

Southern Utah University

Walter Maxwell Gibson College of

Science & Engineering

2017/2018 Newsletter

A GLOBAL

PARTNERSHIP

Construction Management degree program partners with university in China

PRESERVING THE

NIGHT

Department of Physical Science unveils new observatory in Great Basin National Park

WOMEN IN TECH

Department of Computer Science and Information System's Professors honored by multiple agencies for their efforts in bringing STEM to girls

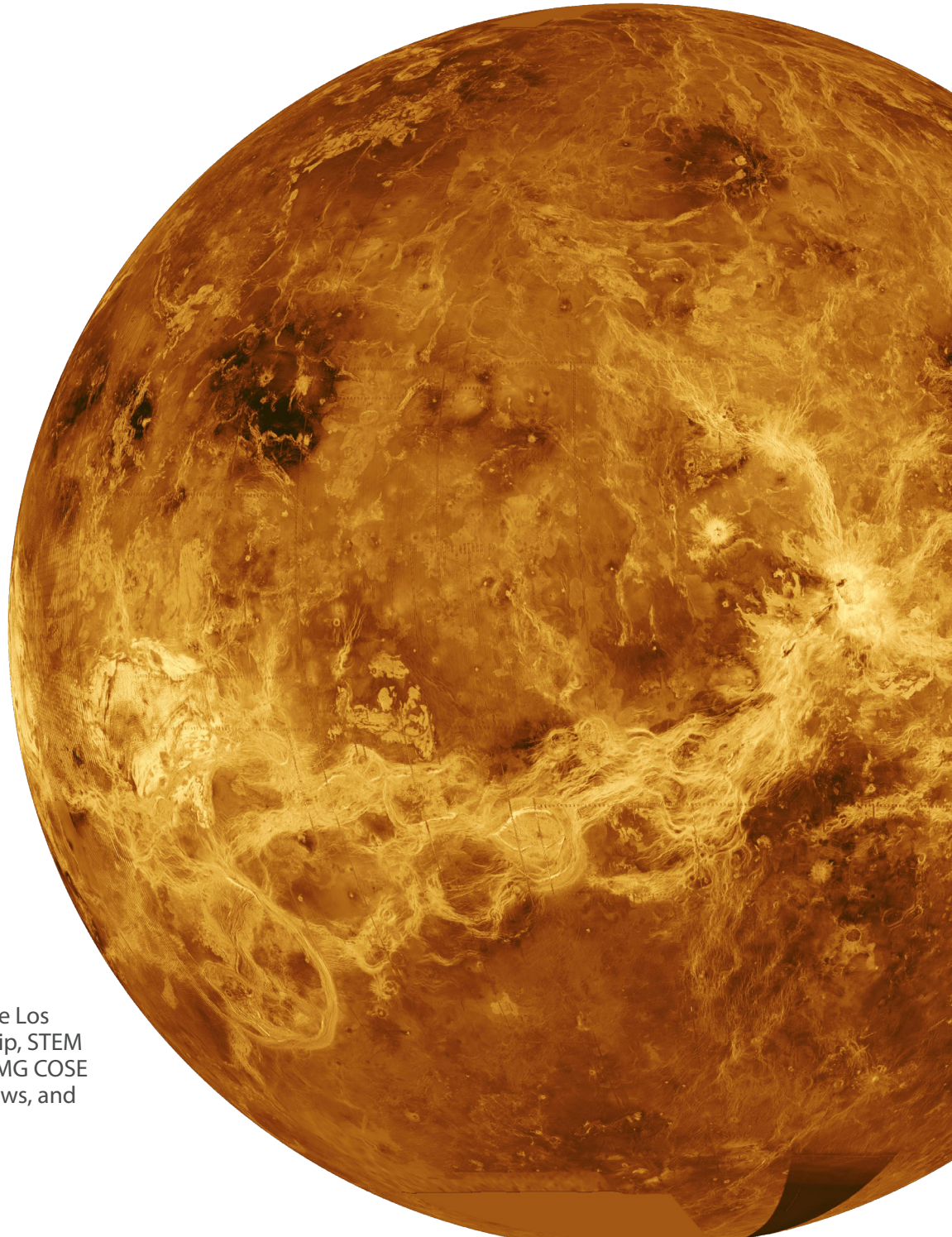
SUU AND

VIETNAM

Master's Degree in Cyber Security now taught in Vietnam

PLUS

The Math Major chosen for the Los Alamos National Lab internship, STEM growing in Southern Utah, WMG COSE faculty and students in the news, and more





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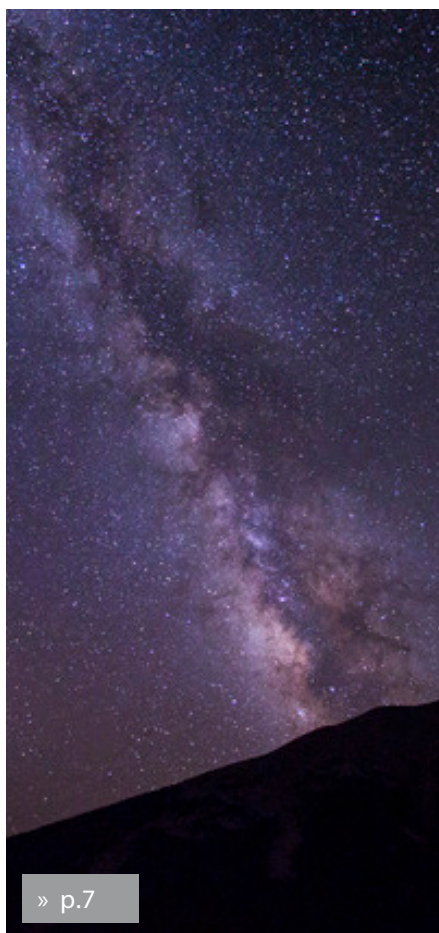
“ Our faculty, staff, and students have fun and work hard at creating the finest undergraduate science experiences in our region.”

» www.suu.edu/cose

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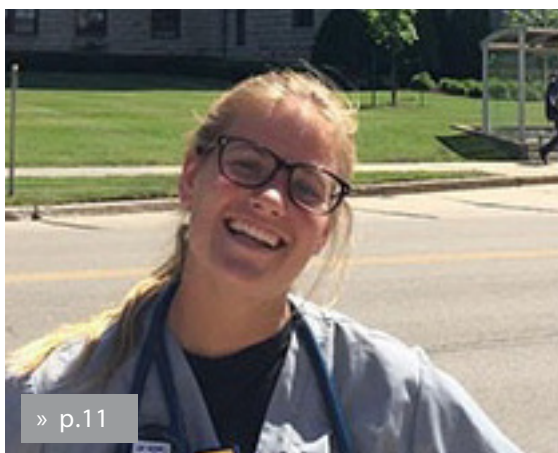
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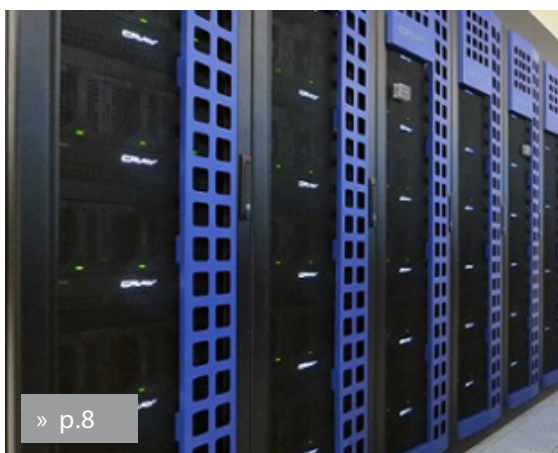
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MEDICAL SERVICE

STUDENTS TAKE HEALTH CARE TO THOSE IN NEED



Instead of spending their spring break resting or going on vacation, students from SUU, DSU, and Snow College helped others in meaningful, medical ways. In total, 46 students traveled with the Rural Health Scholars Program to underserved communities in Nicaragua, Las Vegas, and the Four Corners area.

NICARAGUA

Several students ventured out of the country to experience rural areas of Nicaragua, where they assisted in health clinics with impoverished populations. SUU student Vanessa VanWart said, "The health problems that Nicaraguans have are so different...there were a lot of issues

due to parasites or dehydration, which are things we don't usually have to deal with in the U.S."

All students who participated in the trip are pursuing careers in medicine, so it is important that they gain experience in serving others with very different cultural, language, and economic backgrounds. Through four days of health screenings in rural Nicaragua, they most definitely experienced quite a culture shock, and learned so much in the process.

FOUR CORNERS

DSU student Rachel Seegmiller attended the Four Corners trip, and realized, "as a future healthcare

The Utah Rural Health Scholars (RHS) Program prepares students for admission to graduate healthcare programs. Through a series of academic and non-academic experiences, students increase their likelihood of being accepted into medical, dental, physical therapist, occupational therapist, physician assistant, nursing, podiatry, optometry, veterinary, healthcare administration and allied health schools.

provider, you have to learn to be able to work with people from all different backgrounds and all kinds of philosophies." During the week students stayed in Blanding but traveled as far as Monument Valley to shadow healthcare providers with Utah Navajo Health Services. The goal of this immersion experience is to expose pre-health students to the practice of medicine in rural communities with Native American populations. Seegmiller especially loved shadowing Navajo physicians to see their interesting perspective and how much they connect with their patients.

LAS VEGAS

Rita Osborn, Director of the Utah Center for Rural Health, accompanied the students on the trip to Las Vegas, where her hope was that, "students learn what it is like to live and work in an urban, underserved healthcare setting." During this trip, students performed health screenings with homeless populations, shadowed healthcare providers, and even toured Nellis Air Force base to observe healthcare provider life in the military. In addition, students volunteered at various organizations including Shade Tree Women's

Shelter, 3 Square, Operation Clean the World, Opportunity Village, and the LGBTQ Center.

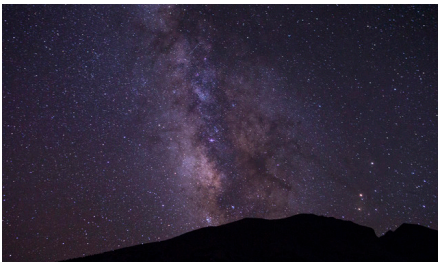
SUMMER ASSISTANCE: DOMINICAN REPUBLIC

SUU RHS and Nutrition majors from the SUU Department of Agriculture & Nutrition flew to the Dominican Republic following their Spring Semester Finals Week. The students provided health screenings with populations in impoverished areas.



PRESERVING THE NIGHT

PHYSICAL SCIENCE PARTNERS WITH GREAT BASIN NATIONAL PARK



The Department of Physical Science has partnered with Great Basin National Park to help preserve the night skies by building and operating the first research-grade telescope in a National Park. The observatory opened on August 25th as part of the National Park Service Centennial celebration.

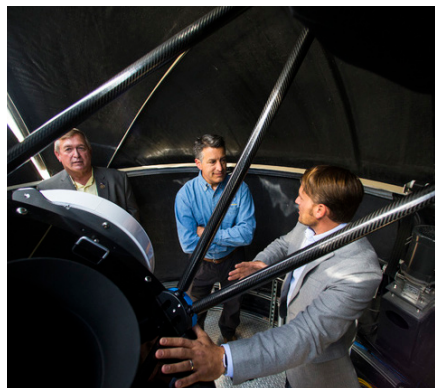
The Great Basin Observatory will enable world-class fundamental research, create opportunities for students, and bring the beauty of the cosmos to people everywhere while protecting and

preserving the night skies as a park resource.

According to Dr. Cameron Pace, a physics professor at SUU, university staff and students will have remote access to the telescope for research projects. SUU will also support the administration and operation of the telescope as well as helping with facility maintenance.

"People live in areas where the brightest stars are just helicopters," said Pace "The observatory will help educate the value of dark skies."

"Usually telescopes are built for advanced research. For that very reason many undergraduates don't get to use one," said



Dr. Rhett Zollinger, a physics professor at SUU. "The opportunity is here and students will be able to create their own interests and projects."

Now that the observatory is open, Great Basin National Park is connecting with visitors, developing tools for K-12 teachers and encouraging the next generation of scientists and stargazers.

The observatory is a collaborative project between the Great Basin National Park Foundation and four partner universities: Southern Utah University; University of Nevada, Reno; Western Nevada College; and Concordia University.



LOS ALAMOS NATIONAL LAB

MATH MAJOR CHOSEN FOR PRESTIGIOUS INTERNSHIP

Morgan Taylor's passion for the universe and her perseverance in the classroom qualified her to participate in the prestigious Los Alamos National Laboratory Undergraduate Student Program in June. Through this highly regarded science research internship, Taylor gained remarkable experience and opportunity designed to complement her pure mathematics degree at Southern Utah University.



Morgan is a terrific example of the driven, high-achieving students we have in the Walter Maxwell Gibson College of Science and Engineering."



Taylor's perfect academic record and research prowess secured her spot among top applicants competing for one of 24 summer slots at Los Alamos. In addition to SUU, other schools represented include physics-leaders MIT, Stanford and Caltech.

Los Alamos National Laboratory is the foremost Department of Energy national security laboratory in the nation. Located in New Mexico, the lab's primary function is nuclear weapon stockpile stewardship; it is birthplace of the atomic bomb.

The Los Alamos National Laboratory's state-of-the-art supercomputers are used by laboratory scientists not only to tackle formidable problems in national security, but in open research in areas of chemistry, plasma physics and computational astrophysics.

Taylor had the opportunity to use these powerful computing clusters to simulate the origins of large-scale structure in the cosmos and understand the cosmological origins of the life-giving substance of water. The work involved simulating star formation, tracking supernova blasts which spray heavy elements through the cosmos and modeling a chain of chemical reactions in dense interstellar clouds which give rise to this precious requirement for life. Through simulations, the team hoped to increase the understanding of when, where, and how complex molecules such as water, form in galaxies. Taylor worked directly with celebrated cosmologist Joseph Smidt.

"Morgan is a terrific example of the driven, high-achieving students we have in the Walter Maxwell

Gibson College of Science and Engineering," said Robert Eves, Dean of the College of Science and Engineering and professor of chemistry and geology. "She [represented] SUU well in this high-visibility numerical physics workshop at Los Alamos National Laboratory."

Taylor began her scientific studies in a college physics class her first semester at SUU and never looked back. In what she deemed as her most challenging class so far, Taylor became fascinated with physics and the mathematics of the universe.

"I'm amazed at how much of what we know is due to the equations we take for granted," said Taylor. "I'm beginning to understand how miraculously applicable math and physics are to every aspect of life, and I have a strong desire to understand those applications in greater detail."

Taylor's mentors, Dr. Cameron Pace and Dr. Brandon Wiggins, recognized her potential early in the classroom. They both worked with Taylor on extracurricular research and crafted her course schedule to match top level physics degrees.

"Morgan is both intelligent and hard working," stated Pace. "She is also very driven, which makes her a very capable researcher. I know that when Morgan tackles a research project, she will work very hard on it, and she often comes back with very insightful questions about the project."

Taylor plans to pursue a career in physics research. She has maintained a perfect 4.0 GPA in spite of the heavy course load and



extracurricular research with Wiggins in parallel simulations of protoplanet collisions. She was also recently awarded the Outstanding Underclassmen award from the Department of Mathematics.

"Professor Wiggins is a wizard," said Taylor. "Researching with him and Dr. Pace have helped me shape my future aspirations to go into astrophysics research."

"Morgan's success in securing this internship, in light of the workshop's rigorous, three-stage selection process with a search committee of some 12 physicists is total evidence of her academic goals and research prowess," said Wiggins. "Morgan is amazing and she will go places."

A GLOBAL PARTNERSHIP

SUU CONSTRUCTION MANAGEMENT



have been working with WPU for roughly five years to plan and prepare the program. The first group of 10 students arrived at SUU in Fall Semester 2016.

Ray, a construction management student from WPU, spoke highly of the new program.

“When I heard I had the chance to go to an American university I was so excited,” said Ray. “At SUU I’m able to learn the most up-to-date engineering and construction technology that isn’t taught at my university.”

When asked what he enjoyed most about SUU Ray replied, “I like that my teachers here are my friends. That is something I’ve never experienced before. They are always supporting and helping us.”

This May a Master in Business Administration (MBA) agreement was finalized with WPU. Since construction management includes many prerequisites for a business degree, those students will be able to complete their MBA if they stay one additional year at SUU.

Over the last few years, SUU has established a strong partnership with Wuhan Polytechnic University (WPU) in China.

This partnership fell in line with SUU’s essential learning outcomes including “knowledge of human cultures and the physical and natural world and intercultural knowledge and competence.”

In 2011, WPU approached SUU wanting to start dual degree programs and after years of planning and development have since established programs in the communication and construction management departments with future plans to extend the dual

degree opportunities to business majors. Students from China can now complete their first two years of coursework at WPU and then come to SUU for the last two years and receive a bachelor’s degree from both universities. As a way to prepare and transition students to SUU, the university also helped establish an English writing center at WPU.

The Construction Management Program was the first to offer a dual degree for WPU students. Eric Freden, Interim Associate Dean of the Walter Maxwell Gibson College of Science and Engineering, and professors Richard Cozzens and Jared Baker from the Department of Engineering & Technology

MAKING HEADLINES

WMG COSE FACULTY AND STUDENTS IN THE NEWS



ARTIS GRADY

Nutrition professor Artis Grady was presented with the 2017 Award of Merit by the Utah Academy of Nutrition and Dietetics. She was nominated for this prestigious honor by fellow SUU dietitians and her department Chair, and colleagues at area universities.

"I was really surprised [by] the award. I am truly humbled by all this."



SADIE NEMELKA

Nursing major Nemelka completed a prestigious nursing internship at the Mayo Clinic in August 2016. Her experience included working in the Special Care Nursery and caring for patients after major brain or spinal surgery.

"Ultimately, my experience at the Mayo Clinic was indescribable and very fulfilling."



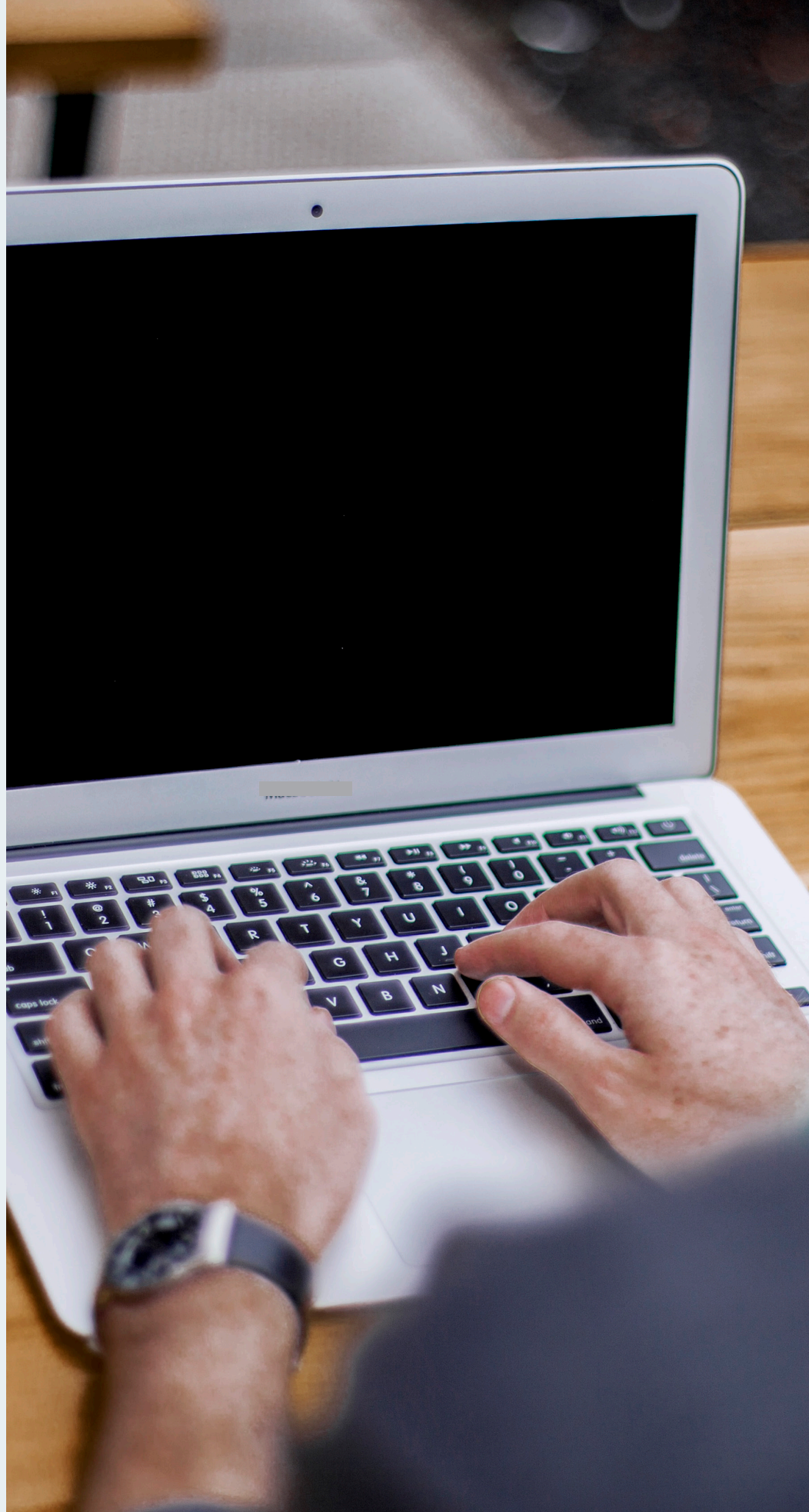
HAILEY WALLACE

Biology major Wallace was selected as one of four interns selected through PDXWildlife to perform behavioral research with giant pandas at the China Conservation and Research Center for the Giant Panda in Difengzia, China.

"Because of my experience I've chosen to pursue a MS in Environmental Science and hope to aid in conversation efforts."

“

This partnership... will bring individuals into the program whose perspective will enhance and benefit fellow students at an international level.”



SUU & VIETNAM

TRAINING CYBER SECURITY EXPERTS

SUU Computer Science & Information Systems (CSIS) opened its online courses to Vietnam in the summer of 2017. Through an international partnership with FPT Corporation, the largest Vietnamese telecommunication company, the Master of Science in Cyber Security & Information Assurance program became available to students attending FPT University and its online counterpart FUNix University.

"This partnership extends the reach of SUU and the CSIS Department into Vietnam," said Dr. Robert Robertson, department chair and associate professor. "It [brings] individuals into the program whose perspectives enhance and benefit fellow students at an international level."

As the first online educational opportunity offered in Vietnam, FPT University and SUU are promoting the process of international cooperation in education. In May 2016, FPT University leaders and SUU dignitaries, including President Scott L Wyatt, signed the agreement to help increase professional training opportunities available to FPT students.

"Students will receive the same experience and personalized instruction as a traditional SUU classroom while preparing

themselves for the rapidly growing field of cyber security," stated Dr. Roger LaMarca, Director of Online Admissions.

Online Vietnamese students will have access to all the resources and materials available to students in a traditional learning environment. Throughout the program, students will have access to a library, tutor, lecturer, have opportunities to study alongside American SUU students and be educated by leading experts in the cyber security industry.

The Cyber Security program has been tailored to achieve the highest efficiency and educational quality available online. This new partnership will help further available education in Vietnam and will increase SUU's international presence.

With a comprehensive international environment and a wealth of knowledge taught by high profile cyber security professionals, including NUIX's Chris Pogue, SUU is helping to advance all of its students in this fast-growing career field. The university works hard to make it possible for non-traditional students and working professionals to earn a master's degree.

IN OTHER NEWS

WMG COSE FACULTY AND STUDENTS IN THE NEWS

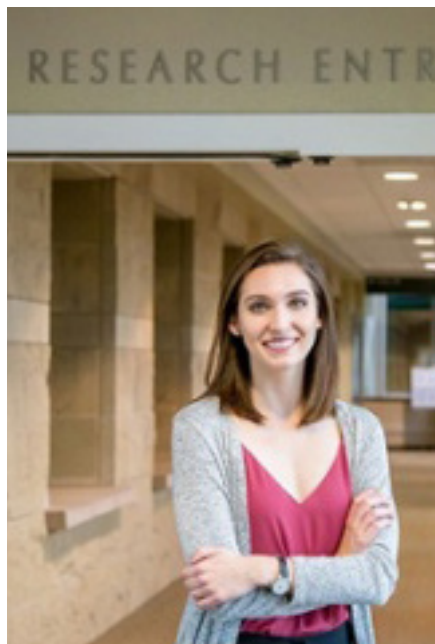


Representing SUU on a state level is a big deal, but representing the entire state of Utah in a national competition speaks volumes about a person's talent and character. Tiffani Phillips, an interdisciplinary studies/agriculture science and industry major at SUU, competed at the American Farm Bureau Federation's Young Farmers & Ranchers National Collegiate Discussion Meet and placed in the final four.

Aferdit Sadrija graduated with two bachelor degrees; one in psychology and the other in human nutrition with an emphasis in allied health. Directly after graduation, Aferdit was hired as a clinical research coordinator for the Huntsman Cancer Institute, a highly noted NCI-designated cancer research facility and hospital. Aferdit credits the outstanding faculty and staff members at SUU for her current success.



Claire Cleveland plans to create more science-based outreach opportunities geared toward the general public, thanks to a NSF Fellowship grant. An SUU alumna and current geosciences doctoral student at Penn State, Cleveland is fascinated with communicating technical scientific information to a large audience. Cleveland earned a double major in biology and geology in 2015. "I had no idea that SUU would be so engaging and offer such a rewarding developmental experience to me."





The Dixie National Forest, Southwest Wildlife Foundation and Garth and Jerri Frehner Museum of Natural History at SUU, with funding from National Geographic, partnered to host the Cedar City BioBlitz. This free family event provided a birds of prey program, identification walks, Pokemon Go walks, 5K fun run, raffle prizes, see live raptors, reptiles and amphibians.



Jonathan Warren was named 2017 WMG COSE Valdictorian. Warren credited his academic success to teachers who went out of their way to help him learn the material and maintain a 4.0 GPA. He has been accepted to the U of U pharmacy program.

The Department of Computer Science of Information Systems hosted the U.S. Cyber Challenge Western Regional Cyber Camp. Camp participants from across the western United States spent five days consumed by intensive instruction from some of the nation's leading cyber security experts. An Executive Roundtable and job fair were also held during the camp.



Prospective SUU students can now explore COSE majors and meet professors over the internet, thanks to a new line of YouTube videos released by the university. The collection features many COSE professors, students and former students; playlist topics include Why Choose SUU?, Major Decisions, Meet our Professors, and SUU to Everywhere. Go to www.youtube.com/SUUTbirdsOfficial to view clips and videos.



Engineering Technology major Dustin Gale used the lessons he learned in the program to help a community member in need. He created a 3D model of a new home, complete with interior and exterior views, for a Cedar City resident and member of the Canyon Creek Women's Crisis Center. "Dustin is helping create my safe haven," the woman commented when asked about the project.



Dr. Jacqueline Grant received a first-of-its-kind release time award from iUTAH (innovative Urban Transitions and Aridregion Hydro-sustainability). Grant will use this break from campus duties to develop proposals with colleagues in the Intermountain West.

ROCKETBIRDS EARN HONORS

ENGINEERING ROCKET CLUB WIN AT SPACEPORT AMERICA CUP

The Rocketbirds, an SUU engineering student club, earned high honors in June at the 2017 Spaceport America Cup. The SUU team placed third in the Space Dynamics Laboratory Payload Challenge, beating out 40 competitors.

Five SUU students traveled with Dr. Scott Munro, associate professor of engineering, to a desert area just outside the town of Truth or Consequences, New Mexico. The first day of the competition consisted of a session where teams interacted with each other, judges and members of the public. The remaining days were spent at the launch site.

With more than 110 teams from colleges and universities representing 11 countries, 2017 was the competition's largest year to date. Students launched solid, liquid, and hybrid rockets to target altitudes of 10,000 and 30,000 feet.

The competition helped students apply classroom concepts to real-world problems by constructing a 12.5 foot rocket.

"These types of projects require long-term teamwork, time management and budgeting," said Munro. "Companies that build or work with rockets see this competition as a great place to recruit new talent."

For Tim Austin, a senior engineering major, the Payload Challenge was a highlight. To compete in the challenge, teams had to design a unique payload with some functionality. SUU's team chose to build an electric generator and decided to have it separate from the rocket and descend on its own.

Students worked together to create a 3D computer model of the large propellor, then used drafting software to cut each blade and install a hinge. This allowed the propellor to fold small enough to fit inside the rocket, but also to unfold once it deployed to generate the needed power.

This propellor power was used to charge a siren battery, designed to help the team locate the generator as it fell. However, during the launch the team could not verify that the payload performed as expected. Despite this, the judges were impressed with the team's concept and design and awarded them third place.



FIGHTING FIRE WITH FLOWERS

BIOLOGY PROFESSORS AID BLM WITH WILDFIRE REGROWTH



Dr. Jackie Grant, a biology professor at SUU, was awarded \$67,949 from the Bureau of Land Management's Colorado Plateau Native Plant Program (CPNPP) to collect seeds from native plants for research and restoration. These seeds are used to restore plant life after wildfires destroy forests and seeds in the underlying soil.

The project, which was created while the Brian Head Fire raged only 32 miles away from the University, will simultaneously train students on proper seed collection to treat the damaged land and help accelerate plant regrowth after the fire.

The Brian Head Fire burned over 70,000 acres of land. Traditionally,

it would take 60 to 100 years for the forest to regrow, but thanks to Grant's seed collection project, non-native plants will be prevented from slowing the process of reforestation. Native plants are crucial to maintain pollinator populations and feed wildlife such as elk and mule deer. However, fires the size of the Brian Head Fire sterilize the soil and kill most of the seeds.

"Native plants are important in Utah because this state is part of a fire-adapted ecosystem, which means that fires happen on a regular basis here," said Grant. "We need plants to return to the land as soon as possible after a fire to prevent heavy rains from eroding the soil and filling streams

with sediment that kills fish. Although we often overlook them, native plants provide the groundwork for what makes this state special."

An associate professor of biology, director of the Garth and Jerri Frehner Museum of Natural History, and a conservation biologist, Grant focuses her teaching and personal research on green infrastructure and organismal biology.

Grant's project highlights the importance of public lands in Utah. "We need an incredible number of seeds to restore plant communities after a fire of this size," said Grant. "We get most of our seeds from public land where native plant populations are somewhat protected. However, private landowners can also play a role in wildfire restoration by granting permission for us to collect seeds on their land."

Dr. Grant's team began collecting the thousands of seeds needed to contribute to the restoration of native plant communities before the Brian Head Fire was extinguished.

Grant, her fellow biology professor Dr. Matt Ogburn and two SUU students traveled across southern Utah and identify native plants as directed by the Colorado Plateau Native Plant Program of the BLM.

Grant's team used their travels to assist several other projects, as well.

The team contributed to research performed by Magda Garbowski at Colorado State University, where scientists were trying to determine how to keep damaging non-native plants out of our ecosystems.

The team also collected genetic tissue samples to send to their partner Rob Massatti at the United States Geological Survey in Flagstaff, Arizona. USGS

researchers have been using genetics to make seed collection and distribution more efficient and effective.

Grant and Ogburn also collaborated with the US Forest Service to find seeds from plants that would improve sage grouse habitat, and plants that would provide nectar for butterflies.

The research conducted this summer built on previous work Grant has done with iUTAH, the state's National Science Foundation EPSCoR grant.

Grant's collaborations with iUTAH, a statewide research infrastructure improvement grant aimed at water research, education, and outreach, have been recognized with both a Research Catalyst

Grant and an Education and Outreach Catalyst grant. A third award for time-release gave Dr. Grant the time to write the proposal for seed collection.

"Dr. Grant exemplifies what it means to be an 'engaged scholar,' said Andy Leidolf, assistant director of iUTAH.

"We are now able to weave science, education and our research through multiple levels of the community while providing experiential learning opportunities to SUU students and recent graduates," said Grant. "The BLM grant is a fantastic opportunity for the university as it allows us to work with a federal program to provide economic and educational opportunities for the local community of Cedar City."

Other funding obtained by Dr. Grant has come through the Utah Division of Arts and Museums and the Society for the Study of Evolution. Grant is currently developing a proposal with the Paiute Indian Tribe of Utah to create a trio of gardens devoted to native and culturally important plants.

Grant recently finished a DNA Barcoding course through the University of Guelph and is the current Vice President for Education Outreach for the Society for Conservation Biology where she serves on the board of governors and organizes educational activities at their international meetings. Locally, she contributes to Cedar City as a member of the Trails Commission, a partner with K-12 science teachers, and a board member of the Southwest Wildlife Foundation.



WORLD COMPETITION

SPONSORED HIGH SCHOOL TEAM IN INTERNATIONAL CONTEST

A high school robotics team sponsored by the Center for STEM Teaching & Learning (CSTL) and the Department of Engineering & Technology (E&T) competed successfully in international competition in April 2017.

The team, known as the PrestidigiTaters, competed in the FIRST Tech Challenge (FTC) at FIRST (For Inspiration and Recognition in Science and Technology) World Festival in Houston, Texas. The teens contended against teams from across the globe and finished the competition 17th out of the 64 teams in their division.

The team's name, the PrestidigiTaters, is a play on the word prestidigitation, meaning finger magic, and potatoes, the team members' favorite food.

The team achieved many victories during the four-month competition season, including becoming SUU Qualifier Champions and Utah State Champions before taking 6th place at the West Super Regionals in Tacoma, Washington. Their placement at West Super Regionals qualified them for World Festival; one of only two

teams from Utah to earn the honor since the creation of FTC 10 years ago.

In FTC, students are challenged to design, build and program a robot to compete in a head-to-head contest in an alliance format. The complex challenge, which changes every year, requires skilled use of both hardware and software utilizing uniquely crafted code for autonomous and driver-controlled

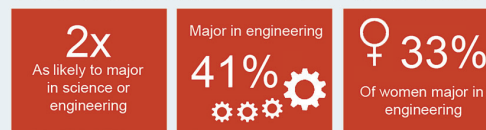
operation. The PrestidigiTaters incorporated the use of computer-aided design (CAD) for prototyping and troubleshooting purposes to prepare their robot for competition.

CSTL and E&T sponsored 9 southern Utah FTC teams during the 2017 season. CSTL also sponsored 30 teams in FIRST's competitions for younger students, FIRST Lego League (FLL) and FLL Jr.

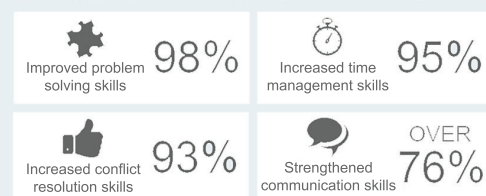
WHY FIRST? CSTL and E&T sponsor FIRST teams because of the positive impact FIRST programs have on K-12 students.

Ten years of evaluation data indicate that with participation in FIRST, team members are:

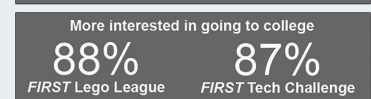
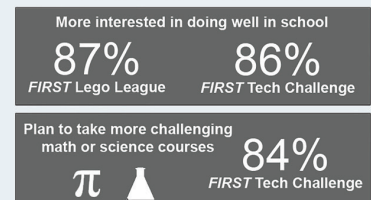
STEM MAJOR CITED BY FIRST PARTICIPANTS



WORK/LIFE SKILLS OF FIRST PARTICIPANTS



SCHOOL ENGAGEMENT FOR FIRST PARTICIPANTS



FIRST ALUMNI IN STEM CAREERS

OVER 75% of Alumni are in a STEM field as a student or professional

?
 For more FIRST data, visit www.firstinspires.org

STEM GROWING IN SOUTHERN UTAH

SUU CENTER FOR STEM TEACHING & LEARNING 2017 OUTREACH

Since its creation in 2014, the SUU Center for STEM Teaching & Learning (CSTL) has worked relentlessly to bring quality student engagement, professional development and college and career readiness to the K-12 community throughout southern Utah and beyond. Total number served during the 2016-2017 academic year: **Over 20,000**



Aspirations an affiliate program of NCWIT dedicated to increasing the number of women in computing. Total number served: **225**



Project Archaeology at Girl Scouts Camp A 3-day archaeology adventure near Moab, Utah. Total number serviced: **40**



Tech Ambassadors Teaching K12 students to code with a peer mentor approach. Total number served: **Over 300**



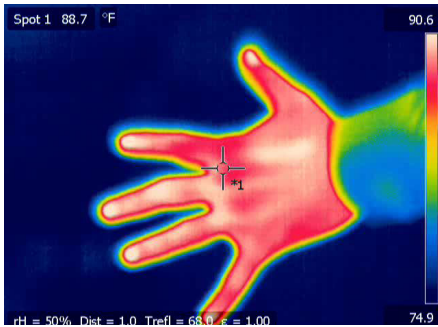
Project Archaeology Teacher Workshops Professional development and training for K-12 teachers. Total number served: **24**



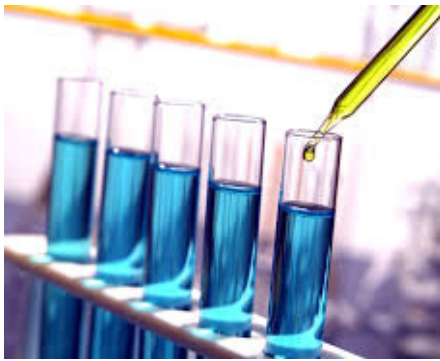
SRM Utah Youth Range Camp Emphasizing conservative use and mangement of Utah's range-lands. Total number served: **21**



SUU Natural Resource Camp Educating high school students on the importance of conservation and resource management Total number served: **40**



Infrared Camera Project Helping K-12 and university students learn physics by using a different part of the E-M spectrum. Total number reached: **1380**



Chemistry Madness Over 200 fun/educational demos for K-12 students and the community. Oldest participant: 103. Total number served: **5000**



Tech Fair An on-campus technology and engineering competition for high school students. Total number served: **240**

Science Olympiad A regional tournament of a national program with 48 events for grades 6-12. Total number served: **450**



STEAM Festival Providing K-7 students and families an exciting way to explore STEM. Total number served: **2780**



Code Changers and Girls Go Digital Two camps inspiring students ages 8-18 to hack, design code and create technology. Total number served: **Over 200**



The Garth & Jerri Frehner Museum of Natural History Welcoming school field trips and community tours. Total number served: **5700**



Cedar Mountain Science Camp and CMSC Extreme Middle School Adventure Camp Combining science and outdoor fun. Total number served: **440**

ADDITIONAL CSTL PROGRAMS

Animal Ambassadors, Carnegie Mellon CREATE Lab, Engineering Expo, Fostering Mathematical Understanding in K-5, Mobile Planetarium, Science Fair, FIRST Lego League, FIRST Lego League Jr, FIRST Tech Challenge, SUU Observatory, SUU TECS Camp, Voyager.

SUU WOMEN IN TECH AWARDED

GOOGLE.ORG, NCWIT AND WTC HONOR CSIS EFFORTS



“Computer science and information systems is actually a great field of work for women because of the versatility of your schedule and the problem-solving nature of the field. This program aims to equalize opportunities for everybody.”

As another part of the grant project, 20 students will participate in 5-10 hours of outreach activities to help K12 and prospective students gain exposure and experience in computer science.

PROFESSOR RECOGNIZED AT WOMEN TECH AWARDS

Dr. Shalini Kesar, SUU associate professor of information systems, was announced as the winner of the Education Excellence Award at the 2016 Women Tech Awards, held in September in downtown Salt Lake City. The event, hosted by the Women Tech Council (WTC), recognizes technology-focused women who are innovators, leaders, and key contributors in STEM fields.

Kesar was one of 20 finalists who are all strong advocates for gender diversity in STEM-related

According to the National Center for Education Statistics, more than 57 percent of college undergraduates are women, yet only 18 percent progress into STEM (science, technology, engineering and mathematics) as a career. Professors from the SUU Department of Computer Science and Information Systems has recognized this discrepancy and worked to change the statistic. Their continued efforts are now being recognized on a national level.

GOOGLE AWARDS GRANT

The National Center for Women and Information Technology (NCWIT) selected Southern Utah University to receive a 2016 NCWIT Student Seed Fund award

sponsored by NCWIT and Google.org. SUU, in collaboration with Dixie State University, received \$3000 to create a chapter of the Association of Computing Machinery – Women (ACM-W). This funded enabled SUU and DSU to send 20 students to the Rocky Mountain Celebration of Women in Computing conference in Salt Lake City.

The grant proposal was prepared based on feedback by students at SUU in the existing Women in Computing club, led by assistant professor of computer science Dr. Cecily Heiner and CS major Jacqueline Oliverson.

“There is a lot of concern that women are highly underrepresented in computing,” said Heiner.



fields.

According to Cydni Tetro, President of the WTC, this year's finalists represent some of the best minds of women in tech.

"The Women Tech Awards recognizes outstanding women in the technology field who drive innovation and create impact," said Tetro. "Our platform showcases the talent and breadth in STEM fields and highlights great role models for the next generation. This year's finalists now become part of an elite group of 150 women who represent some of the best minds of women in tech."

For the past twenty years, Kesar has spearheaded many projects to enhance awareness about computing as an education and career option among women. She has raised local educators' understanding and knowledge of how to utilize and promote technology in their schools.

Her recent endeavor is leading the Southern Utah Aspirations in Computing program (SUAIC) for high school girls within ten rural counties in southern Utah. This program, part of the National Center for Women in Information Technology (NCWIT), is a coalition to increase diversity in computing via 70 regional Aspirations programs.

“Computer science and information systems is actually a great field of work for women because of the versatility of your schedule and the problem-solving nature of the field. This program aims to equalize opportunities for everybody.”

Her efforts with SUAIC and her daily classroom teachings at SUU are key contributions to her winning this award. Kesar is a valuable asset to SUU and inspires hundreds of females each year through multiple campus initiatives and personalized guidance to her students. She stands as a leader in both higher education and the technology industry.

BUILDING ON THEIR EFFORTS

Not ones to rest on their laurels, professors continue to build on their efforts to increase female interest in STEM. With over 130 students from across southern Utah in attendance, SheTech Explorer Day exposed high school

girls to technology through workshops with tech companies, competitive problem-solving events and networking activities. Led by Dr. Shalini Kesar, associate professor of information systems, SheTech Explorer Day was hosted at Southern Utah University and involved current students, faculty, local and national businesses.

This day-long event included hands-on workshops in science, technology, engineering, and math (STEM). The ultimate goal of SheTech was to expose high school girls to technology in a fun atmosphere, allow them to connect with STEM role models, and to learn about interesting professional and educational opportunities in those fields.



SUU Walter Maxwell Gibson College of Science & Engineering

Programs and Degrees

DEPARTMENT OF MATHEMATICS

<https://www.suu.edu/cose/math/>

BACHELORS

Mathematics - Emphasis in Actuarial Science, B.S.
Mathematics - Emphasis in Pure Mathematics, B.S.
Mathematics Education, B.S.

MINOR

Mathematics - Emphasis in Actuarial Science
Mathematics - Emphasis in Pure Mathematics
Mathematics Education

DEPARTMENT OF NURSING

<https://www.suu.edu/cose/nursing/>

BACHELORS

Pre-Licensure Emphasis, B.S.
RN to BSN Emphasis, B.S.

DEPARTMENT OF ENGINEERING & TECHNOLOGY

<https://www.suu.edu/cose/et/>

ASSOCIATES

CAD/CAM Technology, A.A.S.
Construction Technology, A.A.S.
Electronics Emphasis, A.A.S.
Construction Technology Specialty, A.A.S.
Pre-Engineering, A.P.E.

BACHELORS

Construction Management, B.A.
Construction Management, B.S.
Engineering Technology - CAD/CAM
Emphasis, B.A.
Engineering Technology - CAD/CAM
Emphasis, B.S.
Engineering Technology - CAD/CAM-
Architectural/Civil Design Emphasis, B.A.
Engineering Technology - CAD/CAM-
Architectural/Civil Design Emphasis, B.S.
Engineering Technology - CAD/GIS
Emphasis, B.A.
Engineering Technology - CAD/GIS
Emphasis, B.S.
Engineering Technology - Electronics
Emphasis, B.A.
Engineering Technology - Electronics
Emphasis, B.S.
Engineering, B.S.

CERTIFICATE

Construction Technology
Civil Drafting/CAD

MINOR

CAD/CAM Technology
Construction Technology
Electronics Technology

DEPARTMENT OF COMPUTER SCIENCE & INFORMATION SYSTEMS

<https://www.suu.edu/cose/csis/>

ASSOCIATES

Information Technology Specialty, A.A.S.
All Emphases, A.A.S.

BACHELORS

Computer Science, B.S.
Information Systems, B.S.

MINOR

Computer Science - Teacher
Education Emphasis
Computer Science
Information Systems

MASTERS

Cyber Security and Information
Assurance, M.S. (Online)

Department of Biology

<https://www.suu.edu/cose/biology/>

BACHELORS

Biology - Education, B.A.
Biology - Education, B.S.
Biology, B.A.
Biology, B.S.

MINOR

Biology

DEPARTMENT OF AGRICULTURE & NUTRITION

<https://www.suu.edu/cose/agns/>

ASSOCIATES

Livestock Farm Management, A.A.S.
Equine Studies, A.A.S.
Livestock Management Technical Specialty, A.A.S.

BACHELORS

Agricultural Science & Industry, B.I.S.
Allied Health Emphasis, B.S.
Pre-Dietetics Emphasis, B.S.

CERTIFICATE

Agriculture with emphasis in
Livestock Farm Management

MINOR

Agriculture
Human Nutrition

DEPARTMENT OF PHYSICAL SCIENCE

<https://www.suu.edu/cose/phisci/>

BACHELORS

Chemistry - Teacher Education Emphasis, B.S.
Chemistry - Forensic Emphasis, B.S.
Chemistry - Health Care Emphasis, B.S.
Chemistry - Professional Emphasis, B.S.
Geology - Professional Emphasis, B.S.
Physical Science - Teacher Education Emphasis, B.A.
Physical Science - Teacher Education Emphasis, B.S.

CERTIFICATE

Geographic Information Systems

MINOR

Chemistry
Chemistry Teacher Education
Geography
Geography Teacher Education
Geology Teacher Education
Physics
Physics Teacher Education

PRE-PROFESSIONAL PROGRAMS

See Associated Department of Information

Pre-Allied Health Sciences
Pre-Dentistry
Pre-Medicine
Pre-Optometry
Pre-Pharmacy
Pre-Veterinary Medicine