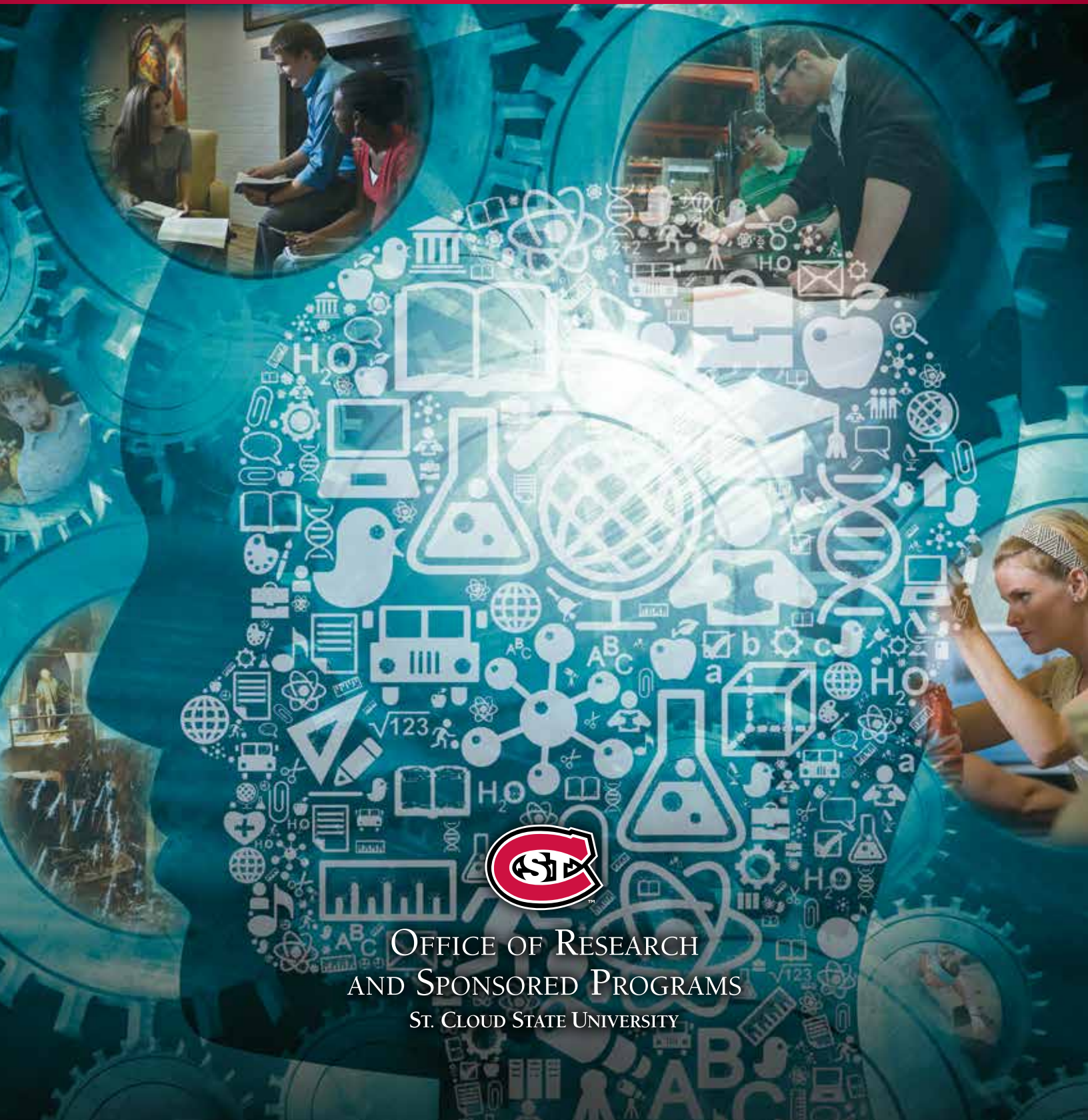


# FY2015 | Research Profile

# Seek and Apply Knowledge





Dr. Marilyn Hart

# Seek and Apply Knowledge

St. Cloud State University has a rich history of promoting research, scholarship and creative activity that facilitates advancement of disciplines. Fiscal year 2015 was no exception, with many notable accomplishments by faculty, staff and students who strove to **seek and apply knowledge**. 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 University, we embrace research and seek to improve collaborations across campus with the common goal of promoting learning by integrating teaching, scholarship and research.

I am very pleased to highlight a representation of the notable research accomplishments. You will find several themes: a collaborative student focus working with the community, customized training, preparing students to meet the demands of industry and manufacturing, and mutually beneficial partnerships. These themes exemplify one outstanding feature of St. Cloud State University. We proudly contribute to the growing field of knowledge by faculty, student and staff hands on engagement as we reach out to our community.

St. Cloud State University celebrates student research each year by hosting an annual Research Colloquium, participating in the MN 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.

It is my hope that as you read the highlighted articles, you will agree that St. Cloud State University is a growing leader of faculty, staff and student scholarly activities.

Kindly,

Dr. Marilyn Hart

Associate Provost of Research  
Dean- School of Graduate Studies (Interim)

## Contents

- 6 External Grants and Contracts AWARDED
- 17 External Grants and Contracts SUMMARY
- 18 Minnesota Undergraduate SCHOLARS
- 20 Student Research COLLOQUIUM
- 21 Student Research FUNDS
- 23 New Researcher FUNDS
- 23 University Researcher FUNDS
- 24 Faculty Improvement Grants SHORT-TERM
- 25 Faculty Improvement Grants RESEARCH
- 25 Saigo ENDOWMENT



OFFICE OF RESEARCH  
AND SPONSORED PROGRAMS  
ST. CLOUD STATE UNIVERSITY



# Cybersecurity Scholarships

by University Communications



**Above:** President Potter addresses the audience at a CyberCorps Cybersecurity Community Awareness Event.

**Left:** Representatives from St. Cloud State University, Lake Superior College and Century College accept the Scholarship for Service Award from representatives from the National Science Foundation and the Department of Homeland Security in Washington D.C.

St. Cloud State University secured a \$2.78 million Scholarship for Service Award for student scholarships to train future cybersecurity professionals. The award from the National Science Foundation and the Department of Homeland Security certifies that St. Cloud State is a member of the CyberCorps Scholarship for Service Community, which is made up of about 55 universities from across the country working to educate and train students to be future cybersecurity professionals.

“The CyberCorp Community is one of the most prestigious communities in cybersecurity,” said Tirthankar Ghosh, principal investigator on the grant and director of the St. Cloud State Information Technology Security program.

The five-year grant provides two-year scholarships for six students each year of the grant. The first scholarships were awarded for fall semester 2015. Awards are granted go to the top three undergraduate students in information technology security and to the top three graduate students in information assurance. The undergraduate scholarship covers tuition, books, health insurance and travel to the annual CyberCorps job fair and conferences and a stipend of \$20,000 per year.

The graduate scholarship covers the same expenses and includes a stipend of \$32,000 per year. Following graduation, the students will work for the government at any level in a cybersecurity role for a

period of time equal to the length of their scholarship. In addition to the post-graduation work requirement, scholarship recipients at St. Cloud State will form a Community Cybersecurity Champions team responsible for bringing awareness of cybersecurity issues to the broader community through seminars, workshops and talks to area high school students, teachers and counselors, Ghosh said. “They will increase general awareness among the community about cyber threats and everything,” he said. “These groups would be very proactive in leading this effort.”

The University is partnering in the grant with information technology programs at Century College, White Bear Lake, and Lake Superior College, Duluth, to encourage students there to seek a cybersecurity degree from St. Cloud State. Five representatives from St. Cloud State and one each from Century College and Lake Superior College traveled to Washington D.C. to accept the award at the CyberCorps participating institutions meeting and job fair.

The schools also received \$150,000 to hold a Generation Cyber camp in summer 2015. St. Cloud State incorporated the camp into two of its Pipeline Summer Camp programs, and Lake Superior College hosted its own Generation Cyber camp program.

# Rehabilitation Counselor Education Training Grant Addresses Critical Shortage in the Field

by University Communications

Graduate students in the Rehabilitation Counselor Education program are eligible for federal training assistance, thanks to a five-year U.S. Department of Education grant of \$986,264 from 2014 to 2019. The grant provides almost \$200,000 per academic year to support students pursuing a degree in Rehabilitation Counselor Education with tuition assistance, a one year intern, and two years of experience working with Vocational Rehabilitation Services.

"I'm thrilled that our program can provide opportunities for students to pursue a master's degree in Rehabilitation Counselor Education who may not otherwise be able to afford to pursue this degree on their own," said Amy Hebert Knopf, Rehabilitation Counseling associate professor. The grant helps St. Cloud State recruit a more diverse group of students and students with disabilities to pursue a degree in rehabilitation counseling. Students receiving the scholarships complete their internships at a public vocational-rehabilitation agency or non-profit community rehabilitation program that operates under contract with the federal-state rehabilitation system.

Nationally, there is a shortage of Rehabilitation Counselors, especially those from underrepresented populations. St. Cloud State University has played an important role in meeting the need for professional education in the field of rehabilitation counseling in Minnesota. The program at St. Cloud State dates back to 1967, has conferred more than 500 graduate degrees since its inception, and continues to be a very active major. Nearly 100 percent of graduates are employed at or shortly after graduation. It is also one



Rachel Briant,  
Amy Knopf, and  
Brad Kuhlman

of the oldest accredited counselor education programs on campus. Graduates from the Rehabilitation Counselor Education program work in a wide range of careers such as, rehabilitation counseling, Veterans Affairs, blindness, deafness, medical, psychiatric, private and clinical rehabilitation.

The grant is designed to ensure skilled personnel are available to serve the rehabilitation needs of people with disabilities. The program requires students who receive assistance to either work for a time in public or private nonprofit rehabilitation agencies or related agencies or to repay the funds later. The grant is not new for St. Cloud State. The Rehabilitation Counselor Education program previously received continued funding in the 1970s and 1980s.



**Fall 2014** Student-run Husky Productions is teaming with FOX Sports this season to produce five live men's hockey broadcasts airing on FOX Sports North and FOX College Sports. The opportunity puts student-produced work in front of thousands of Huskies fans locally and nationally. Husky Productions' student broadcasters produce live coverage of all home men's hockey games. Coverage has recently expanded to include women's hockey, football and men's and women's basketball.



# St. Cloud State University Partners with Grede and St. Cloud Technical and Community College to Meet Current and Future Workforce Needs

*Tammy Anhalt-Warner*

To maintain a strong economic base, Minnesota must provide more trained individuals to fill the employment demands of the industrial and business segment of the economy. Through the Department of Employment and Economic Development's Minnesota Job Skills Partnership program, partnerships between business and education are formed to facilitate training that meets the current and future needs offering Minnesota's workforce long-term professional growth and economic opportunity.

A recent partnership between Grede, St. Cloud State University, and St. Cloud Technical and Community College was made possible through support from the Minnesota Job Skills Partnership program. Grede St. Cloud, formally St. Cloud Foundry, is an iron foundry that designs, develops and manufactures cast and assembled components for the transportation and industrial markets. Grede is a full-service supplier with complete design, engineering, testing and manufacturing capabilities. The St. Cloud foundry melts approximately 200,000 tons of metal each year and produces 85,000 tons of casting per year. It primarily serves the automotive transportation industry.

Grede is embarking on an extensive expansion that will position the company for the future and fulfill demands of the manufacturing sector. This is the largest expansion of an existing private-sector business in the St. Cloud area since 2011 and will result in the addition of approximately 30 new employees during the first phase and a total of 100 jobs through the life of the three-year Minnesota Job Skills Partnership.

To prepare for Grede's expansion, St. Cloud State University is working with Grede for the next three years to develop customized training to broaden the content of various training areas and improve it with additional technologies where appropriate. The outcome of this project will train workers, expand work opportunities and keep high-quality jobs in the St. Cloud based business.



CMM machine in layout



Tapping out the melt furnace



Minnesota Job Skills Partnership Signing Ceremony



Pattern Shop



Representatives from SCSU, SCTCC, and MJSP

# St. Cloud State University Collegiate Recovery Community

*By University Communications*

St. Cloud State will support more students in substance-abuse recovery thanks to a \$77,000 grant from the Otto Bremer Foundation.

The recovery community was the first residential recovery community offered at a public university in the upper Midwest when it was established in 2012. It serves both St. Cloud State and St. Cloud Technical and Community College students. The grant funds a recovery community coordinator to lead the St. Cloud State Recovery Community, said Jennifer Sell Matzke, assistant dean of students.

The community serves resident students in recovery. The students participate in Students Taking Action in Recovery and Service, a student organization recognized as the Outstanding New Student Organization of the Year in 2013. Programing includes housing, customized training, peer support and clinical services.

The grant highlights St. Cloud State's efforts to reduce high-risk drinking among both students and community residents in order to create a welcoming environment for students in recovery. The Otto Bremer Foundation was impressed with the work being done on campus and saw the grant as a way to push those efforts to the next



2013-2014 U-CHOOSE staff: Jen Sell Matzke, Caitlin Dinneen, Calvin Watts, Jean Dempsey, and Jen Waletzko Johnson

level, she said. High-risk drinking, defined as five or more drinks in one sitting during the past two weeks, has decreased at St. Cloud State from 46.4 percent in 2008 to 27.8 percent in 2014, which is lower than the national average.



**Fall 2014** The Northwestern Mutual Sales Lab is a state-of-the-art learning environment where students can experience sales presentations in a professional, interactive setting that features digital, high definition cameras, real-time instructor feedback, Internet and Cloud capabilities for remote presentations and feedback and more. The lab offers a viewing and control room connected to the Northwestern Mutual Sales Room and a specialized professional selling classroom.

The lab was made possible thanks to a gift from Northwestern Mutual and has the potential for professional development training and applications in other academic areas.



## External Grants and Contracts AWARDED

Scientific investigation, scholarly activity and creative achievement are vital to St. Cloud State University's mission of offering accessible, high quality education. In fact, research at the university is as much about effective teaching as it is about contributing to knowledge. Through research activities, faculty members improve expertise in their disciplines and pedagogy and also engage students in the excitement of discovery and creation.

### ACADEMIC AFFAIRS

#### **Lisa Foss - \$5,555**

Office of Strategy, Planning and Effectiveness, "*Multistate Collaborative to Advance Learning*" – St. Cloud State University Foundation

#### **Lisa Foss - \$5,000**

Office of Strategy, Planning and Effectiveness, "*Minnesota VALUE Collaborative Project*" - Association of American Colleges and Universities

#### **Stephanie Houdek, Brian Nyholm, and Nancy Mills - \$10,000**

Academic Learning Center, "*Developmental Math Summit*" – Minnesota State Colleges & Universities

#### **Randy Kolb - \$797**

School of Graduate Studies, "*Statistical Consulting and Research Center*"

#### **Mike Sharp and Michael Penrod - \$4,925**

Advising Center/Online Education, "*Adult Learning Workshops*" – Minnesota State Colleges & Universities

### CENTER FOR CONTINUING STUDIES

#### **Tamera Anhalt-Warner - \$5,000**

Center for Continuing Studies, "*Netgain Cash Contribution*" — Minnesota Job Skills Partnership

#### **John Burgeson - \$25,300**

Center for Continuing Studies, "*Teen Crash Avoidance Skills and Parent Awareness Program*" — State Farm

#### **Larry Nadeau - \$728,702**

Minnesota Highway Safety and Research Center, "*AAA Driving*"

#### **Larry Nadeau - \$871,894**

Minnesota Highway Safety and Research Center, "*Driving Range*"

## St. Cloud State University Hosts Educational Summit for Developmental Math

*University Communications, Stephanie Houdek, and Brian Nyholm*

St. Cloud State University was selected as a recipient for a \$10,000 grant from Minnesota State Colleges and Universities (MnSCU) Academic and Student Affairs for regional educational summits for developmental education.

St. Cloud State University, in collaboration with Minnesota State University–Moorhead, Minnesota State University–Mankato, and Anoka Ramsey Community College, provided the opportunity for collaborative discussions among the faculty, staff and administrators involved in developmental math programs at MnSCU institutions in an attempt to (1) improve course design and program development and (2) implement best practices to improve outcomes for developmental math students.

Led by Stephanie Houdek, co-director Math Skills Center, and Brian Nyholm, Math Skills Center assistant professor, the developmental math summit held in August 2015 hosted forty-five participants representing 23 MnSCU institutions. The summit offered collaborative discussions among faculty, staff and administrators involved in developmental math programs with an overall goal of improving course design, program implementation and best practices in teaching. Topics included improving student success and retention rates; using technology to enhance student learning; the role of student support services in developing math learners; interventions to improve students' math skills before they enroll in college to minimize the need for developmental math; and contextualizing basic math concepts with occupational or college-content coursework.

## COLLEGE OF LIBERAL ARTS

### Kelly Branam Macauley - \$24,650

Sociology and Anthropology, "*Bad Pass Trail - Northwest College*" — Northwest College

### Mark Eden - \$3,000

Mass Communications, "*The School of the Arts Creative Art Series: Screening of 'Visitors'*" followed by Q&A w/director Godfrey Reggio/Master class w/Mr. Reggio the next day" — Central Minnesota Arts Board

### Robert C. Johnson - \$215,000

Access and Opportunity Program, "*Intervention for College Attendance Program: Summer Camps*" — Minnesota Office of Higher Education

### Robert C. Johnson - \$25,000

Access and Opportunity Program, "*Intervention for College Attendance Program: Success Beyond the First Year*" — Minnesota Office of Higher Education

### Robert C. Johnson - \$37,484

Access and Opportunity Program, "*Promoting Academic Success for Underrepresented Students*" — Minnesota Office of Higher Education

### Kyoko Kishimoto - \$9,944

Ethnic and Women's Studies, "*Minnesota Young Women's Collaborative at St. Cloud State University*" — National Asian Pacific American Women's Forum

### Rob Mann - \$9,867

Sociology and Anthropology, "*Fort or Folly: Using Remote Sensing and Archaeology to Locate the Dakota War Era Fort Fair Haven*" — Minnesota Historical Society

### Mark Muniz - \$9,996

Sociology and Anthropology, "*Building Chronologies and Collaboration through Archaeological Research in Lake County, Minnesota*" — Minnesota Historical Society

### Daren Protolipac, John Kulas, and Jody Illies - \$1,300

Psychology, "*Upward Consulting Services*" — Minnesota Management & Budget

## National History Day at St. Cloud State University

Supported by the Minnesota Historical Society, National History Day is a yearlong program that engages students in grades six through 12 in the study and analysis of history. History Day offers an opportunity for students to explore their interests in history in greater depth, accumulate valuable research and analytical skills, and discover for themselves the value of the study of the past. For the community, History Day offers a chance to participate as local students create their own learning opportunities and examine topics relating to world, national, state and local history.

The 2015 History Day theme, "Leadership & Legacy in History," provided an opportunity for students to take a deeper look at the legacy that has resulted from a specific leader or group of leaders. Students were required to address both elements of the theme by examining the actions of a leader - before, during, and after leadership - and how those actions fostered change.

St. Cloud State University has hosted the event for over twenty five years. It has enjoyed participation from public and private schools in St. Cloud, Sauk Rapids, Rice, Long Prairie, Willmar, Chisago

Lakes, Buffalo, Milaca, St. Francis, Albany, St. Joseph, Cedar Creek, Eden Valley, Watkins, Zimmerman, St. Michael, Albertville, Holdingford, Big Lake, Becker, Princeton, Elk River, and Cokato, as well as a number of home schools in central Minnesota.



History Day Exhibit



## COLLEGE OF SCIENCE AND ENGINEERING

**Adel Ali and Kaelyn Friese - \$29,241**

College of Science and Engineering, *"North Star STEM Alliance: Louis Stokes Alliances for Minority Participation"* — University of Minnesota

**Jorge Arriagada - \$27,440**

Biology, *"Monitoring and Controlling Invasive Plant Species at Camp Ripley and Arden Hills Military Training Sites"* — Minnesota Department of Military Affairs

**Matthew Davis - \$306,542**

Biology, *"Collaborative Research: Diversification in the Deep-Sea and the Evolution of Fangs, Bioluminescence, Hermaphroditism, and Marine Habitat Transitions"* — National Science Foundation

**Matthew Davis - \$28,040**

Biology, *"316(b) Fishes Identification"* — Xcel Energy

**Kristin Gulrud - \$4,500**

Biology, *"Microbiologics Project & Training Workshop"* — Microbiologics, Inc

**John Harlander - \$112,112**

Physics & Astronomy, *"ICON Satellite Project"* — Praxis, Inc.

**John Harlander - \$22,444**

Physics & Astronomy, *"MIGHTI ICON Satellite Project"* — ATK Spacecraft Systems and Services

**Kurt Helgeson - \$147,000**

Environmental and Technological Studies, *"Mobile Labs Program"* — St. Cloud State University Foundation

**Matthew Julius - \$1,630**

Biology, *"Phytoplankton Lab"*

**Matthew Julius - \$10,000**

Biology, *"Production of high-value food products from algal fermentation using whey co-products"* — Midwest Dairy Association

**Rebecca Krystyniak - \$150,000**

Chemistry and Biochemistry, *"Paraprofessional Residency Program - An Alternative Pathway Approach to Increasing Diversity in Teaching"* — Bush Foundation

**Annette Lee - \$20,000**

Physics & Astronomy, *"Native Skywatchers - Research, Curriculum and Educator Workshops"* — Minnesota Space Grant

**Russell Lidberg - \$5,000**

Physics & Astronomy, *"NanoVox: Create Minnesota State Colleges and Universities Hub"* — Minnesota Department of Employment and Economic Development

**Russell Lidberg - \$309**

Physics & Astronomy, *"Center for Microscopic Imaging & Analysis"*

**Katherine Pound - \$10,000**

Atmospheric and Hydrologic Sciences, *"Stream Transport"* — St. Cloud State University Foundation

**Latha Ramakrishnan and Mark Mechelke - \$281,884**

Chemistry and Biochemistry, *"MRI: Acquisition of a 400 MHz NMR Spectrometer - A Vital Instrument to Sustain and Enhance Research and Scholarship at St. Cloud State"* — National Science Foundation

**David Robinson - \$18,798**

Mathematics and Statistics, *"Analysis of Data from Stearns County Jail"* — County of Stearns

**Heiko Schoenfuss - \$40,912**

Biology, *"Contaminants of Emerging Concern in Great Lakes Basin"* — United States Fish & Wildlife Service

**Heiko Schoenfuss - \$364,000**

Biology, *"Biological Consequences of Septic Pollution in Minnesota Lakes"* — Environment and Natural Resources Trust Fund

**Heiko Schoenfuss - \$16,464**

Biology, *"Ecotoxicogenomics based water quality monitoring in Minnesota"* — Minnesota Pollution Control Agency

**Heiko Schoenfuss, Jessica Ward, and Stephen Bartell - \$446,728**

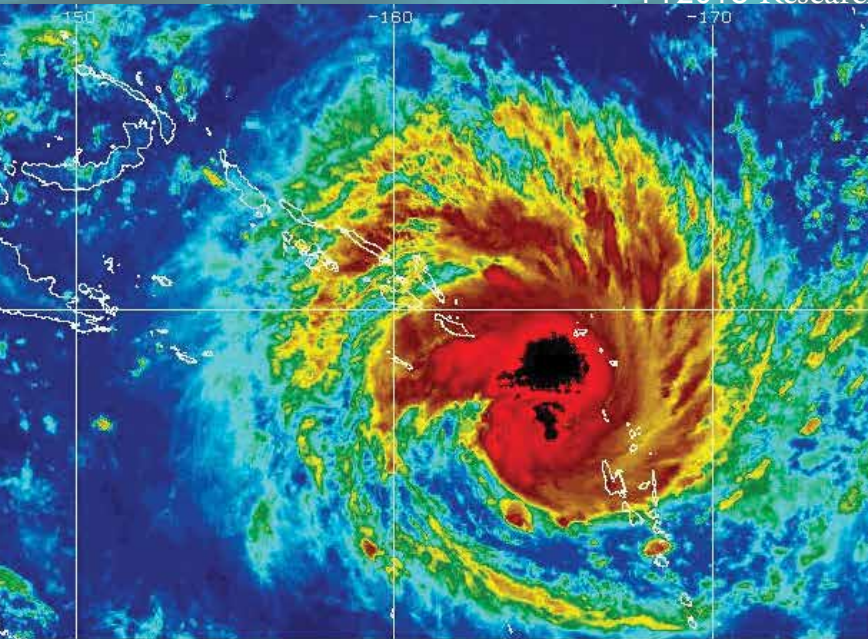
Biology, *"Developing Predictive Approaches to Identify Contaminants of Emerging Concern Adversely Impacting Great Lakes Tributaries"* — United States Fish & Wildlife Service

**Heiko Schoenfuss - \$186,800**

Biology, *"Wastewater estrogen: removal options, fish abundance, and cost"* — Legislative Citizen Commission on Minnesota Resources

**Kannan Sivaprakasam - \$50,537**

Chemistry and Biochemistry, *"S2TOP: Self Sealing Therapy"* — Eden Medical, Inc.



SCSU students Bradley Carlberg and Brianna Lund compare the model precipitation and wind field simulated by COAMPS-TC for Typhoon Morakot (2009) with satellite imagery from the same time period.

# Faculty and Students Research Forecasting Tropical Cyclones

*By Brian Billings*

Numerical models are one of the key tools available to forecasters trying to predict the occurrence of extreme and hazardous weather. These models are constantly being improved by new research, which is particularly important when the focus is on a specific phenomenon. An example of this would be the U.S. Navy's smaller-scale model known as the Coupled Ocean/Atmosphere Mesoscale Prediction System (COAMPS), which has a special version dedicated to forecasting tropical cyclones (COAMPS-TC).

Much of the attention in COAMPS-TC's development has naturally been on the simulated tracks and intensities which would affect fleet traffic over the open ocean. However, the U.S. Navy also frequently takes a leading role in emergency response following international disaster declarations. One of the most significant inland hazards caused by tropical cyclones is flooding due to very heavy rainfall, which is even more pronounced when combined with the enhancement or shadowing caused by flow over complex terrain.

The Central Mountain Range of Taiwan provides an ideal environment for studying these complicated storm-mountain interactions. Last summer, a team of students from St. Cloud State identified a number of recent typhoons that represented a range of landfall locations, storm motions and intensity changes. Rain gauge data from a dense (>400 stations) network covering the island were then obtained from faculty at Central Taiwan University and the students prepared the data for constructing plots of observed simulations.

New COAMPS-TC simulations of these events with a consistent code (the most recent version) were run on a Cray XE6 with over 150,000 processors; located at the U.S. Army Engineering Research and Development Center in Vicksburg, Mississippi. Comparisons of the simulated precipitation amounts with the observed amounts were made both on the basis of their quantitative difference and whether or not they indicated flooding at a particular location. The later approach will eventually be improved by coupling the meteorological model with a hydrologic model. Once the most important systematic biases in COAMPS-TC have been identified, such as track errors or how the model produces precipitations, methods to improve these will be studied using a more idealized modeling framework.

In the summer of 2013, at the start of this research, two students were able to visit the Naval Research Laboratory in Monterey, California. Then again in summer 2014 an additional student was able to visit the Monterey base and exchange information on the group's latest results and the laboratory's current developments in the model code. This research will continue to benefit from close collaboration with the scientists at the Naval Research Laboratory.

This research was presented at the American Meteorological Society's 16th Annual Conference on Mountain Meteorology in August 2014 in San Diego, California.



## FINANCE AND ADMINISTRATION

### Joe Teff and John Frischmann - \$186,286

Facilities Management, "St. Cloud State University Q Parking Lot Pollution Reduction Project" — Stearns County Soil & Water Conservation District



## HERBERGER BUSINESS SCHOOL

### Jim Qingjun Chen - \$366,660

Information Systems, "On-campus Information Technology Internship Program" — Maverick Software Consulting

### Susantha Herath - \$18,612

Information Systems, "TelCom Construction Collaboration" — TelCom Construction, Inc.

### Barry Kirchoff - \$8,647

Small Business Development Center, "Small Business Development Center Program Income"

### Barry Kirchoff - \$211,039

Small Business Development Center, "Small Business Development Center" — Minnesota Department of Employment and Economic Development

### Barry Kirchoff - \$51,350

Small Business Development Center, "Small Business Development Center Legislative Supplemental Funding" — Minnesota Department of Employment and Economic Development

### Steve Mooney - \$28,536

Finance, Insurance and Real Estate, "Minnesota Chair of Real Estate" — St. Cloud State University Foundation

### Adesegun Oyedele - \$6,000

Marketing, "Student Internship for Export Research - Export Market Development & Opportunity Assessment for Suburban in Brazil or Mexico" — Suburban Manufacturing Inc./Initiative Foundation



**Fall 2014** The Visualization Lab offers many opportunities for the campus and St. Cloud community. The lab is a collaborative working environment that can offer students a hands-on experience. The lab is located in the Integrated Science and Engineering Laboratory Facility (ISELF). The lab features six 46-inch high multi-touch computers, three 80-inch computer displays, two 3D projectors and a custom server/graphic workstation.

# Students Assist Local Businesses in Developing Global Marketing Initiatives

By Adesegun Oyedele

In today's world, companies face many challenges in creating and maintaining competitive advantages that aid in a company's sustainability. Internationalization is one growth strategy a company can consider diversify and expand into emerging markets. Companies in Central Minnesota are interested in exploring opportunities and position themselves for long-term success.

Funded in part by the Initiative Foundation, this project helped identify and evaluated global market opportunities for small and midsize companies in Central Minnesota. The goals of this project were to: provide experiential learning opportunities for students; increase export sales and profitability of small and midsize enterprise companies in Central Minnesota; increase the competitiveness of U.S. small and midsize exporting companies in emerging markets; and prepare students for global leadership by working on complex global business projects.

Student interns were hired at BioMatrix International, Midsota Manufacturing, Pellco Machine or Suburban Manufacturing, Inc. and were responsible for collecting the required primary and secondary data to assess the level of market opportunity in the selected foreign market. The intern's final deliverable to the small and midsize enterprise was a global marketing plan. Having people who understand various cultures and the complexities of marketing in foreign countries will create a demand for graduates in newly developed areas of marketing. Therefore, collaborations like this are imperative to developing economic growth and sustainability in Central Minnesota.



BIOMATRIX INTERNATIONAL

## LEARNING RESOURCES SERVICES

### Keith Ewing - \$306,930

Learning Resources Services, "*Central Minnesota Library Exchange*" — Central Minnesota Libraries Exchange

### Tom Steman - \$575

Learning Resources Services, "*Attendance at the American Association for State and Local History Annual Conference*" — Minnesota Historical Society



## SCHOOL OF EDUCATION

### **Kathy Johnson - \$30,000**

Confucius Institute, “*Confucius Classrooms*” – Hanban

### **Kathy Johnson - \$223,500**

Confucius Institute, “*Chinese Curriculum Writing Immersion*” – Hanban

### **Kathy Johnson and Osman Alawiye - \$150,000**

Confucius Institute/School of Education, “*St. Cloud State University Confucius Institute*” – Hanban

### **Ming Chi Own and Glen Palm - \$24,000**

Child and Family Studies, “*Early Childhood Thrive Project*” – Minnesota Initiative Foundation

# St. Cloud State University's Confucius Institute

*By Kathy Johnson*

On August 30, 2013, St. Cloud State University was awarded a Confucius Institute. The Confucius Institute is supported by the Ministry of Education Hanban Office which has a mission for promoting Chinese language and culture around the world. To date, there are 475 Confucius Institutes and 851 Confucius Classrooms in 126 countries. Most Confucius Institutes partner with a higher education institution in China. However, St. Cloud State has a unique partner with Jilin Province Department of Education, which is collaborating with the Minnesota Department of Education.

One focus of the St. Cloud State Confucius Institute is to promote the development and sustainability of Chinese Immersion Programs in the state of Minnesota. Currently, there are seven full-immersion Chinese programs in the state serving more than 2,000 elementary students. The results of the program have demonstrated not only a high level of proficiency in Chinese, but also high academic results on standardized assessments.

This places Minnesota as the leader of such programs in the United States.

The institute promotes the development of Chinese within the local high schools in both Central and Northern Minnesota. In addition, St. Cloud State Confucius Institute has facilitated approval of three new Confucius Classrooms: District 742, District 47 and Lakes International Language Academy in Forest Lake in 2015 and will be adding an additional five classroom in 2016.

A second area of focus for the St. Cloud State Confucius Institute is to promote Chinese language and culture within the MnSCU system. Beginning with St. Cloud State, efforts are being made to strengthen the Chinese language courses in partnership with the Department of Language and Culture. A goal of the institute is to assist in the development of a Chinese minor within the next five years, while also increasing the opportunities for students to study abroad in China.



**Above:** Inside of the Confucius Institute; One focus of the St. Cloud State Confucius Institute is to promote the development and sustainability of Chinese Immersion Programs in the state of Minnesota.



**Left:** Inside of the Confucius Institute; The Confucius Institute is supported by the Ministry of Education Hanban Office which has a mission for promoting Chinese language and culture around the world.

St. Cloud State has numerous champions for China who have greatly assisted with the establishment of partnerships in China. It is the goal of the St. Cloud State Confucius Institute to complement this work and support faculty who: seek to build bridges with China; expand opportunities for students, faculty, administrators and the broader community; and assist in the process of internationalizing teaching and learning across the campus of St. Cloud State.

## SCHOOL OF HEALTH AND HUMAN SERVICES

### **Monica Devers - \$21,401**

School of Health and Human Services, *"Mental Health First Aid"* - Health Force Minnesota

### **Amy Hebert Knopf and Brad Kuhlman - \$197,788**

Community Psychology, Counseling and Family Therapy, *"Rehabilitation Training: Rehabilitation Long-Term Training"* — United States Department of Education

### **Mary Pfohl - \$122,457**

Social Work, *"Bachelor of Social Work Child Welfare Consortium Project 2014-2015"* — University of Minnesota Twin Cities, School of Social Work

### **Glenn Street - \$7,721**

Kinesiology, *"Prosthetic Writing Services"* — Environmentally Managed Systems

## St. Cloud State University Collaborates with St. Paul College for Mental Health Workforce Development

By Leah Meredith



This project, funded through a grant from HealthForce Minnesota, built on the significant mental health workforce development plan approved by the MN Legislature in January 2015. Three mental health initiatives were outlined in the workforce development plan, one of which was to pilot a mental health first aid initiative at SCSU. In partnership with St. Paul College, SCSU led the project with the goal of expanding training capacity throughout the MnSCU system and to employers via customized training opportunities. This project aimed to develop working models for spreading this important mental health education and training initiative across our system.

There is a need for faculty and staff to be better equipped to assist students or their peers who are experiencing mental health challenges. Primary outcomes of this project aimed to address this need through training, implementation planning, and program development. Funding provided the opportunity for faculty members to complete an Instructor Trainer course in adult Mental Health First Aid. Faculty then formed and engaged an Intra-Campus Task Force to reflect on progress and identify best practices and effective processes to best implement Mental Health First Aid within the MnSCU system. This included the creation of a Mental Health First Aid course and Toolkit. Additionally, participants from the community, staff, faculty, and students were recruited to complete the adult Mental Health First Aid course, taught by the newly trained faculty members. The courses are scheduled to begin at both universities in March and April of 2016. Further development of mental health first aid CT/CE offerings are being planned for fall semester 2016. The results of the courses and the evaluations of this project will be presented to the President's Advisory Committee and at the 2016 Academic and Student Affairs Leadership Conference.

Both SCSU and St. Paul College engaged as institutional partners in this project, providing support and in-kind resources in the service of this project. Partnership with the National Alliance on Mental Illness Minnesota (NAMI-MN) also provided resources necessary to obtain the faculty training. Partnerships and collaborations like these were important to the success and sustainability of this project, and provided opportunities for greater impact on the communities served.



## SCHOOL OF PUBLIC AFFAIRS

### Kevin Ahlgren - \$19,908

Geography, Planning and Community Development, *"An Operational Program of Gravity and Global Positioning System Measurements in Bolivia"* — Ohio State University

### Randal Baker - \$60,424

Geography, Planning and Community Development, *"St. Cloud Welcome Center"* — Explore Minnesota Tourism

### King Banaian and Richard MacDonald - \$40,000

School of Public Affairs Research Institute, *"Quarterly Economic and Business Conditions Reports"* — Office of the Minnesota Secretary of State

### Luis Estevez Jimenez - \$5,000

Geography, Planning and Community Development, *"Study to Examine Improved Access to Services in St. Cloud for those Experiencing Homelessness"* — United Way of Central Minnesota

### Richard MacDonald and King Banaian - \$30,000

School of Public Affairs Research Institute, *"CentraCare Economic Impact Study"* — CentraCare Health

### Richard MacDonald and King Banaian - \$8,500

School of Public Affairs Research Institute, *"St. Cloud Area Quarterly Business Report"* — Greater St. Cloud Development Corporation

### Richard MacDonald and King Banaian - \$25,000

School of Public Affairs Research Institute, *"City of Waite Park Land Use Study"* — City of Waite Park

### Richard MacDonald and King Banaian - \$3,920

School of Public Affairs Research Institute, *"Economic Income Studies"* — Teamsters 320

### Richard MacDonald - \$5,000

School of Public Affairs Research Institute, *"St. Cloud State University School of Public Affairs Research Institute"* — Initiative Foundation

### Steven Wagner, Jim Cottrill, Steve Frank, Sandrine A. Zerbib, Monica I. Garcia-Perez, Ann Finan, and John Kulas - \$70,000

Survey Center, *"Annual Minnesota Lottery Survey"* — Minnesota Lottery

### Steven Wagner, Jim Cottrill, Steve Frank, Sandrine A. Zerbib, Monica I. Garcia-Perez, Ann Finan, and John Kulas - \$13,000

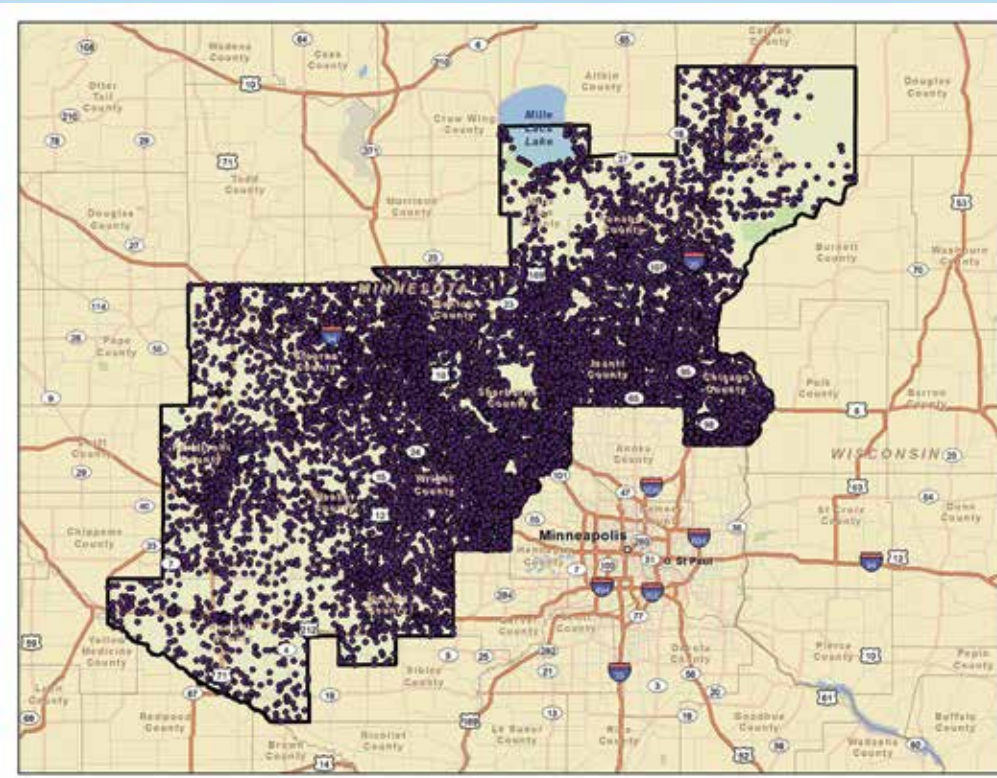
Survey Center, *"Small Business Survey for Minnesota Attorney General"* — Minnesota Attorney General



**Fall 2014** St. Cloud State is one of two Central Minnesota recipients of the 2014 Live United Award presented by United Way of Central Minnesota. This is the first year St. Cloud State has received this award. This award goes to organizations and individuals who truly exemplify the meaning of Live United – Give. Advocate. Volunteer. and go above and beyond for the community. St. Cloud State received the award for its years of partnership with United Way on events and activities throughout the community.

# Using Geographical Information System (GIS) Tools to Describe Economic Growth

By Richard MacDonald



Map showing major areas of growth in Central Minnesota

The School of Public Affairs Research Institute (SOPARI) at St. Cloud State University partners with the Office of the Minnesota Secretary of State in offering a set of six Minnesota Regional Economic and Business Conditions Reports each quarter. These reports examine past, current and projected economic and business conditions in each of Minnesota's six planning areas. With an emphasis on using proprietary business formation data from the Office of the Minnesota Secretary of State, the authors i) develop a regional index of leading economic indicators, ii) present graphical and tabular series on regional new business formation, iii) use GIS tools to examine topical regional business formation issues, iv) analyze regional labor market data and v) produce data tables highlighting local/regional/state/national economic performance for each planning area. The authors of these reports are St. Cloud State economics professors King Banaian (currently serving as dean of the St. Cloud State School of Public Affairs) and Rich MacDonald (currently serving as interim director of the St. Cloud State School of Public Affairs Research Institute) with research assistance provided by St. Cloud State geography professor David Wall, former St. Cloud State graduate student Joe Kucan, and current St.

Cloud State graduate student Katherine Kotschevar. This work is supported by a \$49,999 contract between St. Cloud State and the Office of the Minnesota Secretary of State. Current reports can be found on the Secretary of State website, <http://www.sos.state.mn.us/index.aspx?page=1837> and an official archive is maintained in the St. Cloud State Repository at <http://repository.stcloudstate.edu/qebcr/>.

Applying geographical information system (GIS) tools to the large data set allows the research team to provide visual evidence of business formation in regions throughout the state of Minnesota. For example, a map that appeared in the Central Minnesota Quarterly Economic and Business Conditions Report in May 2014 showed the clustering of newly formed businesses in the Central Minnesota planning area since 2000. Using the dots on this map as a proxy for regional economic performance, one can see the major areas of growth in Wright/Sherburne/Isanti/Chisago counties, in the St. Cloud metro, and along the major roadways in the planning area.



## STUDENT LIFE AND DEVELOPMENT

### **Corie Beckermann - \$39,260**

Student Health Services, "*Student Insurance Advocacy Position*" — United Healthcare Student Resources

### **Jennifer Johnson and Jen Sell Matzke - \$2,000**

UChoose/Student Life and Development, "*Fetal Alcohol Syndrome 2015 Public Awareness*" — Minnesota Organization on Fetal Alcohol Syndrome

### **Jen Sell Matzke - \$95,000**

Student Life and Development, "*St. Cloud State University Recovery Community*" — St. Cloud State University Foundation/Otto Bremer Foundation

### **Jen Sell Matzke, Jennifer Johnson, and Jeffrey Allerson - \$2,500**

Student Life and Development/UChoose/Student Health Services, "*Generation Rx 2014 Collegiate Grant Program*" — Cardinal Health Foundation

### **David McCandless - \$3,000**

Campus Involvement, "*Lemonade Art Fair 2015*" — Central Minnesota Arts Board

### **Dennis Mergen - \$1,400**

Lindgren Child Care Center, "*Outlast Outdoor Block Project*" — Child Care Aware of Minnesota

### **Kimberly Ohmann - \$500**

Student Health Services, "*North Central College Health Association - Student Grant Proposal*" — North Central College Health Association

### **Ron Seibring - \$2,240**

Campus Rec, "*Coca Cola/KAB Recycling Bin Grant*" — The Coca-Cola Company

## UNIVERSITY COMMUNICATIONS

### **Jo McMullen-Boyer - \$11,000**

KVSC, "*KVSC Support Program*" — St. Cloud State University Foundation

### **Jo McMullen-Boyer - \$98,621**

KVSC, "*KVSC Corporation for Public Broadcasting Community Service Grant*" — Corporation for Public Broadcasting

## UNIVERSITY COLLABORATIVE PROJECTS

### **Nancy Bacharach and Teresa Heck - \$14,849**

Teacher Development/Kinesiology, "*Academy for Co-Teaching and Collaboration*"

### **Tirthankar Ghosh, Susantha Herath, and Mark Schmidt - \$150,000**

Computer Science and Information Technology/Information Systems, "*GenCyber: Summer Camp*" — National Science Foundation

### **Tirthankar Ghosh, Susantha Herath, and Mark Schmidt - \$222,805**

Computer Science and Information Technology/Information Systems, "*CyberCorps: Scholarship for Service*" — National Science Foundation

### **Tirthankar Ghosh, Susantha Herath, and Mark Schmidt - \$774,789**

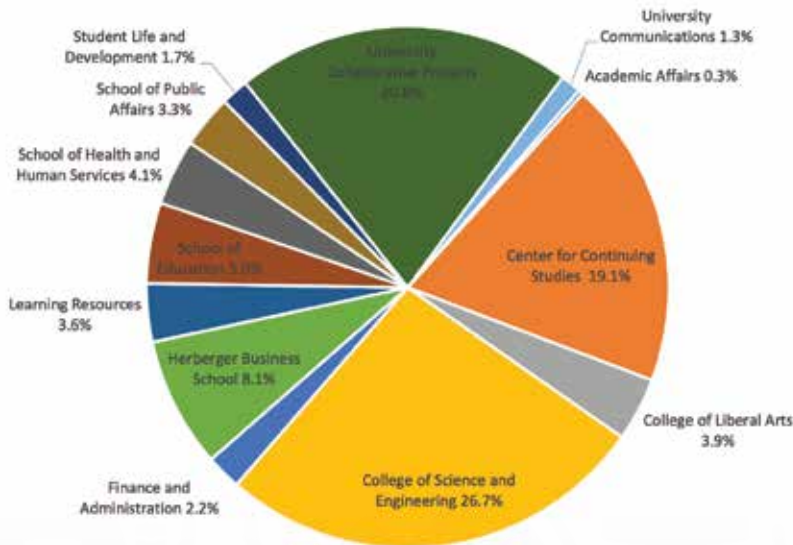
Computer Science and Information Technology/Information Systems, "*CyberCorps: Participant Support*" — National Science Foundation

### **Susantha Herath, Jayantha Herath, and Md Hossain - \$614,028**

Information Systems/Computer Science and Information Technology/Electrical and Computer Engineering, "*S-STEM: Computer and Engineering Scholarship Program*" — National Science Foundation

# External Grants and Contracts SUMMARY

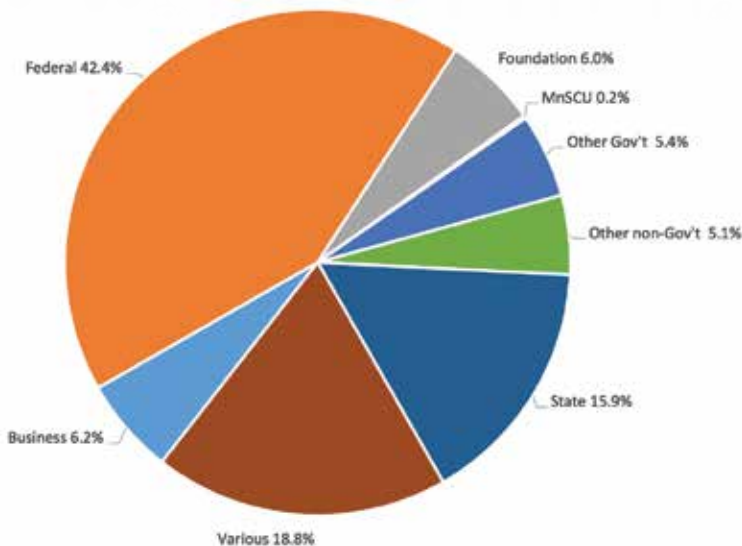
AWARDED FY15: **\$8,548,041**  
JULY 1, 2014 – JUNE 30, 2015



## Funding by College/School/Unit

Academic Affairs	\$26,277	0.3%
Center for Continuing Studies	\$1,630,896	19.1%
College of Liberal Arts	\$336,241	3.9%
College of Science and Engineering	\$2,280,381	26.7%
Finance and Administration	\$186,286	2.2%
Herberger Business School	\$690,844	8.1%
Learning Resources	\$307,505	3.6%
School of Education	\$427,500	5.0%
School of Health and Human Services	\$349,367	4.1%
School of Public Affairs	\$280,752	3.3%
Student Life and Development	\$145,900	1.7%
University Collaborative Projects	\$1,776,471	20.8%
University Communications	\$109,621	1.3%

**Grand Total** **\$8,548,041**



## Funding by Source

Business	\$528,828	6.2%
Federal	\$3,627,956	42.4%
Foundation	\$512,574	6.0%
MnSCU	\$15,425	0.2%
Other Gov't	\$458,348	5.4%
Other non-Gov't	\$432,971	5.1%
State	\$1,362,695	15.9%
Various	\$1,609,243	18.8%

**Grand Total** **\$8,548,041**



# Minnesota Undergraduate SCHOLARS



Minnesota Undergraduate Scholars is a consortium of Minnesota State Colleges and Universities (MnSCU) institutions that supports the research, scholarly works and creative activity of undergraduates by providing avenues for funding, presentation resources and opportunities for them to present their work. We are 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 currently supported by the Minnesota Undergraduate Scholars consortium

- The Minnesota Undergraduate Scholars Posters at St. Paul
- The Minnesota Undergraduate Scholars Conference



Presenter Sarah Hopfner speaks with the legislator from her home district.



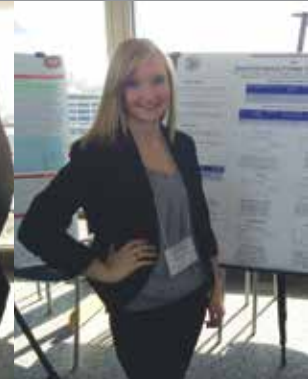
Presenter Shruti Jagannathan met with the legislator from her home district.



St. Cloud State faculty, staff, and students in St. Paul.



Jessica Owens with attendee



Presenter Tiffany Smith with her research poster.

## POSTERS AT ST. PAUL

On Feb. 26, 2015, Minnesota Undergraduate Scholars, a consortium of MnSCU institutions, hosted Posters at St. Paul, a multi-disciplinary poster presentation session at the 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 travelled to the State 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 event provided students the opportunity to share their undergraduate research, scholarly or creative activity with legislators and other leaders in our state government and system administration. This signature MnSCU event draws attention to the exciting work our students have completed, and has a significant impact with state leaders who are able to interact directly with the students and see the importance of undergraduate research.

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

## LIST OF PRESENTERS:

### Sarah Hopfner

Biochemistry, *"Design and Synthesis of a Novel Indanone Chemotherapeutic Agent"*

Faculty Sponsor: Mark Mechelke

### Tiffany Smith

Communication Sciences and Disorders, *"Computerized Application Training vs Speech-Language Therapy in Chronic Aphasia"*

Faculty Sponsor: Grama Rangamani

### Jessica Owens

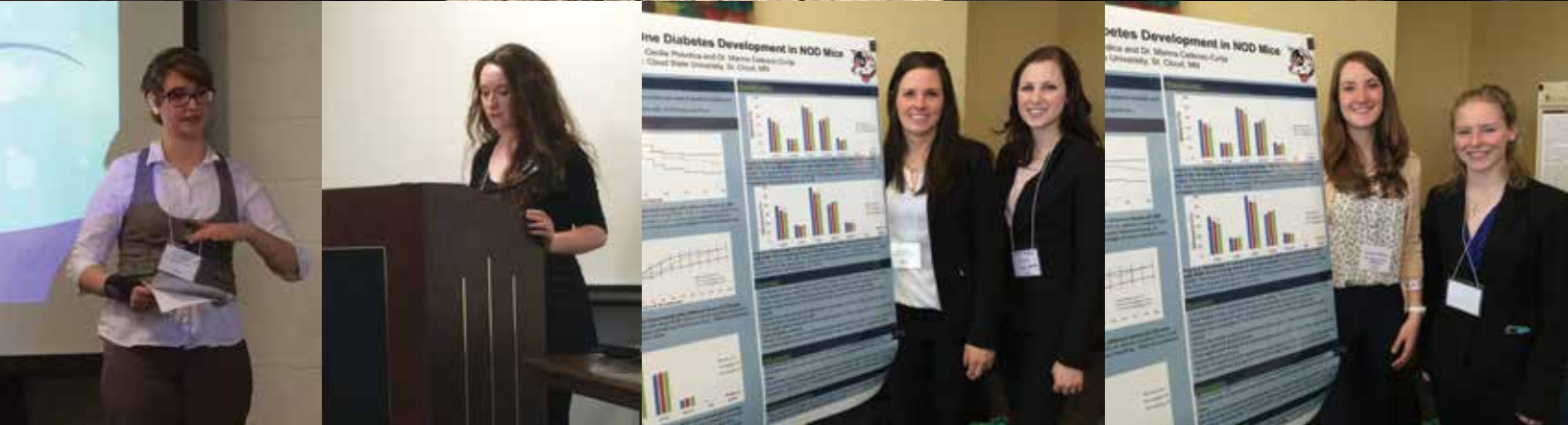
Communication Sciences and Disorders, *"Discourse Therapy in Right Hemisphere Brain Damage: A Case Study"*

Faculty Sponsor: Grama Rangamani

### Shruti Jagannathan

Biomedical Science, *"Analyzing the Pharmacological Effects of Picrotoxin in Regenerating and Intact Dugesia Tigrina (Planaria)"*

Faculty Sponsor: Latha Ramakrishnan



Amanda Goedeke presents her paper at the MnSCU conference.

Samantha Koshowany-Wilken presents her paper at the MnSCU conference.

Melissa Floren and Cecilie Pravdica with their poster.

Alicen Gorecki and Michelle Moran with their poster.

## MNSCU Undergraduate Scholars CONFERENCE

### Conference of Undergraduate Scholarly and Creative Activity

The fourth annual MnSCU Undergraduate Scholars Conference was held on April 13, 2015. The event's purpose is to provide undergraduate students from MnSCU colleges or universities the opportunity to present their scholarly activity, increase intercampus engagement for both faculty and students and to highlight undergraduate excellence. Presentation formats included poster or paper presentations, artistic performances or gallery exhibits.

### LIST OF PRESENTERS:

#### **Samantha Koshowany-Wilken**

History, English, "*St. Marina: A Lesson in Spiritual Endurance*" (Paper)

Faculty Sponsors: Maureen O'Brien, Glenn Davis

#### **Amanda Goedeke**

History, English, "*Saint Margaret, Queen of Scotland, and the Benedictine Rule*" (Paper)

Faculty Sponsors: Maureen O'Brien, Glenn Davis

#### **Melissa Floren, Alicen Gorecki, Michelle Moran, and Cecilie Pravdica**

Biology, "*The Effects of Persistent Organic Pollutant PCB-153 on the Autoimmune Diabetes of NOD Mice*" (Poster)

Faculty Sponsor: Marina Cetkovic-Cvrlje



# Student Research COLLOQUIUM



The 18th annual Student Research Colloquium took place April 21, 2015. Patterned after professional conferences, the Student Research Colloquium engages students in activities that enhance their success and learning.

Throughout the day, approximately 400 student presenters showcased their work with a poster, paper or creative works presentation. Nearly 100 faculty members were engaged as sponsors, collaborating with students on their research, scholarship and creative activities. Student participants represented a variety of disciplines across 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.

## 2015 PAPER PRESENTATION AWARDS

### **Sarah Hopfner - \$300 Best Paper Award**

*"Design and Synthesis of a Novel Indanone Chemotherapeutic Agent"*

Faculty Sponsor: Mark Mechelke

### **Paul Keyworth - \$300 Best Paper Award**

*"An Acoustic Phonetic Study on Lexical Stress Contrasts in Arabic and Mandarin-Accented English"*

Faculty Sponsor: Ettien Koffi

### **Jordan Kuiper - \$300 Best Paper Award**

*"National Scare? Diabetes and Organic Pollutants: A Persistent Problem"*

Faculty Sponsor: Marina Cetkovic-Cvrlje

### **Megan Cox - \$150 Runner-up**

Project: *"Contaminants of Emerging Concern: Does Effluent Temperature Modulate Estrogenic Effects on Larval Behavior?"*

Faculty Sponsors: Heiko Schoenfuss & Jessica Ward

### **Sinduja Thinamary - \$150 Runner-up**

*"The effects of Bisphenol A (BPA), persistent organic pollutant, on the incidence of type 1 diabetes in two experimental mouse models"*

Faculty Sponsor: Marina Cetkovic-Cvrlje

### **Amanda Goedeke - Honorable Mention**

*"Saint Margaret, Queen of Scotland, and the Benedictine Rule"*

Faculty Sponsors: Maureen O'Brien & Glenn Davis

### **Alexandria Marrone - Honorable Mention**

*"Rhetorical Analysis of the Social and Discursive Constructs that Perpetuate the Marginalization of English Language Learners"*

Faculty Sponsor: Carol Mohrbacher



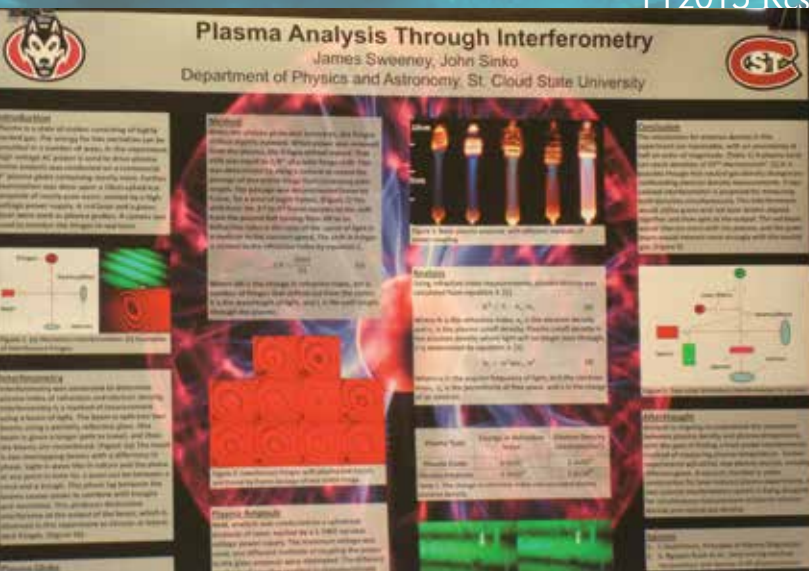
Scott Meyer  
- \$300 Best Poster  
Award, with  
faculty sponsor  
Sarah Petitto.

Sarah Hopfner  
-\$300 Best  
Paper Award.



Paul Keyworth  
-\$300 Best  
Paper Award.

Jordan Kuiper  
-\$300 Best  
Paper Award.



*“Plasma Analysis Through Interferometry”* by **James Sweeney**. Faculty sponsor-John Sinko.

Awards ceremony with remarks being given by Interim Provost Richard Green.

## 2015 POSTER PRESENTATION AWARDS

### **Scott Meyer - \$300 Best Poster Award**

*“Development of a Quantum Mechanics Lab to Assist and Assess Student Learning and Understanding”*

Faculty Sponsor: Sarah Petitto

### **Waidath Bio Sawe - \$150 Runner-up**

*“Investigation of the role of SMURF on PGC1”*

Faculty Sponsor: Brian Olson

### **Maria Bloch - \$150 Runner-up**

*“Variation of the Center of Gravity of Palatal Sibilant across Vowels”*

Faculty Sponsor: Ettien Koffi

### **Melissa Floren & Cecilie Pravdica - \$150 Runner-up**

*“Effects of PCB-153 Exposure on Leukocyte Populations in NOD Mice”*

Faculty Sponsor: Marina Cetkovic-Cvrlje

### **Alicen Gorecki; Matthew Miller; & Eryn Ebinger - \$150 Runner-up**

*“The Effect of PCB-153 on the Incidence of Type 1 Diabetes in an NOD Mouse Model”*

Faculty Sponsor: Marina Cetkovic-Cvrlje

### **Sahur Hussein - \$150 Runner-up**

*“Prevalence of Pulmonary Tuberculosis among the Somali population in Minnesota”*

Faculty Sponsors: Mikhail Blinnikov and Hector Giovanni Antunez

### **James Sweeney - \$150 Runner-up**

*“Plasma Temperature Analysis through Spectroscopy and Interferometry”*

Faculty Sponsor: John Sinko



**Spring 2015** St. Cloud State University's efforts to engage with the community has led to the Carnegie Community Engagement Classification for 2015. St. Cloud State is one of 10 Minnesota schools and one of three Minnesota State Colleges and Universities to receive this classification. Currently, 361 campuses in the United States have received the Community Engagement Classification.



# 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, 70 students were awarded more than \$28,000 to fund their research and scholarship.

## **Mitch Severson, Walter Pelowski, and Jacob Koch - \$723**

Electrical Engineering, "*Transversely Excited Atmospheric-pressure CO2 Pulsed Gas LASER*"

## **Scott Notch, William Muench, and David Corgard - \$542**

Electrical Engineering; Electrical Engineering; Physics - Electro Optics, "*Optical Pressure Detection of a Gaseous Medium*"

## **Maria Gaffney - \$680**

Physics / Electro-Optics, "*Optical Analysis of Smart Materials for Solar Energy Conversion*"

## **Mary Halbur - \$175**

MS in Applied Behavior Analysis, "*Behavior Analysis Across Species*"

## **Leoma Therese Van Dort - \$362**

Social Responsibility (M.S.), "*The Political Economy of Neoliberalism: A Sociological Examination of Changing Ubranscapes in Sri Lanka*"

## **John Phillip Wade - \$100**

Chemistry - ACS Approved, "*Characterization and Toxicity of Alanine-Based Polymeric Nanoparticles in D tigrina Planarian Flatworms*"

## **Rene Martin - \$675**

Ecology and Field Biology, "*Evolution of jaws and ecological niche specialization in deep-sea lanternfish*"

## **Justin Thorson and Sean Koepp - \$360**

Biomedical Sciences; Biochemistry ACS, "*Development of nano anti-icing coating materials*"

## **James Sweeney - \$713**

Physics, "*Laser Plasma Temperature Analysis*"

## **Nadeem Qandeel, Tamim Alkhonaini, and Ubong Udoessien - \$130**

Electrical Engineering, "*Wireless Power Transmitter*"

## **Rami Azer, Song Xue, and Taylor Speri - \$488**

Electrical Engineering, "*House Energy Monitoring and Control System*"

## **Anthony Kunkel, Rita Schwieters, and Joseph Harter - \$315**

Physics, "*Degenerate Four-Wave Mixing for Material Characterization*"

## **Lindsay M. Knapp - \$334**

Master's Applied Behavior Analysis, "*An Examination of the Overjustification Effect Using a Token Economy Reinforcement for On-task Behavior of Preschool Children During Circle Time*"

## **Lindsay M. Knapp - \$336**

Master's in Applied Behavior Analysis, "*The Effects of Different Variables on Preference for Choice-Making Opportunities & An Evaluation of the Overjustification Effect in Preschool Children Based on Task Difficulty*"

## **Teresa Watson and Kelly Baumen - \$273**

Rehabilitation Counseling, "*St Cloud State University Disability Awareness Event*"

## **Matthew Kruger and Bridget Johannes - \$342**

Environmental Science, "*Lawn Maintenance Survey of Homeowners in the St. Cloud, MN Metro Area*"

## **Sinduja Thinamany - \$665**

Cellular and Molecular Biology, "*Effect of Persistent Organic Pollutant Bisphenol A on Incidence of Type 1 Diabetes in Streptozotocin - induced (MLDSTZ) C57BL/6 Mice and Femal NOD Mouse Models*"

## **Megan Wisbar - \$122**

Teaching English to Speakers of Other Languages (TESOL), "*A Qualitative Examination of the Teacher's Perspective of Challenges, Resources, and Strategies for Serving English Language Learners at an Early Childhood Education Center*"

## **Mary Halbur - \$300**

Applied Behavior Analysis, "*An Evaluation of Children's Preferences for Types of Attention Across Different Adults*"

## **Emily Hutter - \$151**

Applied Behavior Analysis, "*Pilot Study: Experimental Analysis of Food Choices*"

## **Jennifer Steen, Samera De Silva, and Michelle Moran - \$440**

Biomedical Science, Biology, Biomedical Science, "*Characterization of Histologic Lesions in the Pancreatic Islets of Mice Exposed to Bysphenil A (BPA) During Type 1 Diabetes Development*"

## **Cecilie Pravdica, Melissa Floren, and Tessa Hirdler - \$600**

Biomedical Science, "*Characterization of Immune Cells Involved in Development of Type 1 Diabetes in Mice Exposed to Bysphenol A*"

**Michelle Moran, Alesha McPhail, Gayani Gamage, and Alicen Gorecki - \$720**

Biomedical Sciences, Biology, *"Incidence and Severity of Disease in Bysphenil A (BPA) - Treated Experimental Mouse Model of Type 1 Diabetes"*

**Nyimas K. Arief - \$85**

Applied Behavior Analysis, *"Establishing Techniques to Overcome Medical Non-compliance in an Adult with Developmental Disabilities"*

**Kylie Bruner, Taylor Schmit, and Huong Welch - \$395**

Biomedical Sciences, *"Effects of Bisphenol A (BPA) on the Function of Immune T-cells in Experimental Type 1 Diabetes Mouse Model"*

**Sumedha Aryal - \$222**

Biochemistry; Biology, *"Diffusion dynamics of drugs in hydrogel"*

**Shiyao Huang - \$171**

Biochemistry, *"Synthesis and characterization of modified poly(vinyl alcohol)"*

**Hwakyun Mok - \$318**

TESL (Teaching English as a Second Language), *"Transforming identity from first language (L1) to second language (L2), while studying abroad in the U.S."*

**Waidath Bio-Sawe - \$172**

Biochemistry, *"Investigation of the role of SMURF1 in regulating PGC1 $\alpha$ "*

**Hanna Zerfas - \$570**

Communication Sciences and Disorder, *"Improving Services of Hispanic Children with Hearing Loss"*

**Ryan Wolfe - \$899**

BioMedical Science, *"Gene knockout Salmonella mutants"*

**Cindy L. Nagel - \$793**

CRM - Archaeology, *"Geophysical Exploration of a Meskawaki-related Mortuary Site (13IW257)"*

**Jordan Kuiper - \$730**

Cell and Molecular Biology, M.S., *"Does PCB-153, an organic persistent pollutant, affect development of autoimmune type 1 diabetes (T1D) in NOD mice?"*

**Anthony Kunkel and Rita Schwieters - \$445**

Physics; Physics, *"Degenerative Four-Wave Mixing"*

**Christopher D. Clendene - \$732**

Higher Education Administration Master's Program, *"Student Practices, Habits, and Behaviors Leading to Success"*

**Jenna Leonhard and Jacob Bottelberghe - \$631**

Medical Laboratory Science / Biomedical Science, *"Identification of the Human Protein Smurf1 as Novel Therapeutic Target for the treatment of Parkinson's and/or Huntington's Disease"*

**Kumiko Highley - \$902**

Graduate Biology: Ecology and Natural Resources, *"Genetic Component for Mate Choice Copying in Domestic vs Wild Guppies (Poecilia Reticulata) and Sailfin Mollies (Poecilia latiminna)"*

**Richard Preusser - \$418**

ACS Biochemistry, *"Synthesis and characterization of liquid crystal polymers"*

**Tiffany Smith - \$443**

Communication Sciences and Disorders, *"Computerized Application Training vs Speech-Language Therapy in Chronic Aphasia"*

**Jessica Owens - \$444**

Communication Sciences and Disorders, *"Discourse Therapy in Right Hemisphere Brain Damage: A Case Study"*

**Scott Notch, Kyle Hinkemeyer, and Mohammed Baqaar - \$409**

Electrical Engineering, *"Robot Swarm for Managing Inventory"*

**Charles Grangroth, Kweeni Iduoku, Tod Moren, Courtney Peine, and Blake Torfin - \$481**

Mechanical Engineering, *"SAE Aero Design Competition"*

**Samantha Preusser - \$300**

Master of Social Work, *"Journey to Heal"*

**Xiao Han - \$525**

TESL (Teach English as Second Language), *"Verbal and Gestural Recasts in L2 Development"*

**Paula Delgado Cuzzi - \$730**

Marriage and Family Therapy, *"Reciprocal Violence and Injuries in Couples in Arequipa, Peru"*

**Mary Halbur - \$199**

MS in Applied Behavior Analysis, *"An Evaluation of the Reinforcing Efficacy of General Praise and Behavior-Specific Praise in Typically Developing Preschool Children"*

**Joseph Dempsey and NeAngela Scott - \$235**

College Counseling and Student Development, *"Improving Student Experience and Student Success"*

**Cassie Linn - \$270**

BS Chemistry (ACS Approved Biochemistry), *"Functional Polymer and Supramolecular Material from Hemiporphyrizine Derivatives"*



**Matthew Yang, Alice Sui, Maija Jedynak, Duha Vang, Sj Zhang, Michael Pederson, Anna Pant, and Michael Chu - \$375**

Laboratory Science, Biotechnology, Biomedical Science, Biomedical/MLS Science, Biochemistry, Laboratory Science, *"Isolation of Antimicrobial Compounds from Bacteria"*

**Katharine Casey Kipping - \$668**

Biological Sciences (M.S.), *"Identification of Salmonella enterica transcriptional and physiological changes induced by desiccation and thermal stress in an inert dry matrix"*

**Seth Hennagir - \$860**

Chemistry, *"Charge Carrier Mobility Determination of Rubrene Derivatives"*

**Michael Grinsteinner - \$170**

ACS - Chemistry, *"Synthesis of 1, 2, 7, 8-tetracyanocarbazoles to create a novel ring system"*

**Hollie A. Lincoln - \$232**

Cultural Resource Management Archaeology MS, *"Lithic Resources, Workshops, and Tool Production in Belize"*

**Nyimas K. Arief - \$95**

Applied Behavior Analysis, *"A Comparison of the Reinforcing Effectiveness of Different Types of Attention on Skill Acquisition in Typically Developing Preschool Children"*

**Damon Nelson - \$80**

Geography, *"Veteran Homebuying Behavior as it points to home - work community"*

**Trista Linn - \$175**

MS in Applied Behavior Analysis, *"Behavior Analysis Across Basic and Applied Research"*

**Star L Lipe - \$224**

Applied Behavior Analysis, *"An Evaluation of the Efficacy of Antecedent Choice for Decreasing Food Selectivity"*

**Alexis Waldin - \$336**

MS in Applied Behavior Analysis, *"Poster A: A Function -Based Approach to the Treatment of Audible Diurnal Bruxism & Poster B: Transfer of Stimulus Control of Toileting Behavior with Somali Male"*

**Emily Hutter - \$90**

MS in Applied Behavior Analysis, *"An Evaluation of the Reinforcing Efficacy of General Praise and Behavior - Specific Praise in Typically Developing Preschool Children"*

**Michael Ray Wilson - \$723**

MS Geography: Tourism Planning and Development Concentration, *"The State of WWOOF Tourism in the Upper Midwest"*

**Elizabeth Harri-Dennis - \$300**

Applied Behavior Analysis, *"Sign Tracking in the Madagascar Hissing Cockroach"*

**Pierre Callies - \$85**

Master of Geographic Information System, *"The Cross Sectional Economic Impacts of Four-Lane Highway Interchanges"*

**Sarah Anderson - \$260**

Communication Sciences and Disorders, *"The Effect of "Baby Sign" on Early Language Development"*

**Karuna Paudel - \$362**

Masters of Science Geography: Geographical Information Science, *"Habitat Fragmentation of Caribou during Pliocene-Holocene Transition"*

**Paul Richard Keyworth - \$290**

MS Teaching English as a Second Language / Ed. D Higher Education Administration, *"An Acoustic Phonetic Study on the Production Accuracy of Lexical Stress Contrasts in Arabic and Mandarin-Accented English"*

**Rachael Klahr and Laura Olean - \$160**

I/O Psychology, *"Comparing Stress Across Individuals: A Psychophysical Measure of Stress"*

**Karuna Paudel - \$85**

Master of Science in Geography: Geographical Information Science, *"An Assessment of Mechanism for Payment to ecosystem services in Phewa Watershed, Nepal"*

**Elizabeth Sharkey - \$360**

Cultural Resources Management Masters Program, *"Twin Lakes Archaeology Site"*

**Kayla Bradshaw - \$750**

Cultural Resources Management Archaeology, *"A Survey and Analysis of Wyoming Residents' Knowledge of Cultural Resource Legislation"*

**Jennifer Kraft - \$415**

CRM Archaeology Master of Science, *"SDI-11, 521 Faunal Remains Radiocarbon Dating"*

## New Researcher AWARDS

New researcher awards encourage newly-hired faculty and staff to pursue research or scholarly activities by providing seed monies early in their career with St. Cloud State University.

### Matthew Davis - \$3,992

Biology, *"Evolutionary relationships of the flagfin fishes (Aulopiformes: Aulopoidei) and the description of a new species of flagfin from deep-water reefs of the Galapagos Islands"*

### Kannan Sivaprakasam and John Sinko - \$7,999

Chemistry & Biochemistry and Physics & Astronomy,  
*"Development of Smart Materials for Solar Energy Conversion"*

### Benjamin Witts - \$3,247

Community Psychology, Counseling, & Family Therapy, *"A Method for Analyzing Precursor Responding to Assess Lying-as-Risky-Betting in Poker"*

## University Researcher FUNDS

University researcher funding provides a multi-faceted support system to help faculty and staff develop and hone the skills needed to be successful in seeking at least mid-level funding from external sources for research and scholarly or creative activities.

### Rebecca Krystyniak - \$5,000

Chemistry & Biochemistry, *"Utilizing a Learning Assistant Model to Recruit, Prepare and Support STEM Teachers"*

### Latha Ramakrishnan - \$4,990

Chemistry & Biochemistry, *"Advancing Scholarship of a Learning Community of Aspiring Chemists through Scientific Discovery"*

## Faculty Improvement GRANTS

Funding for faculty improvement grants is provided through the IFO/MnSCU Master Agreement

## SHORT-TERM Faculty Improvement Grants

The primary purpose of a short-term faculty improvement grant is educational in focus. The workshop or course should: prepare the faculty member for current or new teaching assignments and/or align with the faculty member's professional development plan; be interactive, hands-on training focused on a single topic and demand active participation; and a non-credit workshop or training program up to 14 days in length.

### JoAnn Asquith - \$3,000

Marketing, *"Study Tour of the People's Republic of China: The Opportunities and Challenges Facing China"*

### Martin Breaker - \$2,913

Management, *"Barbri MN Bar Review Course"*

### Dennis Bristow - \$1,388

Marketing, *"Sales Educator's Academy"*

### Catharine Bushman - \$1,080

Music, *"Teaching Guitar Workshop"*

### Theresa Estrem - \$2,014

Communication Sciences & Disorders, *"Enforex Super Intensive Spanish Course"*

### Betsy Glade - \$629

History, *"Digital Mitford Workshop"*



**Rajesh Gulati - \$1,367**Marketing, *"Sales Educators' Academy"***Garth Harris - \$1,380**Marketing, *"Sales Educators' Academy"***Kurt Helgeson - \$1,380**Environmental & Technological Studies, *"2015 Professors' Workshop - Teaching: Materials, Structure, Pavements"***Elena Kurinski - \$1,732**Foreign Languages & Literature, *"Let's Get Real: Unlearning Racism"***Annette Lee - \$2,088**Physics & Astronomy, *"Adobe Premier Training Course"***Haeinn Lee - \$1,901**Art, *"Cooper U's Visual Interface Design Training Course"***Ming Chien Lo - \$353**Economics, *"American Economic Association Continuing Education Program - Time Series Econometrics"***Nimantha Manamperi - \$2,357**Economics, *"Techniques and Tools for Short Term Macroeconomic Forecasting"***Nimantha Manamperi - \$1,907**Economics, *"2014 E-Views Winter School"***Maria Mikolchak - \$3,000**Foreign Languages & Literature, *"Achtung Ausnahme! Attention Film Shooting!"***Jodel Page - \$1,633**Communication Sciences & Disorders, *"Speech Telepractice Training"***Sarah Smits-Bandstra - \$1,634**Communication Sciences & Disorders, *"Speech Telepractice Training"***David Titus - \$1,364**Marketing, *"Sales Educators' Academy"***Mitchell Weinzel - \$1,725**Criminal Justice, *"The Subject Object Interview"***Peiyi Zhao - \$313**Mathematics & Statistics, *"AMS Departments Chairs Workshop"***Yongli Zhao - \$1,917**Mechanical & Manufacturing Engineering, *"IDEAL - Institute for the Development of Excellence in Assessment Leadership"*

## RESEARCH

### Faculty Improvement Grants

Research grant awards support research, creative achievement or the scholarly pursuit of knowledge using recognized procedures in the faculty member's discipline.

**Michael Dvorak and Ryan Cornelis - \$3,775**Chemistry & Biochemistry and St. Cloud State Undergraduate, *"Towards a Better Understanding of the Intermolecular Bonding of Carbon Dioxide"***Monica Garcia-Perez - \$4,170**Economics, *"Converging to American: The Immigrant Healthy Effect on Children of Immigrants"***Peter Happel Christian - \$10,000**Art, *"Sword of the Sun"***Justin Quinn - \$4,234**Art, *"Things That Mean Other Things: Art Exhibition in St Cloud, Minnesota"***Marco Restani - \$9,676**Biology, *"Natal Dispersal of Ospreys: Engaging Citizen Scientists"***Younsook Anna Yeo - \$4,170**Social Work, *"Inequitable Healthcare Service Use Indicators among Elderly Immigrants after Welfare Reform"***Hung-Chih Yu - \$4,723**Geography & Planning, *"A case study of leisure constraints among Somalian at St. Cloud area"*

# The Sword of the Sun

*By Peter Happel Christian*

Peter Happel Christian, associate professor of art, is a recipient of the Artist Initiative Grant for Photography from the Minnesota State Arts Board. Happel Christian, along with Phillip Andrew Lewis, received a collaborative Ansel Adams Fellowship award for Creative Photography along with Phillip Andrew Lewis and for their book "Sword of the Sun". Wherein, Peter developed a one person art exhibit showcasing his talents along with the photograph that has become the cover of the book itself.

Excerpt from The Sword of the Sun:

"The work in this book is loosely related to the story told in The Sword of the Sun by Italo Calvino. In the story, an elderly man, Mr. Palomar, swims in a nameless sea at sunset. As he drifts he contemplates the fleeting, spangled shape of the sun casting across the water. He imagines that the sun points its rays at him alone. Mr. Palomar eventually realizes that every person in the world must think this same thing at some point in their life. He goes on to wonder which came first: the sun or eyes to see it.

From the edge of Calvino's imaginary, nameless sea, I made the work that shapes this book, Sword of the Sun. In a never-ending effort to make sense of the landscapes around me and the tools of photography, I photographed actions and events in the spaces around my home: my yard, the nameless pond nearby, and a variety of points in between. In these photographs, individual and shared



Book cover created By Peter Happel Christian

histories of place collide, and splice together a version of where I live. As time skids forward < dragging history, impressions and the things of these photographs I have come to realize that the sword of the sun is the sharpest edge in the world."



**Spring 2015** St. Cloud State students launched RadioX KVEX 97.5, St. Cloud's newest FM station Jan. 15, 2015. The student-run '90s alternative music station teaches students skills they'll need to work in commercial radio. KVSC 88.1 FM, the university-licensed public, independent station, teaches skills used at community radio stations.



## Saigo ENDOWMENT

Dr. Roy H. Saigo was president of St. Cloud State University from July 2000 until his retirement in June 2007. Drs. Roy and Barbara Saigo established the Saigo Endowment for Faculty and Staff Excellence Fund in 2007 out of a desire to help support faculty and staff in their ongoing professional development. The purpose of the fund is to encourage and assist faculty and staff with scholarly activities including professional presentations, performances and exhibitions, research and creative endeavors and publications.



Drs. Roy and  
Barbara Saigo

**Gareth John - \$250**

Geography & Planning, *"Landscapes of Triumphalism and Reconciliation: Materially Re-inscribing Indian-Settler relations since the Dakota-US War of 1862"*

**Godfrey Leung - \$300**

Art, *"The Acoustemology of the Closet"*

**Nimantha Manamperi - \$126.44**

Economics, *"Do BRC Countries Respond to Global Financial Stress in their Monetary Policy Settings? A Time Varying Policy Analysis"*

## Hellervik PRIZE

The Hellervik Prize is St. Cloud State University's premier award encouraging research or scholarly activity which advances knowledge on issues of importance to students, college/school, university and society. Research is broadly defined as creative achievement and/or the scholarly pursuit of knowledge using recognized procedures in the principal investigator's discipline or area of study.

**Katherine Pound - \$10,000**

Hydrologic, *"Stream Transport of Cobbles & Boulders – How Fast and How Far?"*



- Develop broad knowledge and understanding of the human experience and physical and natural worlds
- Pursue expertise in a discipline
- Integrate and apply knowledge and experience across disciplines in both broad and specialized settings
- Seek new knowledge through varied pathways of discovery
- Identify gaps in knowledge and seek out new information

- Develop broad knowledge and understanding of the human experience and physical and natural worlds
- Pursue expertise in a discipline
- Integrate and apply knowledge and experience across disciplines in both broad and specialized settings
- Seek new knowledge through varied pathways of discovery
- Identify gaps in knowledge and seek out new information





*"The mission of St. Cloud State University is 'to prepare graduates for life, work and citizenship in the 21st century.' To keep this promise to students, faculty and staff have built and maintain a healthy, multi-cultural learning community where students can develop global and cultural understanding. St. Cloud State and the community of St. Cloud are living laboratories in which students put classroom learning into practice."*

A handwritten signature in black ink that reads "Earl H. Potter III" followed by a stylized flourish.

Earl H. Potter III

President, St. Cloud State University



OFFICE OF RESEARCH  
AND SPONSORED PROGRAMS  
ST. CLOUD STATE UNIVERSITY

St. Cloud State University, along with the Office of Research and Sponsored Programs, believes in supporting faculty, staff and students in their pursuit of research, scholarship and professional development. If you would like to make a contribution toward these efforts, please send your tax-deductible contribution to:

**ST. CLOUD STATE UNIVERSITY FOUNDATION**  
**OFFICE OF RESEARCH AND SPONSORED PROGRAMS**

720 4th Avenue South AS210 • St. Cloud, MN 56301-4498



St. Cloud State University does not discriminate on the basis of race, sex, color, creed, religion, age, national origin, disability, marital status, status with regards to public assistance, sexual orientation, gender identity, gender expression, or status as a U.S. veteran. The Title IX coordinator at SCSU is Dr. Ellyn Bartges. For additional information, contact the Office for Institutional Equity & Access, (320) 308-5123, Admin. Services Bldg. Rm 102.



# THINK. DO. MAKE A *difference.*

At St. Cloud State University, students apply their knowledge in ways that connect them with the real world. Our students graduate with the skills to discover and apply new solutions to challenges and opportunities through risk-taking, innovation, research and imagination.

See how St. Cloud State makes a difference at [stcloudstate.edu/distinctions](http://stcloudstate.edu/distinctions).



ST. CLOUD STATE  
UNIVERSITY

EDUCATION FOR LIFE.

A MEMBER OF THE MINNESOTA STATE COLLEGES AND UNIVERSITIES SYSTEM