FY2016 | Student Research Profile

Seek and Apply Knowledge

Office of Research
and Sponsored Programs
St. Cloud State University

Seek and Apply Knowledge

St. Cloud State University has a rich history of promoting research, scholarship and creative activity that facilitates the advancement of disciplines. A hallmark of higher education is the persistent pursuit of information, understanding and skills that are acquired by hands on experience and continuous study. At St. Cloud State, we embrace research and seek to improve collaborations across campus with the common goal of promoting learning by integrating teaching, scholarship and research.

St. Cloud State celebrates student research each year by hosting an annual Research Colloquium and participating in the Minnesota Undergraduate Scholars Conference and Posters at Saint Paul. In addition, limited travel and research funding is available to students as a competitive award. These funds allow students to gain experience writing a grant, gaining relevant skills and presenting their work at regional and national conferences.

Contents

"As part of my doctoral work at Johns Hopkins Bloomberg School of Public Health, I have to communicate with scientists and researchers across many different disciplines — Saint Cloud State University's Student Research Colloquium gave me the ability to speak to them."

– Jordan Kuiper '15

Office of Research and Sponsored Programs
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Minnesota Undergraduate SCHOLARS

Minnesota Undergraduate Scholars is a consortium of institutions that supports the research, scholarly works and creative activity of undergraduates by providing avenues for funding, presentation resources and opportunities for undergraduates to present their work.

The consortium is committed to engaging undergraduate students throughout the MnSCU system in scholarly activities that will enrich their collegiate experience, open doors to career opportunities and lead to a life-long love of learning.

Two events are supported by the Minnesota Undergraduate Scholars consortium:
- The Minnesota Undergraduate Scholars Posters at St. Paul
- The Minnesota Undergraduate Scholars Conference

Taylor Schmit, State Sen. John Hoffman, Kylie Bruner, and Ashley Bisping

Theodore Rex, Robert Finstad, Ashley Bisping, Kylie Bruner, Megan Kalk, Taylor Schmit, Josefina Abdullah

Theodore Rex

Josefina Abdullah (left) and Megan Kalk (right)

POSTERS AT ST. PAUL

On March 17, 2016, Minnesota Undergraduate Scholars, a consortium of MnSCU institutions, hosted Posters at St. Paul, a multi-disciplinary poster presentation session at the Minnesota State Capitol. Outstanding undergraduate student researchers were identified and nominated by St. Cloud State faculty and academic administrators to participate in a competitive process to be selected to present their work at this prestigious event. Selected students traveled to the Capitol, met with their legislators and then presented their work in a poster session for an audience of faculty, administrators and state government leaders.

The purpose of this event is to provide undergraduate students the opportunity to share the results of their scholarly work with legislators and other leaders in state government. The messages our students communicate to legislators can impact Minnesota and the broader global community. Attendees to the poster session will see the many forms of undergraduate research that occur on several MnSCU campuses. The council hopes you gain an understanding of the tremendous impact that undergraduate research experience has on preparing students to become leaders and scholars in their future endeavors.

This year, presentations were conducted by 38 students representing six universities and two community and technical colleges. The schools represented at the event include:

Bemidji State University
Metropolitan State University
Minneapolis Community and Technical College
Minnesota State University, Mankato
Rochester Community and Technical College
St. Cloud State University
Southwest Minnesota State University
Winona State University

Congratulations again to the students selected to represent St. Cloud State!

LIST OF PRESENTERS:

Theodore Rex
"Place Politics in the Creation of the Boundary Waters Canoe Area Wilderness"
Faculty Sponsor: Gareth John

Robert Finstad
"Performance and Security Evaluation of Embedded Networked Systems using WirelessHART"
Faculty Sponsors: Tirthankar Ghosh & Yi Zheng

Megan Kalk & Josefina Abdullah
"Results from the Spring 2015 Student Survey AND the Fall 2015 Omnibus Statewide Survey"
Faculty Sponsors: Stephen Frank, James Cottrill, Ann Finan, Monica García-Pérez, Amanda Hemmesch Breaker, Nadeesha Lihinikedu Arachchige, Steven Wagner & Sandrine Zerbib

Kylie Bruner, Taylor Schmit, & Ashley Bisping
"Effects of a Persistent Organic Pollutant PCB-153 on the Development of Autoimmune Murine Type 1 Diabetes"
Faculty Sponsor: Marina Cetkovic-Cvrlje

Senator John Hoffman (36, DFL) serves as vice chair of the Environment and Energy Committee and is a member of the Health, Human Services and Housing Committee and E-12 Division Committee (Education Finance). He is a member of the Rules and Administration – Subcommittee on Elections, and he also serves on the Fish and Wildlife Subcommittee. His special legislative interests include; education, health and human services, energy, environment and commerce.

His specialties aligned directly with the students he met with (Ashley Bisping, Kylie Bruner, and Taylor Schmit) whose project was on the Persistent Organic Pollutant PCB-153 and its effects on Type-1 Diabetes.

PRESENTER BIOS:

Theodore Rex

Student: Theodore Rex
Major: Geography
Year in School: Senior
Faculty Sponsor: Gareth John

Title: Place Politics in the Creation of the Boundary Waters Canoe Area Wilderness (BWCAW)

Abstract: The more than 1 million acres that form the Boundary Waters Canoe Area Wilderness (BWCAW) in the northeast corner of Minnesota have become a desirable location for the more than 250,000 annual visitors looking to engage in such activities as canoeing, kayaking, hiking, camping and fishing. Prior to the area's designation as a wilderness area, however, many people called this area home and relied on the hunting, fishing, canoe trip guiding and other exploitations from the natural resources as not only their main source of income, but also as a natural way of life they had come to know. Drawing on archival analysis of documents that led to the passage of the Shipstead-Newton-Nolan Act (1930), the Wilderness Act (1964), and the Boundary Waters Canoe Area Wilderness Act (1978), personal letters, biographies, and personal interviews with local residents, my paper illuminates the politics over place between conservationists seeking to establish the wilderness area and the people that depended on the land for their sustenance in the creation of BWCAW. In particular I show how the history of the conflict over BWCAW's creation is represented, understood and experienced today.

Bio: My name is Theodore Rex and I reside in Buffalo, Minnesota. I was medically retired from the U.S. Army in 2014 after serving more than 15 years and am a veteran of Operation Iraqi Freedom. I am married to my wife Jamie of 13 years, and have two sons who are 11 and 9. I enjoy all outdoor activities and am interested in environmental issues, especially those of northern Minnesota. I graduated with a Bachelor of Elective Studies in geography in the spring 2016, and plan on going straight to graduate school.


Robert Finstad

Student: Robert Finstad
Major: Information Technology Security
Year in School: Senior
Faculty Sponsor: Tirthankar Ghosh, Yi Zheng

Title: Performance and Security Evaluation of Embedded Networked Systems using WirelessHART

Abstract: The project investigates how WirelessHART network protocol stacks are implemented and what communication modes and protocols are being used to transfer data in the network. Additionally, research is being conducted to investigate the security of the WirelessHART protocol stack and ways to design attack vectors to compromise the network. The project has been funded by a grant from Emerson Process Management. The project also includes interdisciplinary senior design projects with electrical engineering students including integrating WirelessHART components with custom embedded systems.

Bio: I am a senior at St. Cloud State University who graduated in May 2016 with a major in information technology security and minors in computer science and communication studies. I have volunteered as an IT intern at Boys and Girls Club of Central Minnesota. I have been an interdisciplinary undergraduate research assistant between IT and electrical engineering for a year and a half. I have been in the SCSU IT Security Club for nearly five years and was president my senior year. I competed as a team member in the Collegiate Cyber Defense Competition for the third time that spring. I have also worked in a team consisting of students from electrical engineering, computer engineering, mechanical engineering to develop smart more for wireless sensor network, sponsored by Emerson Inc.


Megan Kalk


Josefina Abdullah

Students: Megan Kalk, Josefina Abdullah
Major: Megan: Sociology and International Relations
Josefina: Sociology
Year in School: Senior
Faculty Sponsor: Stephen Frank, James Cottrill, Ann Finan, Monica García-Pérez, Amanda Hemmesch Breaker, Nadeesha Lihinikedu Arachchige, Steven Wagner, Sandrine Zerbib

Title: Results from the Spring 2015 Student Survey and the Fall 2015 Omnibus Statewide Survey

Abstract: The spring survey is an annual survey of St. Cloud State students. Student directors have been presenting results from this survey at the Undergraduate Research Colloquium since its beginning. At this time, the topic under consideration is St. Cloud State students' views on local police and safety. The fall statewide survey is an omnibus survey of Minnesota adults, which is highly regarded nationwide. At this time, the topics will include Minnesota views on the direction of the state, approval and job ratings of various state and national figures. We would like to include Minnesota views on racial equality and feelings toward police in their community. Breakdowns can be done by age, education, religion, party, income, gender and others if permitted.

Bios:
Megan Kalk: From Onamia, Minnesota. Has been the lead student director and assistant lead director of the SCSU Survey for two years. Megan is interested in gauging attitudes toward police, racial equality and immigrants.

Josefina Abdullah: Transfer student from Kuala Lumpur, Malaysia. Started off as a student caller and then went on to being the assistant lead director of the SCSU Survey. Loves working with people and is highly interested in the social problems that exist today. Other than that, hobbies include travelling and meeting new people to learn about their culture and their views or thoughts on the world.


Kylie Bruner


Taylor Schmit


Ashley Bisping

Students: Kylie Bruner, Taylor Schmit, Ashley Bisping
Major: Biomedical Science (all)
Year in School: Senior (all)
Faculty Sponsor: Marina Cetkovic-Cvrlje

Title: Effects of a Persistent Organic Pollutant PCB-153 on the Development of Autoimmune Murine Type 1 Diabetes

Abstract: Type 1 Diabetes (T1D) is an autoimmune disease, also known as juvenile diabetes for its tendency to be diagnosed in children and adolescents. T1D results in the elevated blood glucose levels due to the destruction of insulin-producing pancreatic beta cells by the particular type of own immune cells called T-cells. Due to the recent increase in prevalence of T1D, researchers believe environmental factors, such as persistent organic pollutants (POPs), may play a significant role in the onset of T1D. Polychlorinated Biphenyl-153 (PCB-153) was a compound utilized in the mass manufacture of many products, such as capacitors, paints and pesticides. Although usage of PCB-153 was banned in the United States in 1979, due to its POP's properties of long half-life and bioaccumulation, this compound is still found everywhere around the world, including being identified in human blood. Recent studies have shown the potential for PCB-153 to trigger metabolic responses involved in the development of type 2 diabetes. In contrast, there is no data showing the association of PCB-153 exposure and T1D. The objective of this study is to determine the effects PCB-153 on the development of autoimmune T1D in non-obese diabetic (NOD) mice, the best experimental model for studying T1D. Mice will be exposed to low (0.125 mg/kg) and high (12.5 mg/kg) doses of PCB-153 twice a week intraperitoneally, from eight to 24 weeks of age. Glucose levels, body weights, composition of different immune cell types (including several T-cell subtypes), as well as T-cell functions will be studied at several time points during the study. Our results will for the first time provide an insight about the diabetogenic potential of PCB-153 and its mechanism of action in the context of immune system cells in a murine model of T1D.

Bios:
Kylie Bruner: I am a senior biomedical science student at St. Cloud State University and after graduation I plan to gain experience in industry. I have been researching the effects of persistent organic pollutants on autoimmune disorders under the supervision of Marina Cetkovic-Cvrlje MD-PhD for the past two years, and it has vastly expanded my interest in pursuing research in the biomedical sciences and immunology. I am also a teacher's assistant for organic chemistry, a biology tutor and employee at Walgreens. Helping others through my passion in biomedical science, while challenging myself through research, is a great aspiration in my life.

Taylor Schmit: I am currently a senior at St. Cloud State University majoring in biomedical science and minoring in psychology. I spend most of my time working as a teaching assistant for the psychology department, acting as a volunteer and fundraising coordinator, conducting research in cell culturing in Dr. Cetkovic-Cvrlje's research lab, and working as a phlebotomist. It is a combination of my undergraduate experience at St. Cloud State and my overwhelming desire to help people that has led me to pursue graduate school and conduct research in essential oils as a form of alternative medicine.

Ashley Bisping: I am a senior at St. Cloud State University majoring in biomedical science. My goal with this degree is to pursue clinical research with a desire to work in the cancer research field. I have been actively involved in Dr. Cetkovic-Cvrlje's research lab at St. Cloud State for more than a year studying the effects of organic pollutants on type 1 diabetes. I believe that the scientific skills from research combined with the interpersonal skills from working with others will benefit me greatly moving into the clinical research field after graduation.

Songha Reu, Jeffrey Witthuhn, and Robert Finstad

MNSCU Undergraduate Scholars CONFERENCE

Conference of Undergraduate Scholarly and Creative Activity

The MnSCU state conference, the Minnesota Undergraduate Scholars Conference, was held at Winona State University on April 4, 2016. The conference was open to all disciplines for both oral and poster presentations. Students went through a process of selection after being nominated by faculty/staff and deans.

The schools involved include:

Bemidji State University
Inver Hills Community College
Metropolitan State University
Minneapolis Community and Technical College
Minnesota State University Moorhead
Minnesota State University, Mankato
St Cloud State University
Southwest Minnesota State University
Winona State University
Rochester Community and Technical College

Congratulations again to the students selected to represent St. Cloud State!

LIST OF PRESENTERS:

Robert Finstad
"Performance and Security Evaluation of Embedded Networked Systems using WirelessHART"
Faculty Sponsors: Tirthankar Ghosh, Yi Zheng

Songha Reu
"Academic Intervention and High School Completion for At-Risk Students: PSEO (Post Secondary Enrollment Options Program)"
Faculty Sponsors: David Robinson, Robert Johnson

Jeffrey Witthuhn
"(0,1) Matrix-vector product via Minimum Spanning Trees"
Faculty Sponsor: Andrew Anda

Student Research COLLOQUIUM

The 19th annual Student Research Colloquium took place April 19, 2016. Patterned after professional conferences, the Student Research Colloquium engages students in activities that enhance their success and learning.

Throughout the day, 433 student presenters showcased their work on 286 projects including, posters, paper/oral, formal papers or performance/ creative works. A total of 132 faculty members were engaged as sponsors, collaborating with students on their research, scholarship and creative activities. Student participants represented a variety of disciplines across all colleges and schools on campus and showcased their work for an audience of faculty, staff and community members.

By participating in this signature St. Cloud State event, students experience growth and development along multiple dimensions of Our Husky Compact. Promoting research, scholarship and creative work in collaboration with faculty is a vital component of higher education at St. Cloud State.

2016 FORMAL PAPER COMPETITION

1st Place:
Sinduja Thinamany, *Bisphenol A and Type 1 Diabetes: A Global Concern*
Sponsor: Marina Cetkovic-Cvrlje, Biology, College of Science and Engineering

2nd Place:
Brianna Balsemo, *Analysis of Lithic Tools and Points at the Little Elk River Mission Site*
Sponsor: Rob Mann, Anthropology, College of Liberal Arts

Finalists:
Oluwatobi Oluwagbemi, *Politics in Nigeria*
Sponsors: James Cottrill, Edward Greaves, Political Science, School of Public Affairs

Kaitlen Dahlberg, *A Method to Study Simulated Gambling Under the Same Conditions in Which Problem Gamblers Gamble*
Sponsor: Benjamin Witts, Community Psychology, Counseling and Family Therapy, School of Health and Human Services

2016 POSTER COMPETITION

1st Place:
Tyler Baxter, *Laser Ablation Material Capture*
Sponsor: John Sinko, Physics and Astronomy, College of Science and Engineering

2nd Place:
Jashmin Nakarmi, *Art and Design by Jashmin Nakarmi*
Sponsor: Keith Christensen, Art, School of the Arts

Dr. Marina Cetkovic-Cvrlje and Sinduja Thinamany

Student Research Presentation

2016 Student Research Colloquium awards plaques

Keith Christensen and Jashmin Nakarmi

3rd Place:
Heidi Heldberg, *The Cement Mixer Experiment: How rapidly will igneous rocks be reduced in size during stream transport?*
Sponsor: Katherine Pound, Atmospheric and Hydrologic Sciences, College of Science and Engineering

Finalists:
Kylie Bruner and Taylor Schmit, *Effects of Bisphenol A on the Function of Immune T-cells in an Experimental Type 1 Diabetes Mouse Model*
Sponsor: Marina Cetkovic-Cvrlje, Biology, College of Science and Engineering

Jennifer Wyers, *What is the Sedimentary Context for Bison Bone Discovery at Lake Victoria, Minnesota?*
Sponsor: Katherine Pound, Atmospheric and Hydrologic Sciences, College of Science and Engineering

Sutapa Biswas, *Testing Non-Linear & Fractional Order Circuit*
Sponsor: John Sinko, Physics and Astronomy, College of Science and Engineering

Jessica McDonald, *Influence of Lake-to-Lake Connections on Lake-Effect Snow Amounts in the Lake Michigan Snowbelt*
Sponsor: Alan Srock, Atmospheric and Hydrologic Sciences, College of Science and Engineering

2016 PAPER/ORAL COMPETITION

1st Place:
Molly Lou Pintok, *Generating Discourses: Framing Visions of Landscape Concerning Windfarm Implementation in Wales, UK and Minnesota, USA*
Sponsor: Gareth John, Geography and Planning, School of Public Affairs

2nd Place:
Sunghee Kim, Sruthi Shankar, and Duha Vang, *Can Flatworms be used as Behavioral Screens for Potential Anti-Epileptic Drugs?*
Sponsor: Latha Ramakrishnan, Chemistry, College of Science and Engineering

3rd Place:
Annaliese Heinicke, *Of Moose and Men: A Geographical Synthesis Towards Understanding the Declining Moose Population in Minnesota*
Sponsor: Gareth John, Geography and Planning, School of Public Affairs

Finalists:
Megan Cox, *Modulation of Estrogenic Effects via Temperature on Two Life Stages of Fathead Minnow*
Sponsors: Heiko Schoenfuss, Jessica Ward, Biology, College of Science and Engineering

Elizabeth Harri-Dennis, *Sign-Tracking in the Madagascar Hissing Cockroach*
Sponsor: Benjamin Witts, Community Psychology, Counseling and Family Therapy, School of Health and Human Services

Neha Hirlekar, Mofeed Issa, Sujata Dutta and Anil Mangolia, *Layout Improvement at a Medical Devise Refurbishment Business*
Sponsor: Hiral Shah, Mechanical & Manufacturing Engineering, School of Computing, Engineering and Environment

Lance Sternberg, *Shadow of a Forgotten Past: Historical Amnesia and The Dakota Conflict of 1862*
Sponsor: Mary Wingerd, History, College of Liberal Arts

Kandice Byron, *High and Low Frequency Vocabulary Use and Social Registers*
Sponsor: Choonkyong Kim, English, College of Liberal Arts

2016 PERFORMANCE/CREATIVE WORK

Outstanding Performance/Creative Work:
Cat Carr, Jessica Peters, Robert Wolf and Tim Thole, *Phillip Glass Buys a Loaf of Bread*
Sponsor: Brenda Wentworth, Theatre and Film Studies, School of the Arts

The 2016 Student Research Colloquium had 464 students presenting 288 projects in collaboration with 132 faculty mentors.

Council on Undergraduate Research

The mission of the Council on Undergraduate Research (CUR) is to support and promote high-quality undergraduate student-faculty collaborative research and scholarship. The Council on Undergraduate Research, founded in 1978, is a national organization of individual and institutional members representing more than 900 colleges and universities.

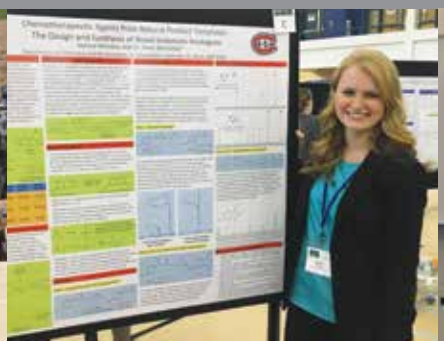
The student-based events are supported by the Council on Undergraduate Research
- Posters on the Hill – Washington D.C.
- Research Experiences for Undergraduate Symposium (REUS)
- National Conference on Undergraduate Research (NCUR)

Participation in the National Conference on Undergraduate Research was made possible through a generous grant from the St. Cloud State University Foundation. The Foundation is committed to directly impacting the work of students and faculty through its annual Foundation grant program.

"The Foundation Board felt strongly that we should commit unrestricted gifts to support this very important part of the University's work with students and faculty. The impact is real and the experience is one students will never forget"

Matt Andrew, Vice President of University Advancement

Left to Right (Back Row) Carrie, Kylie, Natalie, Duha, Sunghee, Taylor, Sruthi, Jill (Front Row) Ashley, Casey



Natalie McIntire with Poster

Casey Lundy Presentation

National Conference on Undergraduate Research

The Council on Undergraduate Research hosted a multi-disciplinary research conference in Asheville, North Carolina. Outstanding undergraduate student researchers were identified and nominated by St. Cloud State faculty and academic administrators to participate in a competitive process to be selected to present their work at this prestigious event.

The purpose of the conference was to celebrate the research, scholarship and creative work of undergraduate students and the faculty mentors from around the nation and the world. Students had an opportunity to join in a great interdisciplinary conversation with fellow researchers, in the same field and in other intellectual communities.

LIST OF PRESENTERS:

Casey Lundy, *Acoustic Phonetic Accounts for the Pronunciation of the Inflectional Suffix /z/ in Central Minnesota English*
Sponsor: Ettien Koffi, Linguistics and Spanish, College of Liberal Arts

Kylie Bruner, Taylor Schmit and Ashley Bisping, *Does Persistent Organic Pollutant PCB-153 Affect Development of Autoimmune Type 1 Diabetes?*
Sponsor: Marina Cetkovic-Cvrlje, Biology, College of Science and Engineering

Sunghee Kim, Sruthi Shankar and Duha Vang, *Can Flatworms be used as Behavioral Screens for Potential Anti-Epileptic Drugs?*
Sponsor: Latha Ramakrishnan, Chemistry, College of Science and Engineering

Natalie McIntire, *Chemotherapeutic Agents from Natural Product Templates: The Design and Synthesis of a Novel Indanone Analogue*
Sponsor: Mark Mechelke, Chemistry, College of Science and Engineering

Student Research FUNDS

St. Cloud State University considers research, scholarship or creative works performed under the direction of a faculty member as vital components of higher education. Each semester the university provides student research funds to undergraduate, graduate and doctoral students with those accepting an award presenting their project at the annual Student Research Colloquium. This year, 75 projects were awarded more than $40,000 to fund their research and scholarship.

LIST OF AWARDEES:

Martina Abat - $106
Major: Teaching English as a Second Language;
Faculty Sponsor: Ettien Koffi
Double Coda Devoicing in Western South Salvic Speakers' Accented English

Shoaib Ahmed, Wei Yi, Suchit Khadge - $350
Major: Electrical Engineering; Faculty Sponsor: Timothy Vogt
Wireless Health Monitoring System

Joshua Andersen, Christopher Kinnaman, Austin Mackedanz - $500
Major: Electrical / Computer Engineering;
Faculty Sponsor: Michael Glazos
Concussion Detection and Notification System for Football Helmets

Sarah Anderson, Julia McClung - $272
Major: Communication Sciences and Disorders;
Faculty Sponsor: Sarah Smits-Bandstra
The Effect of Baby Sign on Early Language Development of At-Risk Populations

Timila Bajracharya - $580
Major: Geography and International Studies and Cartography;
Faculty Sponsor: Mikhail Blinnikov
Contiguous United States Median Household Income and Poverty Percentage, 2014

Jennifer Beals - $999
Major: Biology; Faculty Sponsor: Matthew Julius
The Origin Evolution of the Raphe in Diatoms

Rose Bennett - $476
Major: Geography; Faculty Sponsor: Gareth John
Cistercian Monasteries and Facility Use Change in France

Ashley Bisping, Amanda Byers, Elizabeth Blomker, Gabby Pung - $500
Major: Biomedical Science;
Faculty Sponsor: Marina Cetkovic-Cvrlje
Characterization of Tissue Pathology in Pancreata of NOD Mice Exposed to Two Persistent Organic Pollutants (POPs)

Sutapa Biwas, Michael Severson - $500
Major: Physics; Faculty Sponsor: John Sinko
Magnetic Mirror & Plasma Trapping

Lee Bosch, Larry Williams - $410
Major: Electrical Engineering; Faculty Sponsor: Timothy Vogt
Smart LED Lighting System

Kylie Bruner, Taylor Schmit - $500
Major: Biomedical Science;
Faculty Sponsor: Marina Cetkovic-Cvrlje
How Does Treatment with Two Different Persistent Organic Pollutants Affect T-cell Function in Mice with Autoimmune Type 1 Diabetes

Casey Burnett, James Pool, Brett Mattson - $159
Major: Community Psychology, Chemical Dependency;
Faculty Sponsors: Shu-Ching Wang, Yuh Jen Guo
A Study of PTSD and Levels of Stress Among College Students at St. Cloud State University

Danielle Burski - $1,000
Major: Masters of Science Biology;
Faculty Sponsor: Anthony Marcattilio
Stress Induced Mate Choice Copying in Domestic Guppies (Poecilia reticulata)

Chris Crawford - $469
Major: Astrophysics; Faculty Sponsor: John Sinko
Plasma-Enhanced Chemical Vapor Deposition of Diamond-Like Carbon

Kaitlen Dahlberg - $132
Major: Psychology; Faculty Sponsor: Benjamin Witts
A Method to Study Simulated Gambling Under the Same Conditions in Which Problem Gamblers Gamble

Nicholas DeChene, Brittany Gotzinger, Amanda Gay - $1,000
Major: Clinical Mental Health Counseling;
Faculty Sponsor: Yuh-Jen Guo
Student-Led and Live-Supervised Group Experience for Leadership Development

Mikyas Desta, Bidish Pudasaini - $400
Major: Electrical Engineering; Faculty Sponsor: Md M Hossain
Android Controlled Wireless Sensor Network

Eryn Ebinger, Victoria Korn, Utku Hasbay, Justin Thorson - $1,000
Major: Biomedical Science;
Faculty Sponsor: Marina Cetkovic-Cvrlje
Effects of Exposure to Combined Persistent Organic Pollutants (POPs) on Development of Autoimmune Diabetes in NOD Mouse Model

Peter Eischens - $500
Major: Rehabilitation Counseling;
Faculty Sponsor: Amy Hebert-Knopf
National Council on Rehabilitation Education Spring 2016 Conference

Dustin Gilyard - $500
Major: Mathematical Physics; Faculty Sponsor: John Sinko
Laser Plasma Generation For A Propulsion System

Dustin Gilyard - $500
Major: Mathematical Physics; Faculty Sponsor: John Sinko
Pulsed Plasma Thruster

Mary Halbur - $620
Major: Applied Behavior Analysis;
Faculty Sponsor: Benjamin Witts
A Selective Component Analysis of the Excuse Me Drill in Young Children

Danielle Hall - $465
Major: Biochemistry; Faculty Sponsor: Thomas Gardner
Synthesis and Functional Analysis of a Redox-switchable Hemiporphyrazine Compound

Danielle Hall - $498
Major: Biochemistry; Faculty Sponsor: Thomas Gardner
Synthesis of a Novel Aromatic Hemiporphyrazine

Annaliese C. Heinicke - $500
Major: Geography, B.E.S Animal Behavior;
Faculty Sponsor: Gareth John
Presentation of Senior Thesis, "Of Moose and Men: A Geographical Synthesis Towards Understanding the Declining Moose Population in Minnesota" at the AAG 2016 conference

Seth Hennagir - $489
Major: Chemistry; Faculty Sponsor: Russell Lidberg
Charge Carrier Mobility Determination of Polyacenes by Time-of-Flight

Seth Hennagir - $493
Major: Chemistry;
Faculty Sponsor: Russell Lidberg, Tamara Leenay
Charge Carrier Mobility Determination of Rubrene Derivatives

Kumiko Highley - $833
Major: Ecology and Natural Resources;
Faculty Sponsor: Anthony Marcattilio
Genetic Component to Mate Choice Copying in Poecilia reticulata

Travis Hislop - $485
Major: Chemical Physics/Electro-Optical Physics;
Faculty Sponsor: Thomas Gardner
9H-carbazole-1,2,7,8-tetracarbonitrile: A Derivative of Carbazole

Edward Iskandar - $936
Major: Computer Science; Faculty Sponsor: Mehdi Mekni
Feasibility Study on Navigation and Obstacle Avoidance for Drones

Nusrat Jahan - $1,000
Major: Cellular and Molecular Biology;
Faculty Sponsor: Ryan Fink
Field Validation of MALDI-ToF by using 16S rDNA Sequencing

Darshan Jain, Daniel Warzecha, Kusal Feelixge - $500
Major: Electrical Engineering; and Computer Engineering;
Faculty Sponsor: Mark Petzold
Room Mapping Robot Swarm

Maija Jedynak, Alice Sui, Matthew Yang, Michael Chu, Micheal Pederson, Kaitlin Dick, Megan Stein - $477
Major: Medical Labatory Science; Faculty Sponsor: Louise Millis
Isolation of Antimicrobial Compounds from Bacteria

Rebecca Jensch - $823
Major: Biological Sciences - Cell and Molecular;
Faculty Sponsor: Louise Millis
The Effects of the Contaminant, Sulfamethoxazole, on Plesiomonas Shigelloides

Cameron Johnson, Gabriel Tudor, Shana Rogan - $500
Major: Biomedical Science;
Faculty Sponsor: Marina Cetkovic-Cvrlje
Characterization of Immune Cell Types of Mice Exposed to Two Persistent Organic Pollutants During Development of Autoimmune Diabetes

William Julius - $425
Major: Mathematical Physics; Faculty Sponsor: John Sinko
High Voltage Modification of Photo-Electric Absorption in Metallic Foils

Casey Kipping, Sadhana Bon - $958
Major: Biology, and Biomedical Sciences;
Faculty Sponsor: Ryan Fink
Characterization of Salmonella Isolates from Imported Frozen Fish Sold in Central Minnesota

Jim Knutson-Kolodzne - $400
Major: Higher Education Leadership;
Faculty Sponsor: Steven McCullar
The Relationship between Patterns of Student Involvement and Accultration as Demonstracted by American Indian College Students

Syntyche Koumaglo, Isaac Durant, Jesus Perez - $500
Major: Electrical Engineering; Faculty Sponsor: Michael Glazos
Power Generating Bicycle Trainer

Anthony Kunkel, Daniel Finazzo - $206
Major: Science Quantum Information Science, Information Technology Security; Faculty Sponsor: Dennis Guster
Quantum-mechanical Treatment of Hydrogen Ion Dynamics in Carbon Nanotubes

Jon Lepp - $500
Major: Electrical Engineering; Faculty Sponsor: John Sinko
Multispectral Diode Laser

Ellen Liebe, Megan Coffman - $937
Major: Communication Sciences and Disorders;
Faculty Sponsor: Theresa Estrem
Interprofessional Curricular Goals and Outcomes for Students and Faculty

Trista Linn - $596
Major: Applied Behavior Analysis;
Faculty Sponsor: Benjamin Witts
Consideration of Reinforcer Magnitude with Respect to Preference and Reinforcer Assessment Outcomes

Rene Martin - $726
Major: Ecology, and Field Biology;
Faculty Sponsor: Matthew Davis
Evolution of Dentition and Phylogenetic Reconstruction of Lanternfishes (Teleostei: Myctophiformes)

Emma Mathison - $461
Major: Industrial Organization Psychology;
Faculty Sponsor: Daren Protolipac
Development of a Measure of Statistical Software-Related Stress

William Muench - $500
Major: Electrical Engineering; Faculty Sponsor: John Sinko
Fiber Optic Detection of Plasmas within a Vacuum Environment

Kristi Noble - $200
Major: Industrial Organization Psychology;
Faculty Sponsor: Jody Illies
Development of a Model to Predict Willingness to Disclose a Disability

Emily Olson - $853
Major: Ecology and Natural Resources;
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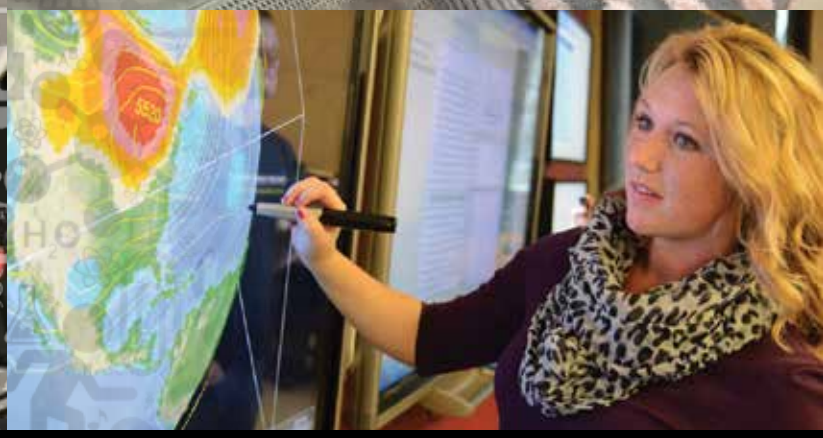

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