

Science & Engineering

Year in Review 2019-2020



SUU AWARDED NEARLY \$4 MILLION APPRENTICESHIP GRANT

US Department of Labor provides history-making grant

SCIENCE & ENGINEERING STUDENTS EARN PRESTIGIOUS INTERNSHIPS

Experiences include GE Aviation and Los Alamos Laboratory

SUU NURSING NAMED BEST PUBLIC NURSING SCHOOL IN UTAH

Honor received from Registered Nursing's annual RN Program Rankings

SUU STUDENTS PILOT SKIN CANCER PROJECT WITH AREA COSMETOLOGISTS

Project addresses Utah's record-setting melanoma rate

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SUU AWARDED NEARLY \$4 MILLION APPRENTICESHIP GRANT

US DEPARTMENT OF LABOR PROVIDES CYBER SECURITY PROGRAM ONE OF THE LARGEST
ACADEMIC GRANTS IN SUU'S HISTORY



SUU has been awarded a \$3.98 million grant from the U.S. Department of Labor to provide training in the field of cybersecurity. Coupled with a \$1.7 million match from the private sector, the grant totals more than \$5.6 million.

SUU will use the grant to meet the growing demand for cybersecurity professionals by providing training and education-based courses to apprentices. The first emphasis will be in the manufacturing industry. Private industry partners have committed 1,500 of their employees to participate in the program in Utah, Washington and Oregon.

“This grant is not only a major win for SUU, but also in our efforts to grow the emerging job sectors of the 21st Century,” said Dr. Frank Hall, Dean of the Walter Maxwell Gibson College of Science & Engineering. “This grant will allow us to further increase our footprint in training tomorrow’s cybersecurity professionals.”

SUU applied for the federal grant, along with its academic partner Washington State University. Dr. Tim Ball, Assistant Professor of Information Systems, will oversee administration of the grant. Ball has extensive background working with the federal government and military conducting research and developing tools and techniques for cybersecurity and electronic warfare.

U.S. Senator Mitt Romney spearheaded SUU’s application in Washington, DC. “I was pleased to advocate for SUU’s apprenticeship program to receive this grant, which will support the university’s efforts to expand opportunities in growing sectors in the West,” Senator Romney said. “Apprenticeships are proven pathways to middle and high skilled jobs, and SUU is a leader in equipping apprentices for careers in manufacturing, energy, and cybersecurity.”

SUU was the only university in Utah to receive an award from the Department of Labor’s “Apprenticeships: Closing the Skills Gap” grant.

In SUU’s program, all apprentices will enroll in core cybersecurity courses and, upon completion, receive a professional certificate.

SUU is already home to one of the top cybersecurity programs in the country. The university’s bachelor’s degree in Information Systems with a Cybersecurity emphasis is certified as a Center of Academic Excellence in Cyber Defense Education by the U.S. Department of Homeland Security and the National Security Agency. In addition, SUU’s master’s degree in cybersecurity is ranked in the top 50 nationally and is the only 100 percent on-line cybersecurity master’s in Utah.

HELPING THE NAVAJO NATION DURING COVID-19

SUU, Cedar City civic organizations, and Angel Flight West joined forces to help members of the Navajo Nation who have been severely impacted by the spread of COVID-19. The need for assistance was first brought to light by Dr. Wiley Thuet, an SUU alumnus and medical doctor and his wife Dr. Christina Thuet, a pediatrician.

They have spent the past 4 years working in the Navajo Nation serving the Navajo and Hopi tribes.

In early April, the per capita incidence of COVID-19 in the Navajo Nation surpassed that of all but two states in the United States. It's believed geographic isolation, lack of running water in up to 30 per-



cent of homes, and multi-generations of families living under one roof, has contributed to an unprecedented humanitarian crisis in the Navajo Nation.

Upon learning of the need for help, Rita Osborn, executive director of SUU's Center for Rural Health, recruited SUU Rural Health Scholar (RHS) students who sewed 2500 masks for the Navajo Nation. When word spread on social media, the Cedar City community began offering to do more and the project quickly began to expand.

Joanne Brattain, a friend of SUU and a volunteer with Angel Flight West, a group of pilots who donate their time and aircraft to help with individuals in need of medical treatment, offered her help. Dr. Christina Thuet then created a group, "With Love, From Strangers" to consolidate their efforts.

The Cedar City Rotary Club, Wells Fargo Foundation, the Cedar City Lions Club and local community members began making financial donations to buy items needed by individuals.

are loading those supplies on private airplanes, and volunteer pilots associated with Angel Flight West drop-off the supplies at the Navajo reservation in northern Arizona."

On Friday, May 8, SUU RHS loaded four private planes with \$2000 of supplies donated by the Cedar City Rotary Club. Those goods included bottled water, sanitary supplies and disinfecting wipes.

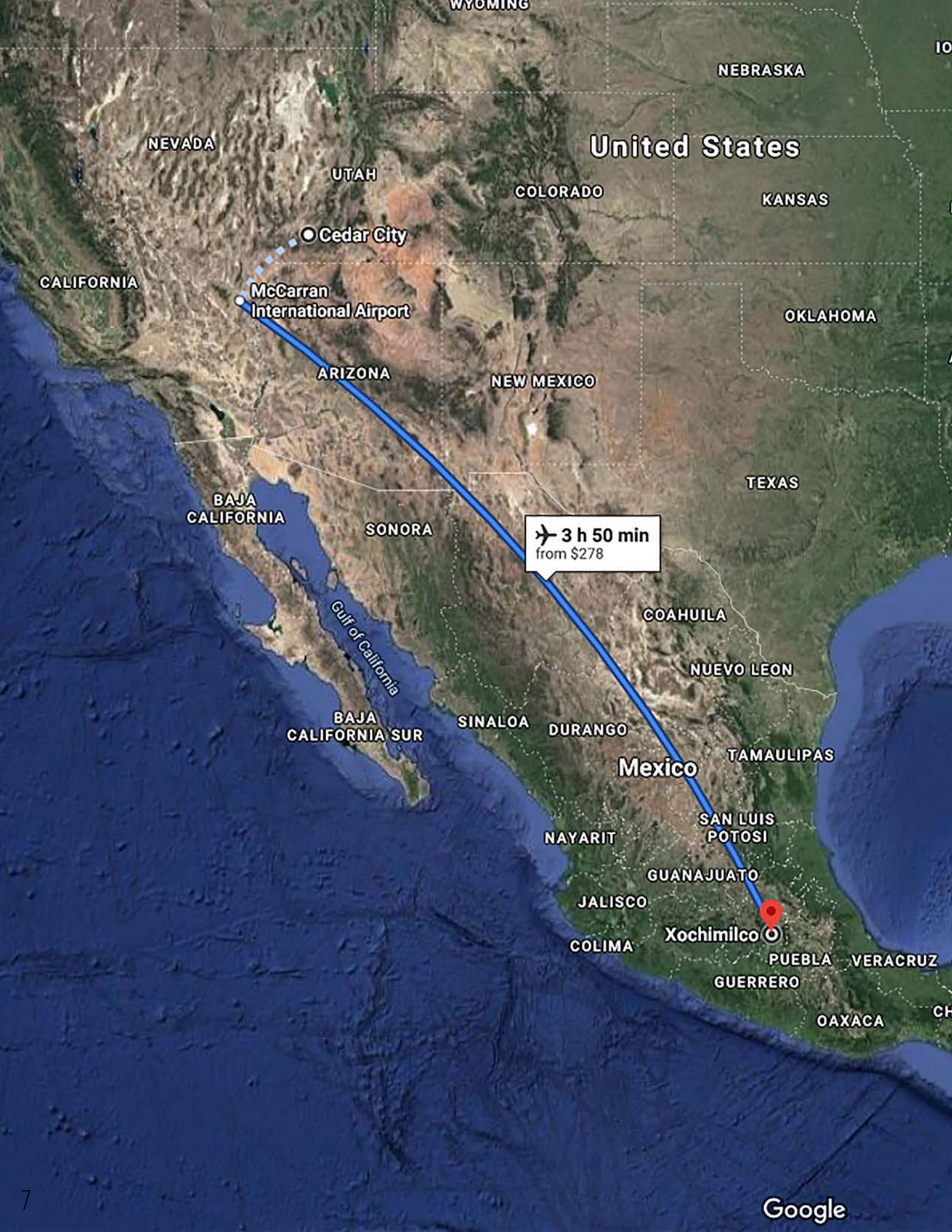
SUU senior Bryan Pearson, a Cedar City native who plans to attend medical school, was one of those volunteers. "During this time of social distancing, it's really hard not knowing where you can serve. Having an opportunity like this is really fulfilling to be able to help those who really need it."

Once the airplanes were loaded, the four flights departed for multiple locations in northern Arizona. Simultaneously, another 11 flights organized by "With Love, From Strangers" and arranged by Angel Flight West, departed from Phoenix and Flagstaff, Arizona. The flights provided urgently



"To make this entire project a success, it takes a community effort," said Osborn. "We're purchasing supplies here in Cedar City that cannot be purchased in bulk, our Rural Health Scholars

needed PPE supplies and items for community members that were distributed between 2 states to Fort Defiance, Gallup, Chinle, Tuba City and Shiprock in the Navajo Nation.



United States

Mexico

✈ 3 h 50 min
from \$278

SUU NUTRITION MAJOR TAKES HEALTH SUPPLIES TO MEXICO

While serving a religious mission in Xochimilco, Mexico, Southern Utah University Nutrition major Kyler Kirkland recognized a need for medical supplies and services in areas that didn't have regular access to them. After meeting with leaders of a nonprofit that held a small health clinic in Xochimilco, Kirkland realized that he could make a difference and began gathering both resources and volunteers.

"The people of Xochimilco were the primary focus," said Kirkland. "It's an underserved community, and it was an incredible opportunity to be able to provide the local community with vaccinations, immunizations, vitamins, antiparasitic drugs, as well as blood pressure and diabetes checks."

Working with accounting major and fellow SUU senior Jesse Jones, Kirkland was able to get doctors, psychologists, and dentists from Cedar City and Mexico to donate medical supplies and their services to the clinic.

"Planning an international project required a lot more work than I thought it would," said Kirkland. "Once the local clinic and nonprofit leaders agreed to work with me, I had to find other professionals willing to come and help. It was difficult coordinating a project from so far away and in another language, I had to learn a lot of new words and phrases in Spanish."

In addition to coordinating the donations with the clinic, Kirkland was able to go to Mexico and assist with handing out flyers, dental kits, and toys to the community. The project gathered so many supplies that the students were able to share extra supplies in a neighboring community.

"I am a pre-med student and being able to work with all the healthcare volunteers and provide the people with free medical supplies only solidified my love and passion for medicine," said Kirkland. "At the end of my project, it really showed me the importance of always looking for opportunities to serve others. The experiences you have while giving service are incredible."



DID YOU KNOW?

SUU has earned the Carnegie Community Engagement Designation for a decade and is among fewer than 1% of higher education institutions nationally to receive it.



AGRICULTURE EDUCATORS

DEPARTMENT ADDS AGRICULTURE EDUCATION
EMPHASIS

In response to the high demand for agriculture teachers, the Department of Agriculture and Nutrition at Southern Utah University has added a new agriculture education emphasis to its program for students looking to become agriculture educators at the high school level.

“When we started looking into this new emphasis, there were over seven high schools in the state of Utah that could not find agriculture teachers,” said Dr. Randall Violett, Associate Professor of Agriculture. “And nationwide there is a shortage of agriculture educators.”

According to the American Association for Agriculture Education, Utah averages a shortage of 10 school-based agriculture educators every year. There is a high demand for agriculture teachers in terms of demographic location. More high schools are wanting to offer agriculture programs, but are unable to find teachers.



“Before we created this emphasis the only place in Utah that students could get trained, licensed and endorsed as agriculture teachers was at Utah State University,” said Violett. “And we have a lot of students that don’t want to go that far north.”

Consequently, SUU agriculture graduates, who wanted to teach would have no other choice than to pursue the alternative licensure route, many having to start teaching while still trying to get licensed.

“Our students know their agriculture when they leave but they’ve never had a student teaching experience and never had a methods experience,” said Violett. “We have a reputable College of Education and a reputable agriculture degree and so we decided to just bring them together.”

Students who are interested in pursuing a degree in agriculture education will need to apply and be

accepted into the College of Education and Human Development to become licensed as secondary educators.

DID YOU KNOW?

The Department of Agriculture and Nutrition Science also offers areas of focus in agribusiness, plant science, animal science, range management, equine science, natural resources, horticulture, and pre-veterinary medicine. The program focuses on helping students become qualified for a wide variety of agriculture industry-based careers through internship opportunities and hands-on experiences.

SUU STUDENTS PILOT SKIN CANCER PROJECT WITH AREA COSMETOLOGISTS

SUU RURAL HEALTH SCHOLARS, HAIRSTYLISTS AND BARBERS WORK TOGETHER TO ADDRESS UTAH'S
RECORD SETTING MELANOMA RATE

With Utah suffering the highest melanoma rate in the United States, Southern Utah University (SUU) students are now helping rally a first line of defense: beautician who regularly look at people's scalps, where the deadliest melanomas often form.

SUU students spent months working on a new research project to discover what type of training hairdressers in southern Utah receive in recognizing skin lesions. SUU donor Stephen W. Gibson had the idea to start this project after his beautician found a lesion on his scalp.

"This project started after my hairdresser informed

me about a suspicious-looking lesion on my own head," said Gibson. "I went to the dermatologist, and he found that my lesion was indeed melanoma, which he surgically removed. Without my hairdresser's tip, I wouldn't have discovered my cancer until later, by which time it could've metastasized and become deadly. If we can help save even one additional life by encouraging hairdressers, it's worth the effort."

Gibson wanted to see if hairdressers were being trained to recognize skin lesions on their clients and enlisted several SUU students to help with the project. Those students, Brandon Johnson, Abigail Bishop, Andrew Jones, and Colin Rosand-



er, are all members of the Rural Health Scholars program.

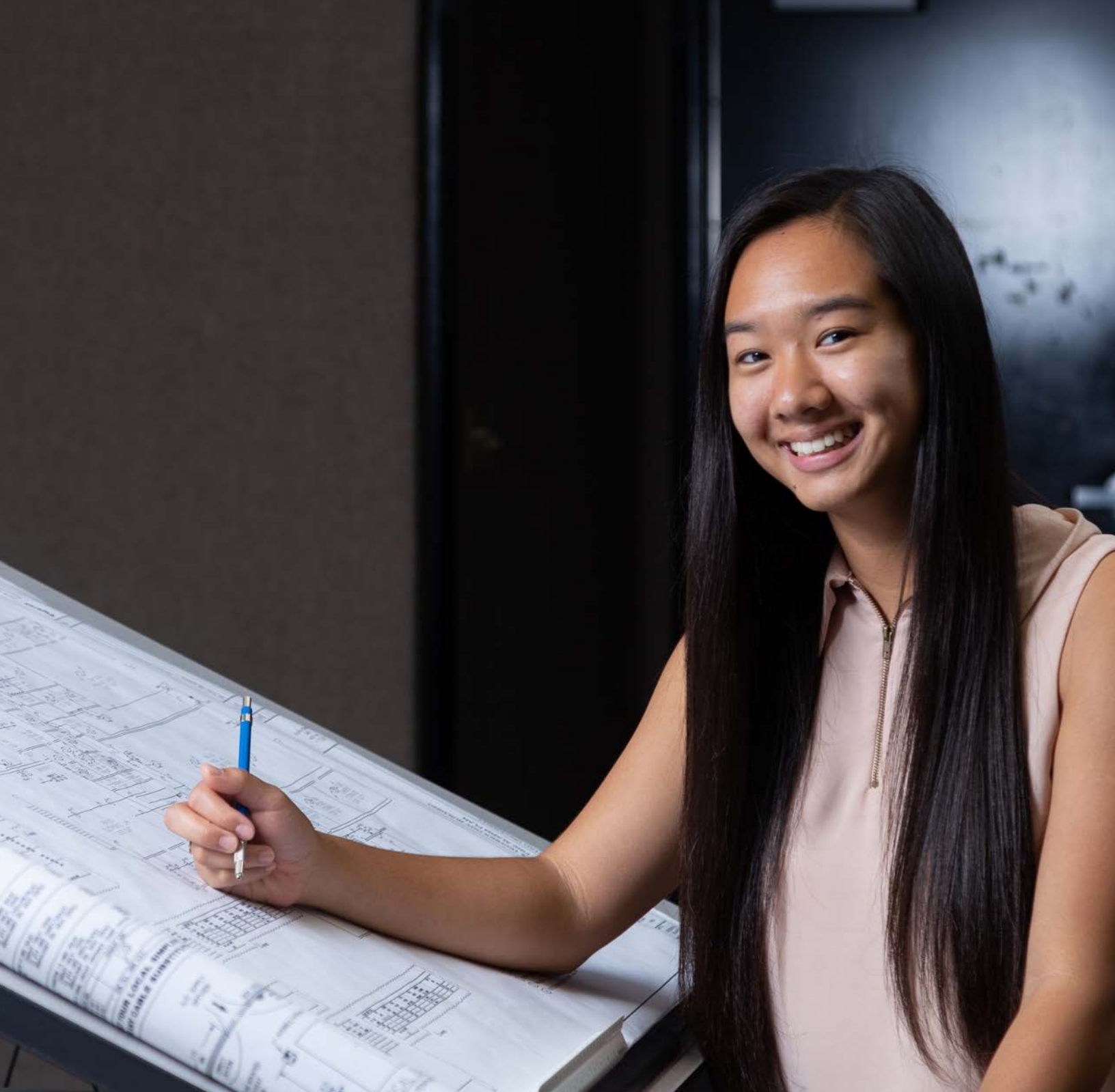
“I heard about this project through the Rural Health Scholars which I have been involved with since I was a freshman. Skin cancers are very common in Southern Utah, and I thought involving hairdressers and barbers in the detection process was a really novel idea,” said SUU student Andrew Jones. “Stephen Gibson’s vision was exciting, so I decided to contribute to the cause along with some classmates. Overall, it has been a good learning experience, and the information we’ve collected is insightful for education and awareness purposes. I definitely have a better appreciation for the research behind so many amazing health initiatives.”

Throughout the summer, the students -- led by Johnson (pre-medical student) -- conducted 83 surveys at hair salons and barber shops throughout Iron and Washington counties to evaluate the knowledge hairdressers have in recognizing skin

lesions. Bishop (pre-medical student), Rosander (pre-dental student), and Jones (pre-medical student) took part in creating the survey and contacting hair salons encouraging hairdressers to complete the “Eyes on Cancer” certification. The certification teaches beauty professionals how to spot skin lesions and refer clients to doctors.

In one example of the success of the outreach, all of the cosmetologists at Hair Nation in Cedar City earned their certification. When the owners of Hair Nation were asked why they chose to have everyone at their salon certified they said, “We felt that we the stylists are the only ones that see the scalp on a regular basis. We love our clients and want to help them any way we can.”

Beautician or barbers looking to receive the “Eyes on Cancer” certification, can begin the process by going to the following website: <https://eoc.teachable.com/p/eoctraining>. The training is free of charge.



I'll be working with the mechanics of the engines, such as studying their aerodynamic and thermodynamic aspects. Which is cool because that is a lot of the material that I'm learning right now, so learning how to apply it in an airplane engine is something that I'm really excited about."

- SABRINA KIM, GE INTERN

ENGINEERING & SCIENCE STUDENTS EARN PRESTIGIOUS INTERNSHIPS

EDITOR'S NOTE

Due to the COVID-19 Pandemic, many internships have been postponed until Summer 2021. This article celebrates a few of the students and the internships awarded during the 2019-2020 academic year, regardless of whether the individual internship has been postponed or is moving forward during Summer 2020.

ENGINEERING STUDENT ACCEPTS INTERNSHIP WITH GE AVIATION

After attending GE Aviation's Annual Female Leadership Summit, Sabrina Kim, a junior in SUU's Mechanical Engineering program, recently accepted an internship with GE Aviation. This summer Kim will be working with the GE Aviation team studying aerodynamics and thermodynamics.

The Female Leadership Summit seeks to identify and recruit highly talented minority female students from a wide spectrum of backgrounds and SUU's female mechanical engineering students

were encouraged to apply. Kim applied and was selected to attend the conference, giving her the opportunity to attend leadership panels, professional development seminars, and to meet with employees from GE. Being in such a supportive environment was inspiring to Kim.

"When we're in our classes sometimes we don't want to say things that would have the males in our class judge us or think of us in a certain way," said Kim. "When we were only around females none of us held back and we could completely be ourselves."

At the end of the leadership summit, attendees were given another opportunity, an interview for 2020 internships with GE Aviation. A highly competitive program, Kim was among only 28 out of 700 applicants who were selected for positions.

"This is a pretty unique experience because I feel like across the world it's pretty common that engineering is a male-dominated field of study," said Kim. "I'll be working with the mechanics of the engines, such as studying their aerodynamic and thermodynamic aspects. Which is cool because that is a lot of the material that I'm learning right now, so learning how to apply it in an airplane en-

gine is something that I'm really excited about."

The GE internship program has a few different options for different majors. As a mechanical engineering major, Kim listed her preference for working with the design of the engines. These internship opportunities allow students to explore their future career field while doing impactful work and working with others to solve real-world problems.

"Sabrina has superior skills in doing analytical and experimental work," said Dr. Ali Siahpush, Associate Professor of Engineering. "As a person, she is well balanced, intelligent, and self-disciplined. She is mentally and physically tough, and she sets the pace and expectations for other colleagues and raises the standards."



SUU STUDENT EARNS BIG BANG INTERNSHIP AT LOS ALAMOS LABORATORY

SUU student Skyler Clark recently earned a prestigious internship with the Los Alamos National Laboratory. During his internship, Clark will be working alongside some of the brightest minds in the nation while learning more about the early universe.

"My assignment will be to take the chemistry and water networks, and run them inline with standard cosmology code," Clark explained. "I will then run large scale simulations of the universe to

find where water, and potentially other chemical building blocks of life, formed in the first one-billion years after the big bang."

Clark is majoring in Computer Science and minoring in Chemistry at SUU. He is working towards a goal of becoming a physician-scientist. This summer, Clark will be mentored by SUU professor Brandon Wiggins, and will also work alongside Los Alamos Physicist Joe Smidt.

"Skyler has an impressive 3.97 GPA and excelled in organic chemistry," said Brandon Wiggins, Assistant Professor of Physics, "This, combined with his education in our top-notch Computer Science department, has prepared him to carry out parallel calculations, and set his application apart."

During this internship Clark will primarily focus on astrochemistry, specifically dust and methane formation in galaxies during the first one-billion years after the big bang. This internship provides a unique opportunity for Clark to use his research findings to address important questions concerning building blocks of life.

"SUU doesn't just provide opportunities, but it showed the many doors available to me and actually opened them, allowing me to then do what it takes to step through," Clark said. "The high standards of education and quality of the faculty are why I have been able to push myself further each day."

The Los Alamos National Laboratory (LANL) delivers breakthrough research with a focus on safe, efficient, and effective operations. Several other outstanding SUU students and graduates have received the honor of interning or working for LANL.

IIC PROVIDES RECORD NUMBER OF INTERNSHIP PATHWAYS FOR SUU STUDENTS

SUU's Intergovernmental Internship Cooperative continued its tradition of excellence by providing 222 students with internship opportunities to prepare them for careers as public land stewards. Approximately 60% of those internships were filled by Science & Engineering majors.

Over the summer of 2019, 20 total agencies offered 42 paid internship categories throughout southern Utah, northern Arizona, and eastern Nevada. Students accumulated 121,792 hours of professional development and leadership opportunities.

“The experience you get as an IIC intern makes a huge difference,” said Briget Eastep, Director of Outdoor Engagement at SUU. “We recently asked the internship cohort from five years ago what they are doing now and 67% are still working in the field their internship was in.”

The IIC is the premier national partnership model in youth leadership and educational development for public land stewardship. SUU partners with various regional and federal land management agencies, as well as local Native American tribes. The valuable work that interns perform creates a sustainable and effective network of land management and education partners.

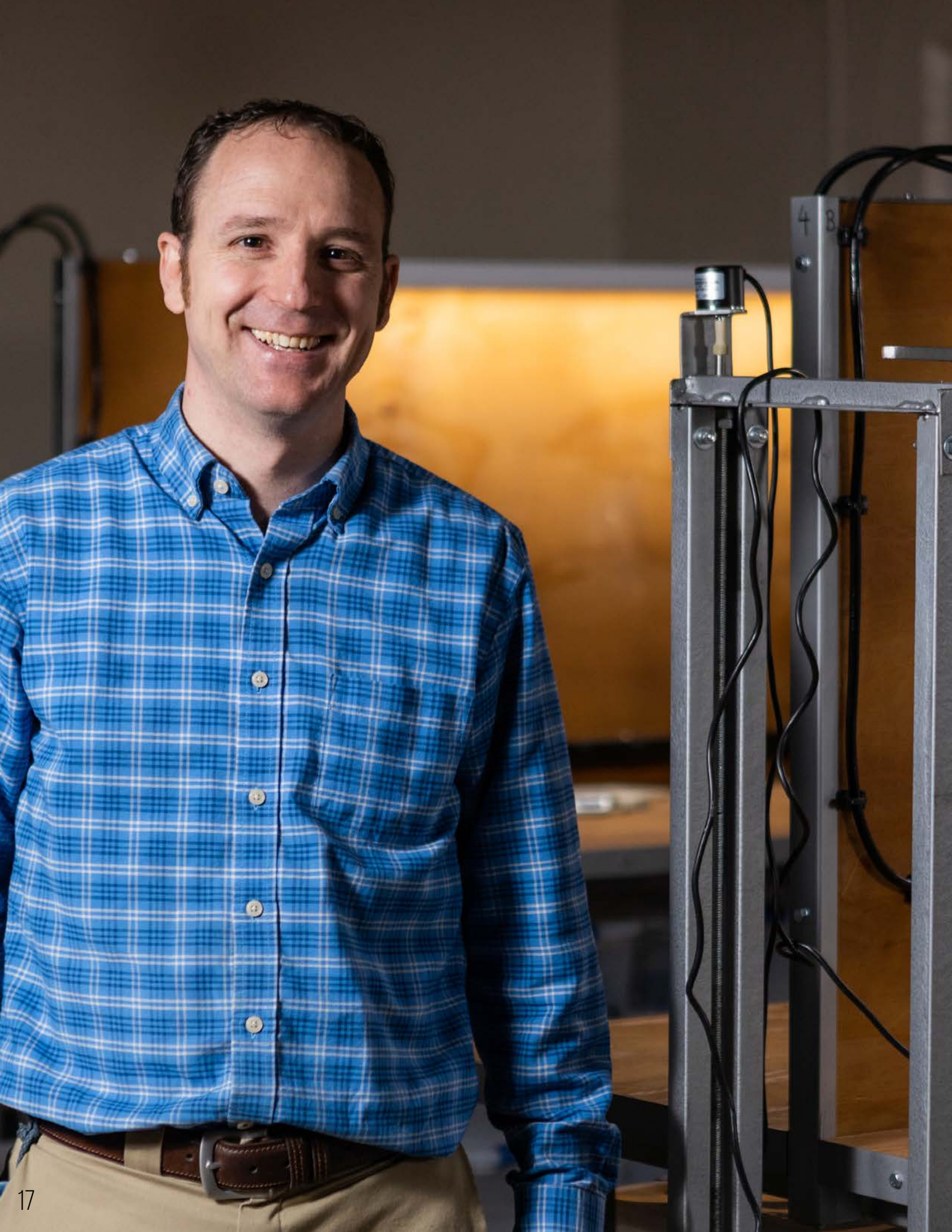
“The IIC is what ultimately made SUU stand above other universities when I was deciding where to attend,” said student Parker Vesely. “I have been given countless opportunities to grow as a profes-

sional and as an individual throughout my time in the program and have made lasting memories and friendships with fellow interns and agency professionals. I would highly recommend an IIC internship to other students passionate about public lands or the variety of disciplines involved in their management.”

Federal agencies represented the largest share of interns, 83% of students spent their summer learning with the National Park Service, United States Forest Service and the Bureau of Land Management. Available internships are designed for college students, high school students, and recent graduates. These unique internships provide students the needed skills and academic credit to pursue potential career opportunities as well as the chance to explore fields of their own interest.

The IIC places students on career pathways for high demand positions across all facets of public land management. Internships are offered in fields such as biology, accounting, wildlife, natural resources, maintenance, engineering, interpretation, recreation, administration and much more.





RETHINKING AND REDESIGNING THE ENGINEERING CLASSROOM

SUU is proud of its dedication to hands-on learning. That's why it's no surprise that Dr. Jacob Bishop, Assistant Professor of Engineering, has made several innovative changes and contributions to the courses and labs in the Engineering Program with the purpose of including more opportunities for hands-on learning.

"When I saw 18 students standing around while one or two controlled a piece of equipment, I knew there was a problem," said Dr. Bishop. "Most testing equipment is designed for research or industrial materials certification, not for education. We needed equipment that was built with education as the central goal. This meant lowering the cost so that we could afford to have more machines in the hands of students. It also meant making equipment that was manually controlled so students could develop a feel for what they were doing."

Dr. Bishop budgeted, designed, and manufactured five new work stations and five universal testing machines for the courses Strength of Materials (ENGR 2140) and Strength of Materials Lab (ENGR 2145). Universal testing machines are used to test the strength of materials by breaking them. Normally one of these machines costs upwards of \$40,000-\$50,000, but Dr. Bishop managed to manufacture five for \$1,000 apiece. These machines, designed for education, provide more opportunities for students to have hands-on learning experiences in their labs.

"I'm extremely happy with what the new materi-

al testing machines have done for us," said Dr. Bishop. "The classroom is more interactive than ever, and students aren't afraid to get their hands dirty. The equipment is simple enough to use that students often use it for projects in other classes such as instrumentation or Capstone Design. The Rocket Club and Concrete Canoe Team have both used it to test components for their projects."

Dr. Bishop has also redesigned the Strength of Materials course and lab to be more writing intensive. The goal of the course redesign is to prepare the students to write and format lab reports correctly and professionally.

The Engineering Program has worked with the SUU Writing Center to staff a writing fellow from the Engineering program. The Engineering Writing Fellow is available to help engineering students specifically with their lab reports. The current Engineering Writing Fellow is Sabrina Kim, a junior in SUU's Mechanical Engineering Program.

"While a lot of engineering courses focus on developing technical skills, Dr. Bishop's course really allows students to improve on their scientific writing skills," said Kim. "Because of this course, I have gained a more positive relationship with writing in the sciences. Working as a Writing Fellow not only helps me to share that positive relationship with the students in the class, but also helps them to apply both the technical and writing skills to their work. To me, being able to incorporate both is extremely beneficial as an engineering student."

CHEMISTRY MAJOR HONORED AS COSE 2020 VALEDICTORIAN

Chemistry major Mariah Clayson has always loved to learn new things and take on challenges. This determined attitude defined her college education and led to her being named the 2020 Valedictorian for the College of Science and Engineering at Southern Utah University.

Originally from Kanab, Utah, Clayson initially wanted to attend SUU because it was close to home, but stayed because of the wonderful professors and friends that she met along the way.

“Every professor in the Physical Science department has carried me through my degree in some way or another,” said Clayson. “That doesn’t mean that they ever allowed me to slack off, but they spent hours with me answering questions and giv-

ing me encouragement. It was so comforting to feel like I had someone in the ring with me.”

Often when Clayson was feeling overwhelmed by her courses or the demands of college, her professors would take the time to talk through things.

Because of her love for both the theoretical and practical side of chemistry, Clayson is torn between teaching or working in the industry. Since Clayson has yet to decide on a career path, she plans to take time away from school to work for a chemical company before pursuing a master’s degree.

Clayson believes the experience she gained during her two years working at the



SUU Water Lab will be invaluable to her as she enters the workforce. Clayson will also take the other skills she has learned at SUU with her, as she moves on to bigger things.

“SUU has helped shape my character by always challenging me to push the limits,” said Clayson. “Every year, my classes have gotten harder, it’s seemed more and more impossible to keep up. But after the semester was over, I was somehow able to do it and my ability to handle it had increased. I now know that even if things seem impossible, I’ll get through them. Maybe not perfectly, but I will get through them.”

Clayson advises incoming students and current T-Birds to try to be flexible.

“Getting a degree takes a long time and you may go through different phases of your life during that time,” said Clayson. “Sometimes, it is important that I give all of my energy to my school work and getting ahead in life. However, other times required me to slow down and find more balance in my life.”



STUDENT EARNS 1ST AT NATIONALS

In just his second year of competing, SUU student Keith Mankle took first place in Machine Tech at the National SkillsUSA Championships, earning gold for SUU. Consisting of competitive events that display the skills and knowledge of students pursuing a technical education, each event includes two knowledge tests, as well as hands-on testing in soldering, breadboarding, and troubleshooting.

“The championship gives students real-world experience,” said Jamie Campbell Administrative Assistant for the Engineering & Technology Department. “They’re given a project to get done in a certain amount of time and they have to do it accurately.”

Campbell attributes Mankle’s success to his perseverance. Last year Mankle just missed placing, so this year he was committed to winning.

“I didn’t have a lot of experience in breadboarding last year,” said Mankle. “So this year I was deter-



mined to do better and not mess up that portion of the test. To the point where I was the only one who actually completed it. That's what started to put me ahead."

SUU has missed out on gold in recent years and Mankle was determined to earn back that title for the school. Because of his improved performance over the previous year, Mankle felt that he would at least place, but he was shocked and overjoyed at being awarded first place.

As a retired Marine and father of four, Mankle enrolled at SUU to pursue a career change. While at SUU Mankle has enjoyed his experience, but it hasn't always been easy. Mankle has been able to use his support group to find success at SUU.


"Relearning things is the hardest part of coming back," said Mankle. "I feel like I'm doing double duty in comparison to the other students. But the professors at SUU tend to help you. They're not

trying to give you a handout, they're trying to set you up for success."

"Keith's success shows that our students are well trained," said Campbell. "And they're given the skills and knowledge that they need to be very successful in the careers that they choose."

After graduating with his bachelor's degree, Mankle hopes to further his education by attending graduate school.

DID YOU KNOW?



The SUU Electronic Engineering Technology program is accredited by the Engineering Technology Accreditation Commission.



PROFESSOR RECEIVES ORGANIC SYNTHESSES GRANT TO FUND STUDENT RESEARCH

PROFESSOR SUCCESSFULLY EARNS NATIONALLY COMPETITIVE GRANT TO AID IN STUDENT RESEARCH



Southern Utah University Chemistry professor Dr. Nathan Werner recently received a grant from Organic Syntheses allowing him to work with Chemistry major Luke Shaner to conduct a ten-week study to develop a chemical method to synthesize potential beta-lactam antibiotics in a single step.

The nationally competitive Organic Syntheses grant program provides summer research grants for faculty at primarily undergraduate institutions. The grants award \$8,000 to a faculty member who then selects an undergraduate coworker from among the students in their department.

“Students typically must volunteer their time to conduct undergraduate research and gain the experience that is required for competitive graduate programs,” said Dr. Werner “It’s really challenging for some students because, how do you pay your bills when you’re volunteering 40 hours a week? It is really special to get paid to do undergraduate research.”

The grant stipulated that a student help conduct the research, and encouraged grant recipients to choose students that were aspiring professional chemists. Dr. Werner offered the position to Shaner because he was an excellent Organic Chemistry student and skilled in lab work.

“Sometimes you go into different fields and you learn all this information in school but you have no idea what the actual job will look like,” said Shaner. “Everything I was doing was very useful for jobs in the future and graduate school.”

Dr. Werner applied for the grant knowing that his idea was solid and that it would be found interesting, but knew that it was a nationally competitive grant and would only be awarded to a few applicants.

“Excellent chemists at prestigious institutions receive this award,” said Dr. Werner. “I am very humbled.”

DID YOU KNOW?

The Walter Maxwell Gibson College of Science & Engineering provides several grants to assist students in research, including the L.S. and Aline W. Skaggs Research Fund, Undergraduate Research and Scholarship Program (UGRASP) and the Gibson Research Fellowship.

ROCKETRY TEAM PLACES 3RD IN INTERNATIONAL COMPETITION

In addition to presenting at the annual Intercollegiate Rocket Engineering Competition (IREC), SUU's student rocketry team ranked 3rd out of 16 teams in their category (10k-SRAD-Solid Motors), and 7th out of the 107 scored teams in the competition.

"In past years we have had similar rankings within our category, but this is a huge jump up in over-all performance," said Dr. Scott Munro, RocketBirds faculty advisor and Associate Professor of Engineering at SUU. "The team has worked hard to improve their scores in areas where we have been deficient in the past and it is paying off. I would like to commend the team on their incredible work."

IREC, also known as the Spaceport America Cup, is an international rocketry competition with over one hundred universities participating. Universities such as Princeton, Yale, and Cornell have competed in the competition.

"The reason I started participating in this competition is because it looks phenomenal on an academic resume," said student RocketBird Matthew Crawley. "When we are invited to speak with people from the aerospace industry, 100% of them tell us to continue working on the rocket team. It is the greatest thing we can do to improve our future positions after graduation."

The Summer 2019 competition was held in the New Mexico desert and the RocketBirds were the eighth team in the competition to launch.

The team's rocket, standing eleven feet high and weighing in at 65 pounds, reached an altitude of 10,600 feet above the ground and the recovery system worked as designed.

"The competition provides a unique learning experience that is difficult, if not impossible, to provide in the classroom," said Munro. "The project is long term and students take it from concept through fabrication and flight. It requires teamwork, configuration management skills, and communication skills. Additionally, students manage the schedule and budget."

The RocketBirds were among 26 schools invited to present at the competition this year. They presented on propellant formulations and the benefits of low viscosity. Low viscous propellants reduce air bubbles in the mixing and casting process, and make launch simulations more than 99% accurate when compared to what's produced. SUU is one of the only schools that manufacture such a propellant for their rocket.

"SUU has been dedicated to giving students the opportunity to participate in real engineering projects," said student RocketBird Johnny Webster. "Something that sets us apart is the size of our department. With lower budgets than almost all teams, the RocketBirds do an excellent job without breaking the budget. We've done cost breakdowns in the past I believe and our team is one of the best performing for the price of the project."





STUDENTS PRESENT AT AMERICAN CHEMICAL SOCIETY'S NATIONAL MEETING

SAN DIEGO MEETING INCLUDED CHEMISTRY PROFESSIONALS AND NOBEL PRIZE WINNERS FROM ACROSS THE UNITED STATES OF AMERICA.

SAN DIEGO



As part of ongoing research opportunities, five Southern Utah University chemistry students presented at the American Chemical Society's (ACS) national meeting. Held in San Diego, students traveled with chemistry professors Dr. Chris Monson and Dr. Nathan Werner to the convention. With the reputation of being a premier chemistry venue for presenting research, the SUU chemistry program makes it a priority to attend.

"Depending upon the meeting, there is somewhere between ten and twenty thousand chemists who all get together and have oral presentations and poster presentations," said Dr. Monson. "It's basically people exchanging what they've done in research to let everybody know: here is some of the latest and greatest stuff."

Working with Dr. Monson, students Mariah Clayson and Madison Evans presented a poster on a more cost-effective device for sensing oxygen in low oxygen environments. And student Ruth Hunter presented on a new technique that could prove useful in the medical field and make drug testing easier.

"It's the best chemistry conference and the biggest, in that it has the most people there," said Dr. Monson. "You walk by and you're like hey that person won a Nobel prize, and that person won a Nobel prize."

Dr. Werner worked with students Garrett Ruesch and Sydney Rowley. They presented research on new ways to make a class of molecules that are important in the preparation of pharmaceuticals.

Dr. Werner believes such experiences can be life-changing for students. These opportunities are beneficial for undergraduate students as they interact and meet with accomplished chemists and build a sense of community. The students were also able to explore options for graduate schools and job opportunities in the field.

"The ACS conference was a wonderful experience," said Evans. "Not only was I able to present my own research with my research group, but I was able to see many research projects from students across the nation."

"The ACS conference was a great experience where we were able to network and hear about the latest research in chemistry," said Clayson.

DID YOU KNOW?

SUU offers four bachelor's degrees in chemistry: forensic, health care, professional, and teacher education.



Southern Utah University was named the best public nursing school in Utah by Registered Nursing's annual RN Program Rankings.

Registered Nursing ranks schools based on the support provided to students as they move toward licensure and beyond. The top five are decided based on current and historic NCLEX-RN pass rates, an exam is used by state boards to determine student's competency and is required for licensure.

"We are pleased to have the success of our program and thus our graduates recognized by RegisteredNursing.org," said Dr. Donna Lister, Chair of the Department of Nursing at SUU. "Our graduates have continued to pass the NCLEX-RN on the first try at a 95% or higher rate. They have gone on to establish successful careers as registered nurses throughout the country and the world."

NURSING #1 IN UTAH

SUU NAMED BEST PUBLIC NURSING SCHOOL IN UTAH



The rankings highlighted SUU's emphasis on communication, critical thinking, and problem solving, as well as the integral elements of ethics and patient care that are incorporated into the practical and theoretical components of the Bachelor of Science in Nursing program.

"Most of the hospitals in southern Utah now have nursing leadership from our graduates," said Dr. Lister. "We are thrilled at the positive impact of our graduates as they practice the profession of nursing."

SUU's Department of Nursing strives to prepare its graduates to not only succeed in their field, but excel and benefit others with their skills. The program provides learning opportunities that engage students in a comprehensive program of classroom and experiential learning that emphasizes caring, critical thinking, patient safety, ethical decision making, and communication.

DID YOU KNOW?

The baccalaureate degree in Nursing at Southern Utah University is accredited by the Commission on Collegiate Nursing Education (CCNE) in Washington, D.C. and approved by the Utah Division of Occupational and Professional Licensing.

\$1 MILLION TO FIGHT OPIOIDS

Southern Utah University has been awarded a federal grant to help battle the Opioid epidemic impacting rural America. The U.S. Department of Health and Human Services (HHS) through the Health Resources and Services Administration (HRSA) awarded nearly \$1 million to SUU's Utah Center for Rural Health. This investment will enable the HRSA-funded rural organizations to establish and expand access to integrated substance use disorder and mental health services.

The award supports HHS's Five-Point Opioid Strategy, introduced under President Trump in 2017. The number of patients receiving medication-assisted treatment (MAT) for opioid addiction at HRSA-funded health centers increased 142 percent from 2016 to 2018 and the number of patients receiving buprenorphine, a common form of MAT, has increased 28 percent over the last four years.

"Health centers and behavioral health providers are on the front lines of the fight against the opioid crisis and substance abuse, especially in rural communities," said HHS Secretary Alex Azar. "With our evidence-based strategy, HHS is working to support local communities in fighting back against substance abuse, and our united efforts are yielding results. Together, we can end our country's opioid crisis and lay a foundation for a healthier country where every American can access the mental healthcare they need."

80 rural consortia received RCORP-Implementa-

tion awards of \$1 million each to implement a set of prevention, treatment, and recovery activities.

At SUU, the Utah Center for Rural Health received a one-year planning grant from HHS to develop a consortium in three Utah counties that are among the nation's most vulnerable. The three counties, Carbon, Emery, and Beaver, have suffered tremendously with the opioid crisis. The consortium created brought together rural entities with the support of statewide organizations working on these issues. That planning grant established the Utah Rural Opioid Healthcare Consortium that has convened rural summits over the past year, assisted healthcare providers achieve training and built networks of resources for rural community members.

"The grant will give the Consortium the necessary funding over the next three years to better equip rural healthcare providers and organizations to help provide services equal to what patients may find in urban areas," stated Rita Osborn, executive director of the Center for Rural Health and principal investigator for the grant. "For example, transportation is a huge barrier for our rural patients. Some of this grant will provide transportation vouchers. Another area of improvement will be the training of peer coaches who support patients recovering from substance abuse."

"HRSA programs play a key role in the effort to battle the nation's opioid crisis," said HRSA Acting Administrator Tom Engels. "From implementing and expanding substance use disorder services at HRSA-funded health centers to increasing support and training to our nation's behavioral health workforce to improving access to treatment in rural areas, today's announcement demonstrates the Administration's commitment to ending this crisis."

To learn more about HRSA's work combating the opioid crisis, visit HRSA's Opioid Crisis page or <https://www.suu.edu/ahec/urohc>.



UTAH RURAL HEALTH STAR

SUU's Rita Osborn was named as a National Organization of State Offices of Rural Health's (NOSORH) Community Star for the state of Utah. Published each year, the collection of Community Star stories honors those working in rural health and making a difference in the communities they serve.

"These stories illuminate the commitment, compassion, resourcefulness, innovation, and creative collaboration that is the real Power of Rural," said Teryl Eisinger, NOSORH Chief Exec-

utive officer. "The Community Stars selected to feature this year are the faces beyond the data. They are a picture of the positive aspects of life in rural America."

As the Executive Director of both the Utah Center for Rural Health at SUU and the Southern Utah Area Health Education Centers program, Osborn's goal is to expand access to rural health through education and workforce development. During her time in the industry, she has secured more than \$4.2 million in grants and contract funding to support her goals.

"I'm humbled and honored to accept this award and share it with the many partners that we have developed in rural Utah to better the quality of health for those who live here," said Osborn. "Increasing the opportunities for better healthcare, including expanding our health workforce has been my passion."

AWARD WINNING FACULTY

THE SUU WALTER MAXWELL GIBSON COLLEGE OF SCIENCE & ENGINEERING IS KNOWN FOR EXCELLENCE IN EDUCATION. THIS YEAR, THE NORTH AMERICAN COLLEGES AND TEACHER OF AGRICULTURE AND SUU RECOGNIZED SEVERAL PROFESSORS FOR THEIR EFFORTS.

SUU PROFESSOR RECEIVES INTERNATIONAL TEACHING SCHOLAR AWARD

[Dr. Dean Winward](#), a long-standing Professor of Agriculture at SUU, was given the NACTA Teaching Scholar Award at the Annual Conference of the North American Colleges and Teachers of Agriculture (NACTA). Winward was recognized for this competitive award for outstanding teaching and scholarship in the profession. He is the first person from a Utah institution to receive this prestigious award.

Due to the competitive nature of the award, Winward was surprised and honored to receive it. When asked why he believed he was the selected nominee, Winward explained that besides classroom performance, the award considers other

contributing factors and he has been involved in many agriculture-related activities

“It’s a big award, not just for me but for the institution as well,” said Winward. “I hope it’s a reflection of the kind of career I’ve had and shows that I enjoy doing what I do. I get to teach wonderful students and I work with great colleagues.”

In addition to teaching accomplishments, the award recognizes scholarly work and demonstrated teaching influence beyond a professor’s campus. Winward has made several presentations at NACTA and other meetings and has involved students in numerous research opportunities.

“One of the ways I learn is from hands-on experience,” said Winward. “I try to have those same hands-on learning experiences with my students.”

Winward also believes in the old adage: people don’t care how much you know until they know how much you care.

“I care about my students, my colleagues and the field of agriculture,” said Winward. “I want to see my students succeed. I try to approach learning as more than just getting a grade, but instead, getting an education, and giving students the tools they need to be successful, not just in academics, but in life as well.”

Winward believes teamwork is what has brought success in his field and is grateful to the University and the agriculture community for their support.

NACTA is an international organization that focuses on promoting and recognizing excellence in teaching agriculture within the setting of higher education. Members of NACTA are from two-year and four-year colleges, public and private, and have a common bond of teaching agriculture and related subjects.

SUU OUTSTANDING EDUCATOR

The Outstanding Educator Award recognizes full-time faculty for demonstration of outstanding



teaching effectiveness; scholarly activity; peer respect from fellow colleagues; sincere interest in students; and professional commitment and service to others and the University overall. Congratulations to this year's recipient [Dr. Scott Munro](#), associate Professor of Engineering.

SUU DISTINGUISHED SCHOLARLY/CREATIVE ACTIVITY AWARD

The Distinguished Scholarly/Creative Activity Award recognizes faculty members for distinguished academic achievement in scholarship, which is defined by scholarly and/or creative work that has been peer-reviewed and judged to be superior. Congratulations to this year's recipient [Andrew Misseldine](#), Associate Professor of Mathematics.

SUU DISTINGUISHED EDUCATOR AWARD

This award is to recognize full-time faculty for distinguished teaching effectiveness; professional commitment; demonstrated interest in students; and service to others and the University overall. Congratulations to this year's recipient [Dr. Rachel Bolus](#), assistant professor of biology.

SCIENCE & ENGINEERING FACULTY OF THE YEAR

- Agriculture and Nutrition Science: [Artis Grady](#)
- Biology: [Sam Wells](#) and [Dr. Roger Gold](#)
- Computer Science & Information Systems: [Dr. Gary D. Cantrell](#)
- Engineering & Technology: [Mohamed Askar](#)
- Nursing: [Shane Yardley](#) and [Suzie Campbell](#)
- Physical Science: [Dr. Christopher F. Monson](#)



SCIENCE & ENGINEERING ALUMNI SPOTLIGHT

ANNUAL ALUMNI BANQUET HONORS ALUMNI

SUU's Alumni & Community Relations Office honored and celebrated alumni at the 2019 Alumni Banquet as a part of the annual Homecoming Week.

This year, three individuals were recognized for their contributions and service, including Timian Yoshimoto Godfrey, Clinical Assistant Professor for the doctorate program at the University of Arizona College of Nursing. Godfrey was presented with the Young Alumni Award.

Godfrey is a 2010 graduate with a bachelor's degree in nursing, capping an SUU career that featured a wide range of exceptional student achievements and honors.

After graduation, she worked as a registered nurse while earning a master's degree in nursing-family nurse practitioner at UNLV in 2014, and has since served as a board-certified nurse practitioner in the areas of interventional pain management, orthopedic spine surgery, telemedicine, and emergency medicine. She continues to work in emergency departments on Native American reservations throughout the country, and her experiences inspired her to pursue her doctor of nursing practice degree at Johns Hopkins University, completed July 2019.

Additionally, this year the National Center for American Indian Enterprise Development named

her a recipient of the Native American Top 40 Under 40 awards.

SUU TO DENTISTRY

After serving with the U.S. Navy in Okinawa, Japan for three years, SUU graduate Matthew Torres purchased a dental practice in Gardnerville, Nevada, and now crafts smiles every day.

"At SUU I learned that I can do anything," Dr. Torres said. "SUU provided me many mentors who helped and supported me in the pursuit of my dreams."

Before graduating magna cum laude in 2010, Dr. Torres was heavily involved with SUU's Rural Health Scholars (RHS). Through RHS, he enjoyed getting involved with community outreach programs and service projects.

"Matt has been a delight to watch as his career grows and he served our country," said RHS Director Rita Osborn. "He was always a leader among our pre-dental students, and always offered to help others; whether by assisting with our Dental Practicum seminar, or assisting others with their applications for dental school. We are thrilled he has started a practice and look forward to watching it grow!"

After graduating from UNLV School of Dental Medicine in 2014, Dr. Torres continued his educa-

tion with a one year residency in general dentistry at Naval Medical Center Portsmouth in Norfolk, Virginia. His dental practice, Carson Valley Dental Arts, is located in Gardnerville, Nevada.

“I grew so much from my first day on campus to my last,” Dr. Torres said. “My confidence grew over time as professors and fellow students pushed me to stand tall and learn for myself, trust myself, and ask questions.”

SUU TO CORPORATE WEB DESIGNER

Mitch Grimshaw is a web designer in the Communications, Marketing, and Media Department for Leavitt Group Enterprises, one of the top privately-held insurance brokerages in the nation.

“Primarily, I design and build websites for our insurance agencies to connect them with their clients,” he says of his work, which also entails helping create the look and feel of the Leavitt Group brand. “I work closely with clients every day and try to make sure my designs meet their needs.”

Even though Mitch has always enjoyed art and being creative, he never imagined he could make a living at it. But thanks to a good friend, Mitch went back to school and gave graphic design a try.

“I knew within the first week that it was what I wanted to do,” he says. “And I never looked back!”

At SUU, Mitch received training in both graphic design and web development, a skill set he calls “unique” but one that has proven to be valuable in his career. He also credits SUU with teaching him that there is always more to learn.

“A degree is a couple of rungs on a ladder of long-long learning,” he explains. “My field is changing with new technologies and strategies and I keep learning to stay on top of my craft; I love to learn.”

SUU TO AMERICAN HEART ASSOCIATION

After earning his associates degree Ladon Haslem transferred to SUU to take advantage of the excellent chemistry program and the scholarship opportunities offered by the university.

While at SUU, Landon received support and encouragement from his professors. They were invested in his success and were always available to discuss the subject matter as well as his personal interests.

“I can’t talk enough about the Chemistry program,” said Landon. “The faculty really valued my education, and I feel like they really cared.”

Juggling work, studies and family life as an undergraduate is always difficult but Landon said that SUU helped him find academic success. “Professors were always accommodating and helpful not



just with class, but life in general.”

Besides the supportive environment, Landon found SUU to be a place that challenged and prepared him for the next step in his life: entering medical school. “SUU helped me develop an analytical mindset and help me desire to see the complete picture. That’s really important in medical school.”

After graduating, Landon received a fellowship from the American Heart Association. This funded his medical education, research on cardiovascular diseases and living expenses.

Landon is currently researching a group of proteins and how they affect heart attacks and strokes. The end goal of his research is to be able to inhibit these proteins and improve heart attack outcomes.

SUU TO GIS PROFESSIONAL

Jarom Hlebasko took a leap of faith when he changed his major from computer programming to geographic information systems (GIS). At the time, he had never heard of GIS. However, Jarom followed the advice of a friend when he enrolled in a few GIS courses and got in touch with GIS Program Director David Maxwell.

“I had no idea what GIS was when I started, but it only took one semester for David to get me interested,” he said. “GIS is very challenging, but I love

challenging things.”

Jarom was paralyzed in an accident prior to attending SUU, and left with limited movement in his arms and fingers, making typing and using a computer mouse difficult. Professor Maxwell was able to get ADA accessible desks and software for Jarom.

“I really loved having him around because he was very efficient, more so than other people,” Maxwell said. “He spent more time learning and experimenting with the software than anyone else, even with his limitations.”

Maxwell helped Jarom secure his first job after his accident. As an undergraduate student, Jarom worked with the Utah Geological Survey, using GIS software to custom map different areas in Beaver, Utah.

Sunrise Engineering approached Jarom in his final year at SUU, and offered him a full-time position before he’d even graduated.

“I was just over the moon, it was amazing,” he said. “I didn’t think I would get to that point that fast. It really was the offer of a lifetime.”

Jarom graduated from SUU with a Bachelor of Science in Engineering Technology. He has worked with Sunrise Engineering for 12 years, and is currently the company’s GIS Team Lead and Principal Developer of Sunrise Cloud SMART GIS.



SUU TO D.C. LEGAL COUNSEL

Not many agriculture majors are able to combine a love for the great outdoors with aiding in policy in Washington, D.C., but Celeste Maloy has done exactly that, serving as legal counsel for Utah Rep. Chris Stewart with expertise in public lands and natural resources issues.

Celeste graduated from Pahrangat Valley High School in Alamo, Nevada, and came to SUU on an agriculture scholarship. She describes her college experience as “wonderful” and says she valued working one-on-one with professors, having familiar faces in classes, and landing an internship with the Natural Resources Conservation Service (NRCS).

“The time I spent working while I was in school really reinforced the concepts I was learning in class,” she says. “Being in such a hands-on program and having an internship that applied the things I was learning really made both work and school blend well for me.”

Following her SUU graduation, Celeste worked as a soil conservationist with the NRCS before she took the LSAT test, not knowing if she even stood a chance of passing. When she began receiving letters from law schools, she became more serious about her prospects, enrolled at BYU’s J. Reuben Clark Law School.

Celeste served as a deputy county attorney for Washington County, Utah prior to working in the nation’s capital. There she represented the area’s interests primarily in public lands and natural resources, worked for the Utah Association of Counties as its public lands policy advisor, and was employed by the Washington County Water Conservancy District.

SUU TO POSTDOCTORAL FELLOW

As a postdoctoral fellow at the prestigious University of California at Berkeley, SUU graduate Sean Natoli is helping to make scientific breakthroughs

to better the future of pharmaceuticals.

His extensive research has earned him the CAS Future Leaders Award, which recognizes early-career scientists and grants them essential scientific, business and leadership training and a trip to the American Chemical Society National Meeting & Exposition. The award received hundreds of applicants from 16 different countries and a wide array of scientific disciplines.

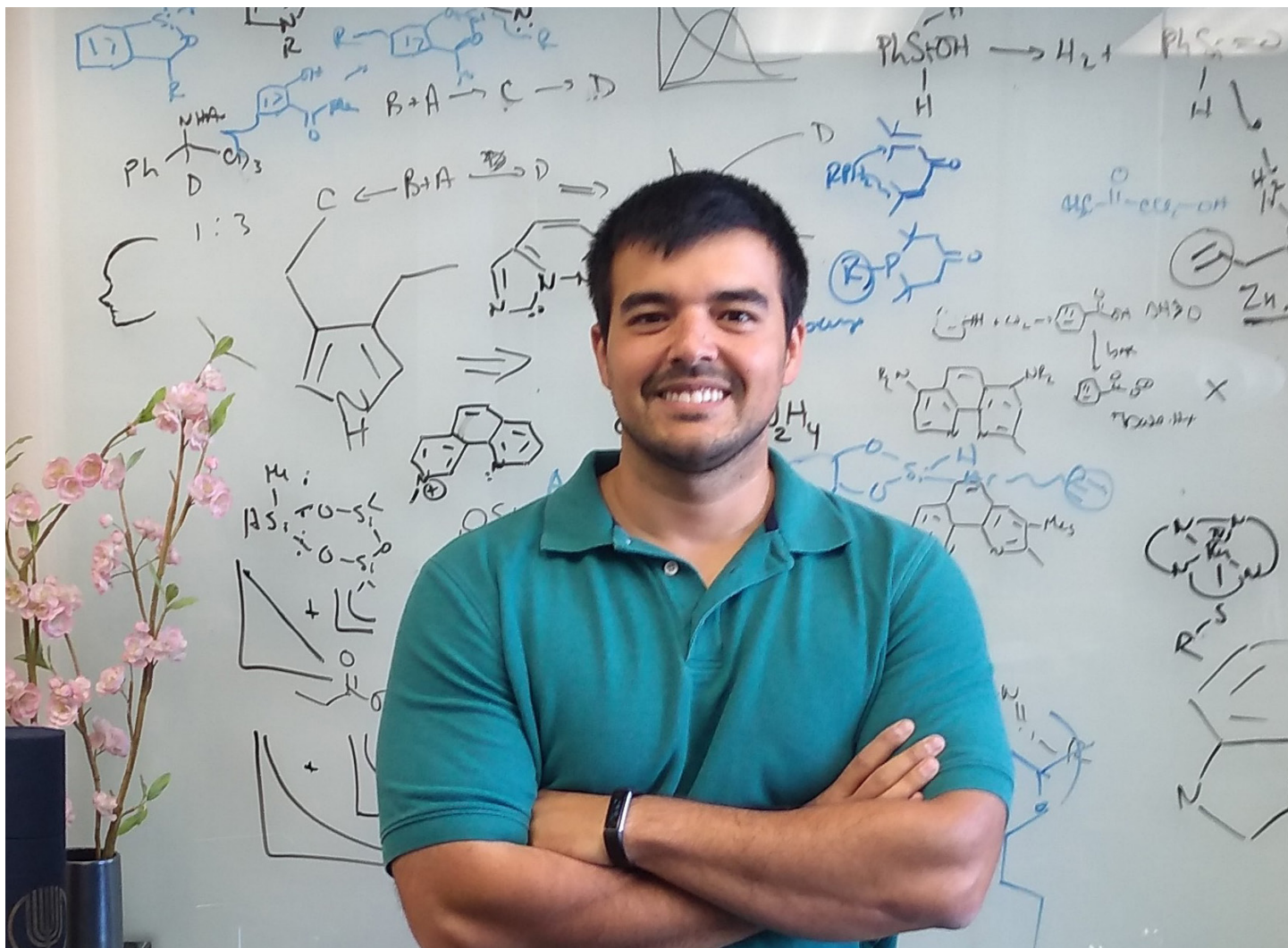
Before he was creating novel enzymes that can construct bonds in complex molecules for pharmaceutical applications, Sean earned his doctor of philosophy focused on transition metal chemistry from Purdue University. Sean achieved high levels of success both academically and professionally, and he contributes his success to the things he learned about himself while an undergraduate student at SUU.

When deciding on which college to attend, Sean was impressed with the history of the education and training that the SUU Physical Science Department provided to ensure the success of its students. The fact that he could access multiple national parks and attend a quality school at a friendly price made it a perfect fit.

Sean began school at SUU in 2008 and one year later enrolled in Dr. Ty Redd’s nationally recognized and rigorous, year-long Organic Chemistry class.

“Organic Chemistry was a springboard for me to explore and understand so many other areas in science,” said Sean. “Understanding those concepts allowed me to rationalize work written about in scientific journals, expedited my learning of new concepts, and gave me the experimental tools and acumen to tackle problems in chemistry.”

Sean became heavily involved with research projects while earning his undergraduate degree. Dr. Redd relied on Sean’s intellectual independence and creativity to come up with and execute those projects. His research experience at SUU centered on the synthesis and photophysical properties of fluorescent heterocyclic molecules, which he was later invited to present on at the spring meeting of



the American Chemical Society in 2012.

Sean credits Dr. Redd for helping instill in him the principles of how to be a successful chemist.

“Dr. Redd has contributed to my success both academically and personally. His ability to coach and encourage students is unmatched,” said Sean. “We would have meetings about science, but also about who I wanted to be personally. His stories of triumphs and failures gave me the confidence and desire to push harder, be better, and never give up.”

SUU laid the groundwork for Sean’s career as a chemist. He was a member of the Chemistry Club, served as an assistant in the school’s annual Chemical Olympics Competition, learned how to conduct research, made the Dean’s List and placed in the 90th percentile of the nation on the Organic Chemistry exit exam.

“My undergraduate experience revolved around individual growth and learning to balance responsibilities,” said Sean. “While each experience presented its own challenges, the accumulation of these events makes me the individual that I am today.”

Sean is now a postdoctoral fellow at UC Berkeley. The majority of his time is currently spent on research and improving the technology available to assist in the formation of chemical bonds.

He enjoys the fact that everyday he gets to learn and find new ways to solve problems.

“Science has the ultimate job security,” said Sean. “As you learn more, you realize how little you truly know and that there is an infinite number of problems to solve. It’s absolutely fantastic!”

COMING JULY 2020:

SUU

WALTER MAXWELL GIBSON
COLLEGE OF SCIENCE
& ENGINEERING

S O U T H E R N U T A H U N I V E R S I T Y

will be upgraded into 3 colleges

College of Engineering

AVIATION - COMPUTER SCIENCE & INFORMATION SYSTEMS

CONSTRUCTION MANAGEMENT - ENGINEERING

ENGINEERING TECHNOLOGY - MATHEMATICS

College of Health Sciences

AGRICULTURE & NUTRITION - KINESIOLOGY - NURSING - OUTDOOR RECREATION

Walter Maxwell Gibson College of Science

BIOLOGY - PHYSICAL SCIENCES