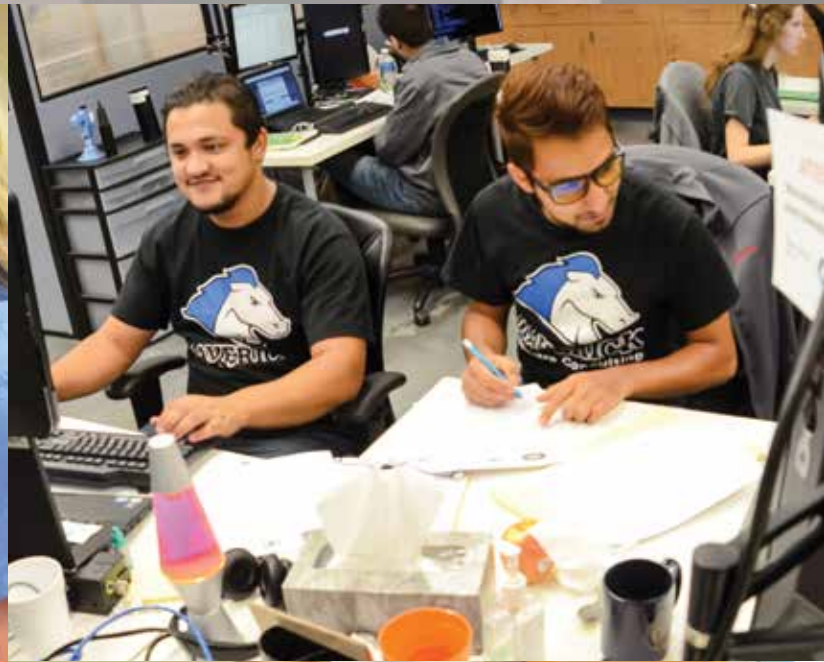


FY2016 | Research Profile

Inspire. Engage. Innovate.



OFFICE OF RESEARCH
AND SPONSORED PROGRAMS
ST. CLOUD STATE UNIVERSITY



Dr. Latha Ramakrishnan

Inspire. Engage. Innovate.

St. Cloud State University's 2022 strategic action plan calls to building a 21st century engaged university. Essentially this call to action endorses the essential role of stewardship of place that St. Cloud State plays in the community. Innovation is vital for the advancement of a community. St. Cloud State, through its rich and long history of fostering research, scholarly and creative work, serves as a leader who engages the community in innovation to bring advancement for students, faculty, staff, and community members.

Engaging students in research, scholarly and creative works is a commitment that we make to our students, a commitment of student success, Our Husky Compact. The extent and reach of this commitment is growing every year with the year 2016 being no exception. We engaged 519 students in 294 projects, with over 100 students receiving grants and over 300 students participating in external grant funded experiential learning opportunities.

Professional advancement of faculty and staff is essential to foster innovation. The number of faculty and staff seeking advancement and the myriad opportunities for advancement, especially brought about by business/industry partners, regional foundations, and state agencies has grown over the years. In 2016, 134 faculty sponsored student research, 139 faculty and staff were awarded extramural funding while 33 faculty received internal funding, and we collaborated with over 50 business/industry and regional partners, and over 10 state agencies.

By engaging students, campus, and community in new knowledge creation, we are paving our ways to new discoveries and innovation that brings advancement to the community. We present our students the opportunities to exemplify Our Husky Compact and prepare them to be workforce ready. For our millennial community of scholars, the excitement of being engaged in discovery and creation is bound to be transcending that we would be successful in preparing our 21st century citizens.

Through this research profile, I wish to engage your attention with the wide range of research activities pursued on our campus by faculty and staff in collaboration with student researchers.

I hope the featured articles inspire you to continue your innovation!

Sincerely,

Dr. Latha Ramakrishnan

Interim Associate Provost for Research &
Dean of Graduate Studies



OFFICE OF RESEARCH
AND SPONSORED PROGRAMS
ST. CLOUD STATE UNIVERSITY

St. Cloud State and Maverick partnership recognize five years of success

Growth in the Maverick on-campus IT Internship Program at St. Cloud State

by Kristin Krone



In its fifth year, the Maverick program has undergone multiple waves of growth, including expansion to the majors recruited from, additional clients and a new office. These developments have led to a very strong program and partnership between St. Cloud State University and Maverick Software Consulting.

What started out as a pilot program with 10 information technology students and one client, Symantec, has grown to 26 students and three clients. In addition, Maverick has expanded the job roles in the office and majors recruited from. The company now employs a marketing student to assist with Maverick's marketing initiatives and a management student to assist with recruiting and interviewing. Along with headcount growth comes the need for additional space. In the spring of 2016, the Maverick office made a big move over to the new Integrated Science and Engineering Laboratory Facility (ISELF) building and nearly doubled its footprint. The new space offers a team collaboration area, two conference rooms and plenty of desk space for visitors and staffing growth.

Maverick prides itself on recruiting the top students from computer science and engineering, information systems and information assurance to work on software development and testing projects for Veritas's NetBackup Quality Engineering Teams (previously Symantec Corporation). Maverick interns work 20 hours per week during fall and spring semesters, full time during the summer, for a duration of at least one and a half years. Students earn a competitive wage and are able to earn three internship credits that count toward their degree.

The program is not your typical internship. Student interns work in a corporate environment and are assigned to teams led by Veritas project managers. Projects and priorities rotate quarterly, giving students an opportunity to work on a variety of product features during the course of their internship. Without leaving campus, students are able to apply their classroom learning to real-world software development and testing projects. Graduates from the Maverick program have several years of industry experience and possess strong technical, interpersonal and communication skills, making them highly qualified and sought after candidates by full-time employers.

In addition to the staffing management and daily office operations, Maverick also provides training, mentoring, resume guidance and job placement assistance to prepare students for the workforce. To date, more than 75 interns have gone through the Maverick program at St. Cloud State, with clients extending full time offers to more than 50 percent of their interns, and 100 percent job placement for all other students.

"I am extremely excited about the future of this program," said Kristin Krone, manager of the Maverick Program at St. Cloud State since its inception. "The growth that we've experienced, along with the support from the University and our clients has provided numerous opportunities for the students."

In addition to growth at St. Cloud State, Maverick Software Consulting continues its company growth nationwide. The company recently celebrated 10 years of business and is expanding operations to the East Coast. For more information, visit www.MaverickSoftware.com.

Minnesota State Lottery Survey 2016

by James B. Cottrill

For more than 20 years the St. Cloud State University Survey Research Center has conducted survey research for the Minnesota State Lottery, contributing to one of the longest and most comprehensive studies of gambling behavior in the world. Don Feeney, Research and Planning Director at the Minnesota State Lottery, has referred to us as “the gold standard” in survey research. In addition to providing Lottery officials with important data on the gambling behavior of Minnesotans – data that informs the policy decisions made by the agency – this \$56,000 research project also provides students with important research experience and valuable employment opportunities (about \$30,000 of the project funds are paid to student workers).

Our research team is large, interdisciplinary, diverse, and provides students with hands-on experience conducting research with faculty mentors.

Sadly, this year's Lottery Survey was the final one for our dear friend, mentor, and founder of the SCSU Survey, Stephen Frank, who passed away in June. In memory of his many contributions to the university and community, we will continue the work of the Survey and dedicate ourselves to maintaining the high standard he set for us, both in terms of research excellence and adherence to the highest ethical standards.

Project Summary

The 2016 Lottery Study, as with our previous surveys for the organization, provides important information about the gambling behaviors of Minnesotans. The questionnaire consisted of 42 substantive questions (in addition to several screening and demographic questions) about the type and frequency of the respondent's gambling as well as attitudes and beliefs about how the proceeds from the Minnesota Lottery are, and should be, used. These data can help state policy makers make informed decisions about the types of games offered, the allocation of Lottery proceeds and the appropriate level of support for treatment programs offered to those suffering from gambling addiction.

The data was gathered from a random sample of Minnesota adults contacted by phone (about 40 percent land line and 60 percent cell phone), with 1826 adults completing the survey. The cooperation rate for the survey was 38 percent for land lines and 31 percent for wireless, and the margin of error for the study was plus or minus 2.8 percent at the 95 percent confidence level.

Data was collected by student callers working at our 19 calling stations Monday through Thursday from 4:30-9:30 p.m., Saturday from 9:30 a.m.-2 p.m., and Sunday from 4-9 p.m. Students received training in the use of our CATI (Computer-Assisted Telephone

2016 Lottery Survey Research Faculty Co-Directors

Dr. James Cottrill
Dr. Ann Finan
Dr. Stephen Frank
Dr. Monica Garcia-Perez
Dr. Amanda Hemmesch-Breaker
Dr. Steven Wagner
Dr. Sandrine Zerbib

2016 Lottery Survey Research Student Directors

Karen Stay
Megan Kalk
Josefina Abdullah
Cedric Filiyaro
Michael Grewatz
Landry Kabore
Irina Nishat

Interview) software and used the software to enter the data collected from each interview. In addition to the training and research experience, students earned \$10/hour for their data collection work. All students were required to sign an Ethics Sheet pledging to follow the ethical guidelines for survey research established by the American Association of Public Opinion Researchers (AAPOR), which commits us to confidentiality and the protection of respondents' privacy rights.



SCSU Survey
Dr. Stephen Frank, founder of the SCSU Survey, providing instruction and training to our student callers. (Photo by Anna Kurth).

Connection to Our Husky Compact

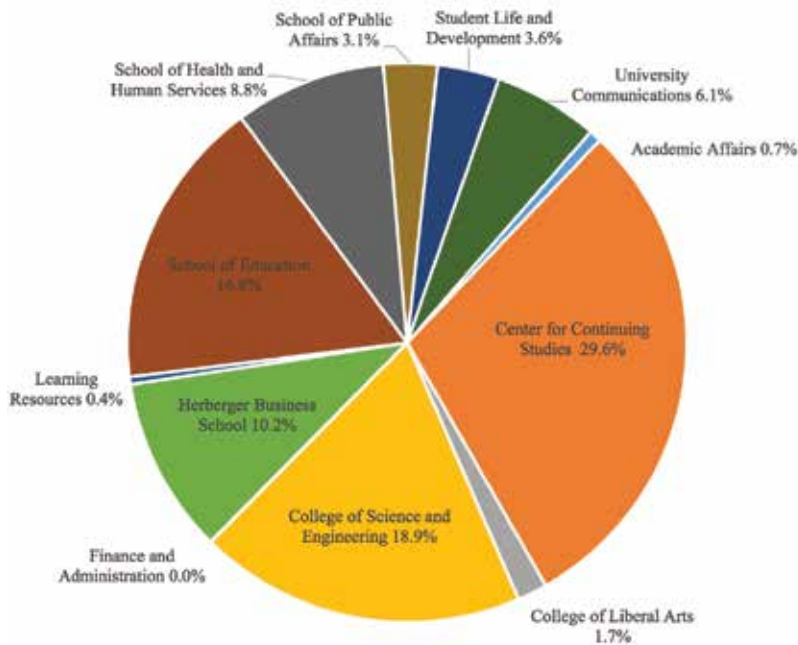
Student involvement in the Minnesota Lottery Study reflects each of the areas identified by Our Husky Compact as important learning outcomes for St. Cloud State graduates:

- **Think Creatively and Critically:** Enlisting respondent participation requires quick, creative thinking and the ability to adapt in real time to different, and sometimes difficult, personalities.
- **Seek and Apply Knowledge:** The collection of statewide opinion data helps policy makers, who apply the data we have collected in their policy making.
- **Communicate Effectively:** The collection of public opinion data requires clear and effective communication. The development and improvement of students' communication skills is an integral part of our work.
- **Integrate Existing and Evolving Technologies:** Students are trained in the use of CATI software and develop expertise in its application by using the program to collect data.
- **Engage as a Member of a Diverse and Multicultural World:** Our research team is highly diverse, with student members from throughout the world, from many different backgrounds, who develop their leadership potential through effective teamwork.
- **Act with Personal Integrity and Civic Responsibility:** Student directors and callers all sign an ethics sheet pledging to adhere to the ethical guidelines established by AAPOR for public opinion researchers.

In all of these ways, our students exemplify the values of the Husky Compact and enhance their classroom learning through hands-on, experiential learning as part of our research team.

External Grants and Contracts AWARDED

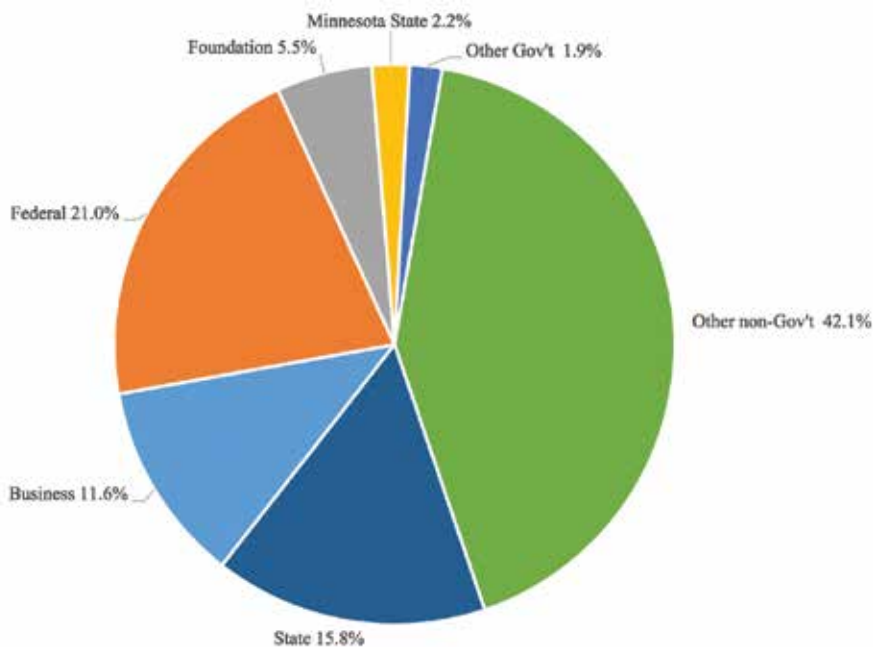
Scientific investigation, scholarly activity and creative achievement are vital to St. Cloud State University's mission of offering accessible, high quality education. In fact, research at the university is as much about effective teaching as it is about contributing to knowledge. Through research activities,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



Funding by College/School/Unit

Academic Affairs	\$49,844	0.7%
Center for Continuing Studies	\$2,055,973	29.6%
College of Liberal Arts	\$119,533	1.7%
College of Science and Engineering	\$1,311,746	18.9%
Finance and Administration	\$2,200	0.0%
Herberger Business School	\$708,328	10.2%
Learning Resources	\$30,000	0.4%
School of Education	\$1,167,613	16.8%
School of Health and Human Services	\$607,108	8.8%
School of Public Affairs	\$215,668	3.1%
Student Life and Development	\$248,791	3.6%
University Communications	\$420,261	6.1%

Grand Total **\$6,937,065**



Funding by Source

Business	\$806,410	11.6%
Federal	\$1,455,690	21.0%
Foundation	\$383,484	5.5%
Minnesota State	\$151,200	2.2%
Other Gov't	\$129,019	1.9%
Other non-Gov't	\$2,917,063	42.1%
State	\$1,094,200	15.8%

Grand Total **\$6,937,065**

ACADEMIC AFFAIRS

Susan Jordahl - \$16,028

Senior to Sophomore, *"Construction Zone: Expanding the Bridge to College"* – Office of Higher Education

Randy Kolb - \$416

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

Mike Sharp and Adam Klepetar - \$10,000

Advising Center/University College, *"Academic Coaching Model with a Career Focus"* – Minnesota State Colleges and Universities

Dan Wildeson - \$10,650

Center for Holocaust and Genocide Education, *"Civic Leadership Project"* – Central Minnesota Community Foundation

CENTER FOR CONTINUING STUDIES

Larry Nadeau and Gail Ruhland - \$25,000

Center for Continuing Studies, *"Teen Crash Avoidance"* – State Farm Automobile Insurance Company

Elizabeth Valencia-Borgert - \$4,033

Center for Continuing Studies, *"Piñata Project: Latina Entrepreneurial Program"* – Women's Fund of Central Minnesota

Tammy Anhalt-Warner - \$3,200

Center for Continuing Studies, *"Central Minnesota Society for Human Resource Management Fund"* – Central Minnesota Community Foundation

Tammy Anhalt-Warner and Gail Ruhland - \$2,500

Center for Continuing Studies, *"Minnesota Job Skills Partnership: Grede METAL (Manufacturing Engineering Technical Advanced Learning) Training Program"* – Grede

Tammy Anhalt-Warner and Gail Ruhland - \$335,000

Center for Continuing Studies, *"Minnesota Job Skills Partnership: Grede METAL (Manufacturing Engineering Technical Advanced Learning) Training Program"* – Minnesota Department of Employment and Economic Development

Timothy Dickinson - \$906,527

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

Larry Nadeau - \$779,713

Minnesota Highway Safety and Research Center, *"Driver Improvement Program"*

Central Minnesota Society for Human Resource Management supports professional development

by Angie Olson



The Central Minnesota Society of Human Resource Management (CMSHRM) has awarded St. Cloud State University \$3,200. This grant will be used to support the professional development of eight human resource professionals in the Central Minnesota area by subsidizing their registration fees for the SHRM certification preparation course. This exam certifies that human resource professionals are competent in both technical knowledge and situational judgement. This intensive course includes 36 hours of expert instruction.

The Center for Continuing Studies Corporate Education and Outreach, under the guidance of Tammy Anhalt-Warner, will facilitate the SHRM-Certified Professionals (CP)/Senior Certified Professionals (SCP) preparation course at St. Cloud State. The SHRM CP/SCP prep course will be offered twice during the 2016-17 academic year.

The first four registrants for these courses will receive grant dollars to support their registration. The attainment of these certifications is an important step in developing an HR professional's advancement and also supports local area businesses by enriching the skill and knowledge base of human resource professionals in Central Minnesota. SHRM-CP/SCP are also globally recognized standards in the business world.

CMSHRM was established in 1973 and has about 150 members who represent 95 companies.

This donation from CMSHRM supports St. Cloud State's Husky Compact by creating an opportunity for current or future human resource professionals to seek and apply knowledge and communicate effectively. The SHRM CP/SCP prep course encourages informed decision making, relationship building, and proficiency in teamwork. The aforementioned qualities are essential to achieving certification and advancing professionally in the human resource profession.

COLLEGE OF LIBERAL ARTS

Robert C. Johnson - \$74,968

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

Robert C. Johnson - \$5,000

Access and Opportunity Program, *"St. Cloud State University Pipeline Programs: Mentoring Girls for Science, Technology, Engineering and Math"* – Capital One/St. Cloud State University Foundation

Kyoko Kishimoto - \$5,409

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

Rob Mann - \$5,816

Sociology and Anthropology, *"Fortifying St. Cloud: Searching for Fort Holes, A Dakota Conflict Era Settler's Fort"* – Minnesota Historical Society

Rob Mann - \$9,882

Sociology and Anthropology, *"Digging Fort Fair Haven: Archaeological Excavations at the Site of an 1862 Settlers' Fort"* – Minnesota Historical Society

Daren Protolipac, John Kulas, and Jody Illies - \$475

Psychology, *"Upward Consulting"*

Ilya Simakov - \$17,983

Theatre and Film Studies, *"Keep It Quiet, a short film and an outreach program"* – CentraCare Health

Finding Fort Fair Haven

by Rob Mann

In August 1862 long-simmering tensions between the Dakota and European-American settlers, traders, soldiers and government officials boiled over into open warfare. For nearly two months Dakota warriors, ostensibly under the leadership of renowned chief Little Crow, attacked European-American settlements and military installations. In response, settlers across southwest and central Minnesota either fled the region or attempted to fortify their settlements. One such fortification was built at Fair Haven in southeast Stearns County. Now referred to as Fort Fair Haven, historical sources indicate that the fort consisted of a wooden stockade constructed around a log hotel, which was constructed in 1857. The fort was likely demolished within a year or two of its construction.

In 2015 the St. Cloud State Department of Anthropology initiated a project to locate the archaeological remains of Fort Fair Haven. The project was funded in part by a \$9,867 Minnesota Historical and Heritage grant from the Minnesota Historical Society (MHS). In the field, we used a combination of remote sensing and limited archaeological testing to locate cultural remains that appeared to be associated with the 1862 fortification.

During the summer of 2016, we returned to site of Fort Fair Haven to conduct large-scale excavations at the site. Once again the project was partially funded by a \$9,882 Minnesota Historical and Heritage grant from the MHS. The 2016 investigations were conducted in conjunction with the St. Cloud State anthropology department's summer archaeological field school.



Left: St. Cloud State students excavate at the Fort Fair Haven site.



Left: St. Cloud State students excavate at the Fort Fair Haven site. The pink flags mark the locations of possible wooden posts associated with the fort.

Above: Dr. Rob Mann, associate professor of anthropology and Jacob Dupre, cultural resources management graduate student, excavate shovel test pits at the Fort Fair Haven site. The pink flags indicate a linear anomaly detected by the gradiometer.

Based on the findings from 2015, St. Cloud State undergraduate students excavated 15.5 one-meter-by-one-meter square units. Our excavations exposed the physical remains of more than 20 possible wooden posts thought to represent the fort at Fair Haven. The artifacts and other cultural materials recovered from the site are being studied and analyzed in the St. Cloud State Archaeology Laboratory by St. Cloud State undergraduate students. Cultural resources management graduate student Jacob Dupre will use all the data from the investigations at Fort Fair Haven as the basis for his master's thesis.

Film project seeks to encourage discussion about suicide

By Ilya Simakov

In an effort to help end stigmatism surrounding suicide, Assistant Professor of Film Studies Ilya Simakov is leading “Keep It Quiet,” a suicide awareness and prevention project.

“Keep It Simple” consists of a short narrative fiction film and an outreach program. The title refers both to the stigma surrounding suicide and to the dangerous imperative depressed and suicidal people feel to keep their struggles out of sight.

The project seeks to give power to individuals who have depression, power to communities; and power to those who mistakenly believe that suicide is “what happens to other people.”

Due to the intimacy of the close up and the power to create naturalistic, yet emotionally immersive, representations of reality, films can create a more significant shift in perspective than other popular art forms and offer insight into the senses and motivations of characters whose actions may feel alien in life.

Unfortunately too often suicide has been used as a mere plot point or for shock value. Some popular films do well at identifying situations leading to suicides, but at best they only gesture toward the “feeling of what happens” from the point of view of the suicidal person. “Keep It Quiet” aims to fill this void.

The production will employ professional filmmakers from New York and Minneapolis in key creative roles. Some of the crew positions will be filled by former and current St. Cloud State University film students. This project will provide them with an opportunity to train under working artists, gain skills that professional productions will recognize and expand their network.

We will screen the film in free showings in at least five Minnesota towns — including St. Cloud, Monticello, and Melrose — between May and October of 2017. We will increase our exhibition efforts during the National Suicide Prevention Week.

As a professional film shot locally, “Keep It Quiet” is uniquely positioned to attract local audiences and provide an emotional catalyst for increasing suicide awareness.

“Keep It Quiet” will feature a learning component at every screening, allowing audiences to channel emotions elicited by the film into specific actions toward breaking the taboo and raising suicide awareness in private and public spaces. Post-screening panels will be hosted by volunteer mental health professionals and suicide survivors and aim to further community dialogue on depression and suicide. Educational materials provided at the screenings and on the film’s website will inform the audiences about local and national mental health resources and ways to further educate themselves.

We believe that hosting an event that combines entertainment, art, education and open discussions may have a deeper impact on suicide awareness and prevention than more traditional outreach efforts such as lectures, workshops or printed material.

The “Keep It Quiet” project strongly reflects St. Cloud State’s mission as it will provide current and former filmmaking students with a rare opportunity for professional active learning on an art project with a crucial community outreach component and has strong potential to represent the region and its artists at top level national and international film festivals.

COLLEGE OF SCIENCE AND ENGINEERING

Adel Ali - \$10,495

College of Science and Engineering, *"Integrated Science Engineering Laboratory Facility"*

Adel Ali and Kaelyn Friese - \$43,936

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

Jorge Arriagada - \$26,320

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

Ryan Fink - \$19,646

Biology, *"Field Validation of Matrix-Assisted Laser Desorption Ionization Time of Flight Mass Spectrometry for the Identification of Dairy Microorganisms Critical for Safety and Quality"* – University of Minnesota

Tirthankar Ghosh - \$5,000

Computer Science and Information Technology, *"Minnesota Cyber Careers Consortium: A Statewide Collaboration for Cyber Security Education, Training, and Research"* – Initiative Foundation

Tirthankar Ghosh and Mark Schmidt - \$99,992

Computer Science and Information Technology/Information Systems, *"GenCyber Summer Camps"* – National Security Agency and National Science Foundation

Mark Gill - \$37,000

College of Science and Engineering, *"Visualization Lab"* – Pine Technical & Community College

Kristin Gulrud - \$2,000

Biology, *"Microbiology Training Workshop"* – Microbiologics, Inc.

Kevin Haglin - \$4,002

Physics and Astronomy, *"Participation with Social Science Research Council on Space-Related Projects"* – Space Science Research Corporation

Anthony Hansen - \$10,000

Atmospheric and Hydrologic Sciences, *"Investigation of Deep Water Bedforms"* – Exxon Mobil Upstream Research Company

Melissa Hanzsek-Brill, Kaelyn Friese, and Steve Hornstein - \$5,000

Mathematics and Statistics/College of Science and Engineering/Teacher Development, *"Tech Savvy"* – American Association of University of Women

Kurt Helgeson - \$223,122

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

Kurt Helgeson and Charles Hentges - \$80,500

Environmental and Technological Studies, *"TEAM Industries Mobile Lab Program"* – TEAM Industries

Kurt Helgeson and Charles Hentges - \$20,000

Environmental and Technological Studies, *"Trade and Industrial Career & Technical Education Frameworks"* – Minnesota Department of Education

Matthew Julius - \$5,000

Biology, *"Production of High-Value Food Products from Algal Fermentation Using Whey Co-Products"* – University of Minnesota Subaward (Midwest Dairy Association Funds)

Matthew Julius - \$33,910

Biology, *"Mass Culture of Lake Superior Eukaryotic Microbes for the Great Ships"* – Northeast Midwest Institute

Matthew Julius, Mark Gill, and William Gorcica - \$35,000

Biology, *"SimRiver Educational Software"* – Japanese Society for the Promotion of Science

Matthew Julius - \$1,550

Biology, *"Phytoplankton Lab"*

Matthew Julius - \$15,000

Biology, *"Morphological and Systematic Investigation of the Origin of the Diatom Raphe within the Subclass Eumotiophycidae"* – National Science Foundation/Japanese Society for the Promotion of Science

Matthew Julius - \$5,000

Biology, *"Nigeria Visiting Expert Program"* – The World Academy of Sciences for Developing Countries

Christopher Kvaal - \$18,768

Biology, *"Lignocellulosic Biomass as Yeast Carbon Source for Biofuel Production"* – SarTec Corporation

Eric Little - \$5,294

Mechanical and Manufacturing Engineering, *"PCB Equipment"* – PCB Piezotronics

Mark Mechelke - \$815

Chemistry and Physics, *"Lab Manual Royalties"*

Amos Olagunju - \$2,000

Computer Science and Information Technology, *“Advance IT – New Directions”* – Advance IT Center for Excellence

Latha Ramakrishnan - \$23,765

Chemistry and Physics, *“Chemistry Royalties”*

David Robinson - \$19,479

Mathematics and Statistics, *“Analysis of Data from Stearns County Jail”* – Stearns County

Heiko Schoenfuss and Jessica Ward - \$490,467

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

Heiko Schoenfuss - \$44,222

Biology, *“Excotoxicogenomics Based Water Quality Monitoring in Minnesota”* – Minnesota Pollution Control Agency

Timothy Vogt - \$5,000

Electrical and Computer Engineering, *“Semaphore Collaboration”* – Semaphore Scientific Inc.

Yi Zheng and Adel Ali - \$19,463

Electrical and Computer Engineering, *“Soft Tissue Characterization”* – Born-Fuke Medical Equipment Co., Ltd

Tech Savvy

by Melissa Hanzsek-Brill, Ph.D.

Tech Savvy, an initiative through the American Association of University Women (AAUW), is a daylong conference aimed at attracting young women in grades six through nine to STEM fields, and to inform their families about STEM fields and careers. Dr. Melissa Hanzsek-Brill in partnership with the St. Cloud branch of AAUW applied for and received a grant of \$5,000 through the national office of AAUW. Twenty-two Tech Savvy conferences were funded across the nation.

The award to St. Cloud State University was the first and only funded in the state of Minnesota. In addition to the AAUW grant, local industry partners Blattner Energy, Microbiologics, Robert Half Technologies, Bremer Bank, Eich Motor Company, Crever Construction, Sunray Printing Solutions, AMG Promotions and Palmer Printing all contributed to the event.

The first annual Tech Savvy conference was held in April 2016. Sixty-seven girls, 20 parents, 27 presenters/panelists and 78 volunteers helped to make the event a success. The St. Cloud AAUW branch organized the day along with students and staff from St. Cloud State University with the College of St. Benedict assisting. Students majoring in STEM fields at St. Cloud State and the College of St. Benedict spent the day interacting with attendees via escorting them to workshops, assisting in workshops and participating in informal discussions during lunch and during formal panel discussions.

The young women attending this year's Tech Savvy participated in workshops, panels and presentations focused on solar energy, 3-D printing, solving a mystery through science, thinking like a hacker, virtual reality and more developed and taught by faculty from St. Cloud State, St. John's University/College of St. Benedict, Girl Scouts of Minnesota and Wisconsin Lakes and Pines and several of the industry partners.



The parents and other significant adults participated in panels and workshops about college preparation and careers for women interested in STEM fields. These sessions taught topics like how best to support young women in STEM, what high school classes will best prepare them for STEM majors and careers and how to seek financial aid as a female in STEM.

Due to the success of the event, AAUW National has funded this collaborative for 2016-17, and the second annual Tech Savvy was held at St. Cloud State University on Jan. 28, 2017.

The Tech Savvy project is connected to student success, achievement and the Husky Compact in that it provides St. Cloud State faculty and students the opportunity to collaborate with the greater St. Cloud community. This interaction embraces most of the Husky Compact values.

Field validation of a new method for screening milk for bacteria contamination

by Ryan C. Fink



Dr. Ryan C. Fink of the Department of Biology at St. Cloud State University, together with Dr. Sandra Godden of the Veterinary Diagnostic Laboratory (VDL) and Dr. Tonya Schoenfuss of the Department of Food Science and Nutrition, both at the University of Minnesota, secured \$73,000 from the University of Minnesota for a study on the “Field Validation of Matrix-Assisted Laser Desorption Ionization Time of Flight Mass Spectrometry (MALDI-ToF) for the Identification of Dairy Microorganisms Critical for Safety and Quality”.

Minnesota produces about 9 billion pounds of milk yearly making it the sixth largest dairy state, with about 4,000 producers and 469,000 dairy cows. In Minnesota there are several regional, national and international dairy food processors such as Land O’ Lakes Inc., Davisco Foods International Inc., Kemps and Associated Milk Producers. The dairy production and processing industry generates \$5.6 billion per year and the total economic impact is about \$11.5 billion supporting more than 38,000 jobs. The VDL must continue to provide its support if we are to maintain a strong, vibrant and profitable dairy industry.

Mastitis, or infection of the udder, has the highest economic impact on dairy farms among the infectious diseases causing losses estimated at \$200 per cow per year. Furthermore, the majority of antibiotic administered to dairy cattle is related to mastitis prevention and treatment. With an ever-increasing emergence of antibiotic resistant bacteria due to drugs overuse, identifying organisms causing mastitis is of paramount importance. In fact, this would facilitate the development of effective control programs and science-based guidelines on when and what antimicrobial treatment would be effective at a minimal dosage.

Also, bacterial contaminants in dairy foods are particularly concerning to milk processors for food quality (reduced shelf life and/or cheese quality) and safety reasons. Therefore, the ability to screen milk and dairy products for contamination without the use of long and labor intensive culturing techniques would be highly beneficial to the dairy products industry.

Recently a new method of identification, MALDI-ToF, or matrix-assisted laser desorption ionization time-of-flight analysis, has been developed. In this method, bacteria are hit with a laser beam that shatters them to small protein fragments. Those fragments are shot through an evacuated detection tube. The time these fragments take to go across this tube (“time of flight” or “ToF”) is specific for the mass to charge ratio of the peptide. This generates a profile of the fragments produced by laser shattering which is highly specific for the bacterium. In a process similar to the forensic matching of fingerprints and individual, the profile is compared to a database that allows for identification of bacterial genus and species. This procedure is faster, less expensive and potentially more universal than biochemical or sequence-based identification of cultured isolates.

Although many human diagnostic laboratories already use this method, MALDI-ToF has not been validated for the identification of animal-related bacteria. In our project, we are collecting 2,500 individual bacterial from dairy farms and products. These samples undergo testing using both MALDI-ToF and a ‘gold standard’ technique based on the analysis of a specific sequence (16S rDNA) present and highly specific for each genus of bacteria. The results from the two analytical methods will be compared and the level of identification accuracy of the MALDI-ToF determined. Once the method is validated, it will be deployed as a standard diagnostic tool by the Veterinary Diagnostic Laboratory at the University of Minnesota and future diagnosticians and veterinaries will be trained in its use.

The students working on this project are part of the validation of a new methodology that has the potential to have a great impact on the economy of the state. The differences between the already accepted method (16S sequencing) and MALDI-ToF push them to think critically about what their results are telling them. They need to seek information and understand the chemical and physical concepts behind these techniques. More importantly, students are exposed to the issue of antibiotic, bacteria contamination of food, and the importance of the dairy industry for the state: milk does not grow on the shelf of the grocery store.

FINANCE AND ADMINISTRATION

Tammy McGee - \$2,200

Finance and Administration, *"Community Reinvestment Fund: Change Leadership Workshop"* – Minnesota State Colleges and Universities

HERBERGER BUSINESS SCHOOL

Jim Qingjun Chen - \$428,798

Information Systems, *"Maverick On-campus IT Internship Program"* – Maverick Software Consulting

Susantha Herath - \$3,256

Information Systems, *"Visual Consultants Collaboration"* – Visual Consultants Inc.

Susantha Herath - \$40,199

Information Systems, *"TelCom Construction Collaboration"* – TelCom Construction, Inc.

Barry Kirchoff - \$5,000

Small Business Development Center, *"Helping Immigrant Business Owners Recognize Business Growth Opportunities Educational Series"* – Initiative Foundation

Barry Kirchoff - \$201,039

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

Barry Kirchoff - \$1,000

Small Business Development Center, *"Minnesota Business Finance Corporation Funds for Financial Literacy Training"* – Minnesota Business Finance Corporation

Steve Mooney - \$28,536

Finance, Insurance and Real Estate, *"Minnesota Chair in Real Estate"* – St. Cloud State University Foundation

Adesegun Oyedele - \$500

Marketing, *"Export Market Development & Opportunity Assessment for RREAL in Nigeria"* – Rural Renewable Energy Alliance

Central Region SBDC spotlight: Gaslight Creative

by Barry Kirchoff

The Minnesota Small Business Development Centers provide the professional expertise and guidance that every small business owner needs to flourish in today's competitive and ever-changing business world. Funded by the U.S.

Small Business Administration and the Minnesota Department of Employment and Economic Development (DEED) and hosted by St. Cloud State University, the Central Region Small Business Development Center (SBDC) offers assistance to pre-venture, start-up and established business owners in the areas of loan packaging, financial analysis and assessment, accounting systems, marketing, business plan development and strategic planning.

As a testimony to the services we provide, we chose local small business, Gaslight Creative, to spotlight as our 2015 business of the year.

Gaslight Creative LLC

St. Cloud-based marketing manager Kelly Zaske and graphic designer Jodie Pundsack, co-workers and friends, left their jobs to start their own creative marketing agency. They quit on a Friday, painted their third floor walk-up and 175-square-foot office during the weekend and opened their door on Monday. That was June 1, 2009.

Fast-forward six-and-a-half years, and that company – Gaslight Creative – is well established. With 10 full-time employees and more than 50 American Advertising Awards to its name, the agency now occupies a 5,400-square-foot historical building in the heart of downtown St. Cloud. Gaslight has been recognized for industry achievements, community philanthropy and as a certified Women Owned Small Business.

Despite their success, Zaske and Pundsack remember that launching their new business without any planning and smack dab in the middle of the Great Recession was difficult. Financing their own efforts, they began slowly, working with local clients and adding employees when possible. They performed pro bono work, became involved in the community, and grew their business organically – one project at a time.

To be successful, Zaske and Pundsack knew that they needed to educate themselves on how to run their business and the first five years was indeed that – an education. During that time, Gaslight enjoyed success but also faced many challenges. As they celebrated their fifth anniversary, these partners were ready to take their business to the next level and began consulting with Bruce Thielman at the SBDC Central Region.

With Thielman's encouragement, Zaske and Pundsack were able to grow their business in several ways in 2015 —nearly doubling sales, leasing and renovating an additional 2,700 square feet of office space, adding four full-time positions, increasing wages and paying down debt.



IGNITE Center: A regional collaborative partnership for teacher effectiveness

by Diane Moeller



As the first program of its kind in the nation, the IGNITE Center starts its work as a regional collaborative among St. Cloud State University and six area school districts — Holdingford, Monticello, ROCORI, Saint Cloud Area, Sartell-Saint Stephen and Sauk Rapids-Rice. The Teacher Preparation Institute (TPI) is a result of a 2009 Bush grant that focused on recruiting, preparing, employing and supporting new teachers. While the work of TPI will continue under the leadership of Becky Krystyniak, the IGNITE Center is a new arm of the collaborative and will be under the direction of Diane Moeller. The center is funded through the membership of the six school districts and St. Cloud State and will broaden the scope of support to include teachers in all phases of their careers.



Teachers share ideas at New Teacher Workshop

The mission of the IGNITE Center is to maximize teacher effectiveness and increase student achievement through its vision of supporting best practice that involves researchers and practitioners. Opportunities will allow P-12 teachers to collaborate with other staff across districts as well as to work with St. Cloud State staff, and St. Cloud State staff will be able to do research and partner in the schools. The center will strive for sustainability within the districts and St. Cloud State by developing expertise and building up resources that can be shared, disseminated and sustained across the partnership. Expansion opportunities include fees for services, increasing the number of partner districts and exploring grants, sponsorships and gifts from private sector entities who realize the value of strong collaborative partnerships to ensure a resilient teaching force.

Three areas of focus will drive the direction of the center. The Induction program that was established with TPI will continue to support new teachers in their first three years of teaching. The program, led by Beth Mann, includes new teacher workshops that allow for networking and skill development, as well as training in instructional coaching for the mentors who work with them in their districts. This program is especially important for St. Cloud State to fulfill its commitment to support their new teacher graduates in their first three years of employment.

Another area of focus is professional learning opportunities and collaboration for all teachers. One of the projects is the development of an electronic database that will create a system for member districts and St. Cloud State staff to find people with areas of expertise with whom they can collaborate. Other goals for this focus include the creation of a Teacher Resource Library and opportunities for teachers and faculty to be on special assignments. The third focus is on collaborative research opportunities targeted at improving the preparation of teachers and the academic achievement of P-12 students.

The center will serve as the driver and connector for all of the services to come together. The innovative approach truly is unique. We are co-funded, co-led/staffed by P-12 districts and St. Cloud State and co-governed by an executive board comprised of the six district superintendents, two St. Cloud State deans and four St. Cloud State faculty members. Of course, 9-12 and St. Cloud State staff co-learning from and with each other for the highest achievement of all students is the ultimate outcome of our project.

INFORMATION TECHNOLOGY SERVICES

Christopher Stanley and Christopher Brown - \$30,000

Information Technology Services/Strategy, Planning & Effectiveness, *"Azure SQL and Analytics Proof of Value"* – Microsoft Corporation

SCHOOL OF EDUCATION

Steven Hoover - \$17,052

School of Education, *"Ignite Center"*

Steven Hoover - \$100,000

School of Education, *"School Year-Long Student-Teaching Pilot Project"* – Minnesota State Colleges and Universities

Kathy Johnson and Steven Hoover - \$76,000

Confucius Institute/School of Education, *"St. Cloud State University Confucius Institute – Confucius Classrooms"* – Hanban

Kathy Johnson and Steven Hoover - \$216,661

Confucius Institute/School of Education, *"St. Cloud University Confucius Institute"* – Hanban

Kathy Johnson and Steven Hoover - \$733,200

Confucius Institute/School of Education, *"St. Cloud State University Confucius Institute – Supplemental Funding"* – Hanban

Ming Chi Own and Shannon Rader - \$10,000

Child and Family Studies, *"Greater St. Cloud Area Thrive"* – Initiative Foundation

Ming Chi Own - \$14,700

Child and Family Studies, *"Thrive Match"* – St. Cloud State University Foundation

SCHOOL OF HEALTH AND HUMAN SERVICES

Sara DeVos - \$23,514

Social Work, *"Medical Education and Research Costs"* – Minnesota Department of Health

Theresa Estrem and Elizabeth Valencia-Borgert - \$14,000

Communication Sciences and Disorders/Center for Continuing Studies, *"Latino Parent-Child Language/Literacy Group"* – United Way of Central Minnesota

Teresa Heck - \$15,325

Kinesiology, *"Academy for Co-Teaching"* – St. Cloud Area Schools District 742

Amy Hebert Knopf and Brad Kuhlman - \$195,628

Community Psychology, Counseling and Family Therapy, *"Rehabilitation Training: Rehabilitation Long-Term Training"* – United States Department of Education, Office of Special Education and Rehabilitative Services

Amy Hebert Knopf, Barbara Vesely and Brad Kuhlman - \$199,990

Community Psychology, Counseling and Family Therapy, *"Rehabilitation & Addiction Counselor Education Program"* – United States Department of Education, Office of Special Education and Rehabilitative Services

Leah Meredith - \$5,000

School of Health and Human Services, *"SCRUBS Camp for Healthcare Careers"* – Initiative Foundation

Leah Meredith - \$19,998

School of Health and Human Services, *"St. Cloud State University & St. Cloud Technical and Community College SCRUBS Camps"* – Regenerative Medicine Minnesota

Mary Pfohl - \$83,653

Social Work, *"Bachelor of Social Work Child Welfare Consortium"* – University of Minnesota Twin Cities, School of Social Work

Susan Johnson Warner and James Knutson-Kolodzne - \$50,000

Nursing, *"Access to Exercise Stress Testing for Elderly Native Americans in Remote Locations"* – Advanced Medical Electronics Corporation

Scrubs Camp introduces students to health care professions

by Leah Meredith

Scrubs Camp provides middle school and high school students with a unique opportunity to explore careers in the health sciences. It was developed by HealthForce Minnesota, a collaborative partnership of education, industry and community that was created to increase the number and expand the diversity of healthcare workers. Scrubs Camp has grown from one camp at Winona State University to nine camps across Minnesota.

With the growing need for healthcare workers, St. Cloud State University wanted to provide an opportunity for high school students in Central Minnesota to experience life on a college campus, explore a variety of careers and to ultimately pursue a career in a health or human services related field.

Medical Laboratory Science
blood typing simulation



Scrubs Camp is a collaborative project between HealthForce Minnesota, St. Cloud State University, St. Cloud Technical and Community College (SCTCC) and CentraCare Health. Throughout the planning phase of the camp we received additional community support from The Good Shepherd Community, Rejuv Medical, St. Cloud Independent School District 742, Quarks and Lily's Wings and Things.

In June 2016, St. Cloud State hosted our first three day Scrubs Camp for 78 high school students from across central Minnesota. SCTCC also hosted a three day camp for 72 middle school and high school students. With generous contributions from St. Cloud State departments and community partners, we were able to offer 20 students with financial need a scholarship to attend the camp.



2016 SCRUBS Camp



Code Blue Simulation at CentraCare



Department of Nursing
ceiling lift simulation



Department of Speech-language
pathology simulation

Student Testimonials

"I liked the actual professionals and the topics. The hands-on activities were really great!"

"There were way too many good ones to choose, so I can't."

"Nursing and social work because I am thinking of becoming a nurse and found these sessions helpful and fun."

Parent Testimonial

"Just wanted to let you know what a great job everyone involved with this did! Our son came home every day singing praises for the entire program. We were then provided with a detailed account of each day."

During the three day camp, students toured and participated in a variety of simulations using St. Cloud State labs and classrooms. They experienced a nurse and social worker home visit simulation and learned how to blood type with our medical laboratory science program director. In addition, they learned about careers in speech-language pathology, audiology and gerontology. Students also attended field trips to the CentraCare Health Plaza where they participated in a "code blue" simulation and The Good Shepherd Community where they practiced rehabilitation therapies with residents.

Students completed pre- and post-camp surveys developed by HealthForce Minnesota in an effort to collect standardized data at Scrubs Camps across Minnesota and assess how effective we were in meeting our goals. Student feedback was overwhelmingly positive with 90 percent of students reporting that Scrubs Camp made them think more seriously about going to college and 99 percent of students reporting that after Scrubs Camp, they could see themselves in a healthcare career. We also asked students to share what they liked most about attending our Scrubs Camp.

This project received \$5,000 in funding from the Initiative Foundation, a regional foundation, and \$19,998 from Regenerative Medicine Minnesota. With the continued support from HealthForce Minnesota and our local campus and community partners, we have long term plans to offer the high school Scrubs Camp every summer and to increase both the number of attendees and the length of the camp. Our three year plan is to grow the high school Scrubs Camp into a four-day residential camp.

The 2017 SCSU Scrubs Camp will be held June 19-21.

SCHOOL OF PUBLIC AFFAIRS

Randal Baker - \$61,918

Geography, Planning and Community Development,
"Minnesota Tourism Travel Center" – Explore Minnesota
 Tourism

Cynthia Fitzthum - \$500

Social Studies Education, *"Winter Institute 2016"* – Initiative
 Foundation

Cynthia Fitzthum and Marla Kanengieter- Wildeson - \$1,000

Social Studies Education/Communication Studies, *"American
 Democracy Project/The Democracy Commitment Economic
 Inequality Initiative Campus Mini-Grant"* – The American
 Democracy Project – American Association of State Colleges &
 Universities

Richard MacDonald - \$5,000

School of Public Affairs Research Institute, *"Municipal Athletic
 Complex Research Study"* – City of St. Cloud

Richard MacDonald and King Banaian - \$50,000

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

Richard MacDonald and King Banaian - \$8,500

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

Jim Cottrill, Ann Finan, Stephen Frank, Monica Garcia-Perez, Amanda Hemmesch Breaker, John Kulas, Steven Wagner, and Sandrine Zerbib - \$70,000

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

Jim Cottrill, Ann Finan, Stephen Frank, Monica Garcia-Perez, Amanda Hemmesch Breaker, John Kulas, Steven Wagner, and Sandrine Zerbib - \$17,850

Survey Center, *"Social Capital Survey"* – Central Minnesota
 Community Foundation

Jim Cottrill, Ann Finan, Stephen Frank, Monica Garcia-Perez, Amanda Hemmesch Breaker, John Kulas, Steven Wagner, and Sandrine Zerbib - \$900

Survey Center, *"Annual St. Cloud State University Survey: Survey
 of St. Cloud State University Students"* – Campus Involvement

STUDENT LIFE AND DEVELOPMENT

Corie Beckermann - \$41,127

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

Jen Sell Matzke and Jennifer Johnson - \$2,500

Student Life and Development/UChoose, *"Minnesota
 Organization on Fetal Alcohol Syndrome Prevention"* –
 Minnesota Organization on Fetal Alcohol Syndrome

Jen Sell Matzke - \$3,879

Student Life and Development, *"St. Cloud State University
 Recovery Community"*

David McCandless - \$7,000

Campus Involvement, *"Lemonade Concert and Art Fair"* –
 Central Minnesota Arts Board

Dennis Mergen - \$120,985

Lindgren Child Care Center, *"Young Student Parent Support
 Initiative"* – Minnesota Department of Health

Dennis Mergen - \$1,600

Lindgren Child Care Center, *"Early Childhood Curriculum
 Enhancement"* – Child Care Aware of Minnesota

Dennis Mergen - \$37,500

Lindgren Child Care Center, *"Pathways II Early Learning
 Scholarship"* – Minnesota Department of Education

Jane Olsen and Brandon Johnson - \$14,200

Women's Center/Lesbian, Gay, Bisexual, Transgender Resource
 Center, *"Project Care: MNSURE Health Insurance Access for
 Students"* – Mid-Minnesota Legal Aid

Jane Olsen - \$20,000

Women's Center, *"Women Leading Change: An Experiential
 Feminist Leadership Program"* – Morgan Family Foundation

Master Mocktail Mixology

by Jennifer Johnson

UCHOOSE has written and received a Minnesota Organization on Fetal Alcohol Syndrome (MOFAS) Prevention grant for the past three years, totaling \$5,500. In 2015, UCHOOSE teamed up with St. Cloud State Winter Celebrate to host the kick-off event “Master Mocktail Mixology”.

The challenge resembled the television show “Master Chef.” Teams were provided a number of non-alcoholic ingredients to create the best mocktail within a predetermined time limit. Guest judges awarded points based on creative SCSU or Husky-themed name, taste and appearance.

The students created about 20 new mocktail recipes in custom MOFAS logo cups, which were then compiled in a mocktail recipe flip book that is now handed out at UCHOOSE events. The event succeeded in reaching a key demographic with the “049” (Zero Alcohol for 9 Months) message through an interactive, creative model of engagement. UCHOOSE is thrilled to continue to partner with MOFAS to bring the “049” message to students, staff, and faculty at St. Cloud State.



OFFICE OF STRATEGY, PLANNING AND EFFECTIVENESS AND UNIVERSITY COMMUNICATIONS

Lisa Foss - \$12,750

Office of Strategy, Planning and Effectiveness and University Communications, “*Minnesota Pilot Consortium*” – Association of American Colleges and Universities

Jo McMullen-Boyer - \$61,500

KVSC, “*State Community Service*” – Minnesota Department of Administration

Jo McMullen-Boyer - \$17,750

KVSC, “*State Equipment Grant*” – Minnesota Department of Administration

Jo McMullen-Boyer - \$195,138

KVSC, “*Arts & Cultural Heritage Legacy Grant*” – Minnesota Department of Administration

Jo McMullen-Boyer - \$96,083

KVSC, “*Corporation for Public Broadcasting Community Service Grant*” – Corporation for Public Broadcasting

Jo McMullen-Boyer - \$49,790

KVSC, “*Support Program*”



Granite City Radio Theatre live band plays at Pioneer Place on Fifth



Minnesota-based musician and songwriter

Granite City Radio Theatre

by Jo McMullen-Boyer

Granite City Radio Theatre is a quarterly live radio show broadcasted by KVSC 88.1 FM. The station is student-run and operates 24 hours a day, 365 days per year. KVSC is an educational public radio station licensed to St. Cloud State University. The live radio program is funded by the Minnesota Arts and Cultural Heritage Legacy Grant. Jo-McMullen Boyer along with 30 actors, writers, musicians, technical directors and promotions specialists help make the events successful. During this past year 650 people attended the live shows and many more streamed or listened on the radio. Granite City Radio Theatre is something the community looks forward to and enjoys.

One attendee said, "So entertaining! Old fashioned, good fun! The Radio Theatre is the highlight of all the shows I see."

A different attendee raved, "Another great Granite City Radio Theatre. Fun for the whole family!"

KVSC, in partnership with Pioneer Place on Fifth, is ready to rock the fifth season of Granite City Radio Theatre! The first show of this year took place on Oct. 19 with KVSC broadcasting live from the historic theater.

Five students took part in the Granite City Radio Theatre assisting with sound engineering, announcing the program live on stage, studio hosts, web/social media and design of promotional materials. KVSC offers students a place to collaborate with faculty and gain needed experience working with professionals in the community. It integrates existing and evolving technologies in order to provide students with the experience they need for a future in mass communications and other careers.



*"Our work is about people and relationships.
We are dedicated to engaging with students,
campus and the community with faculty and staff
dedicated to helping students succeed."*

A handwritten signature in black ink that reads "Ashish L Vaidya".

Ashish Vaidya

Interim President, St. Cloud State University



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