkovic-Cvrlje, Professor, Biological Sciences
- Alexander Polacco, Professor, Management
- Chandana Wijeratne, Assistant Professor, Mathematics and Statistics

This event is funded in part by SCSU Student Government
and the Honor Society of Phi Kappa Phi.

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