NEW MEXICO AMP
ALLIANCE FOR MINORITY PARTICIPATION

Horizons

Expanding Horizons in Science, Technology, Engineering, and Mathematics
Sponsored by the National Science Foundation

2019 New Mexico AMP Student Research Conference

Two hundred seventy-five attendees were present for the 2019 New Mexico Alliance for Minority Participation (NM AMP) Student Research Conference. This number included university and community college students and faculty, in addition to high school juniors, seniors, and advisors from Upward Bound and New Mexico Math, Engineering, Science and Achievement (NM MESA) program. The statewide event took place on October 11th at the Las Cruces Convention Center.

Dr. Paulo Oemig

Lieutenant Gov. Howie C. Morales

Dr. Paulo Oemig, Director of the New Mexico Space Grant Consortium (NMSGC) and the New Mexico NASA EPSCoR program, presented the breakfast keynote presentation that kicked off the conference. His talk, entitled, "New Mexico Space Grant: Enabling to Dare Greatly" showcased some of the key attributes of how NASA is working to inspire the next generation of engineers and scientists. In his position, Dr. Paulo Oemig is responsible for establishing the organizational goals and objectives of the NMSGC and NASA EPSCoR program to align with NASA requirements. Born and raised in Argentina, Dr. Oemig also recounted his personal educational journey in an effort to inspire the student attendees of the conference to reach for their goals. Dr. Paulo Oemig completed a yearlong Albert Einstein Distinguished Educator Fellowship with NASA and has five years of experience as a chemist and ten years of experience as a STEM educator. He also advises the Math and Science Bureau of the NM Public Education Department. Dr. Oemig has a bachelor's degree in Chemistry and a doctoral degree in Bilingual Education. A long-time science teacher before tackling his position as Director of NMSGC and the NM NASA EPSCoR program, Dr. Oemig stressed the importance of education and how it enables students to achieve their greatest ambitions in life.

The Luncheon Keynote Speaker was the Honorable New Mexico **Lieutenant Governor Howie C. Morales**. Lieutenant Governor Howie Morales was raised in Silver City, New Mexico and works to improve the lives of people in his community and across our state. He served in the New Mexico Legislature on the Legislative Finance Committee for 11 years. Before his political journey, Lieutenant Governor Morales was a classroom teacher and strong advocate for seniors and for public education. Lieutenant Governor Morales has fought to protect some of the state's most vulnerable communities and local schools, to build a fair economy that works for all, and to move New Mexico forward. In his Keynote address, Lieutenant Governor Morales started his speech out with questioning who was a first-generation college attendee from the audience. After a majority of the attendees raised their hands, he went on to identify himself as a first-generation student and stressed the importance of taking advantage of opportunities students are presented with. He argued that he is fighting for investing more money in education in the state of New Mexico and that he wants our students to stay in the state of New Mexico to be our next generation of STEM (Science, Technology, Engineering, and Mathematics) leaders.

Attendees of the conference were provided a choice of two of three workshops: The first workshop was entitled, "Applying For Graduate School Funding, Transitioning Into Graduate School, And Using Social Media To Communicate Climate Change" by Holly Olivares, former Summer Community College Opportunity for Research Experience (SCCORE) and Undergraduate Research Scholars (URS) student. Holly is currently in her first year as a Ph.D. student at the University of Colorado-Boulder and was ecstatic she was able to volunteer and be part of NM AMP's conference for another year. The second workshop was entitled, "Internships," and was hosted by New Mexico Institute of Mining and Technology's Assistant Director of Student Affairs and Career Services, Tristine Hayward. Ms. Hayward was eager to share her experiences with knowing the value of a degree in the STEM field and how research experience and internships boost students getting their dream jobs. Our third workshop was hosted by the NMSU Education Abroad Office. Students Mar Tajeda Corral

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A Message from the Director, Dr. J. Phillip King

The end of the decade almost parallels the end of the first year of New Mexico Alliance for Minority Participation's five-year, $4 million grant from the National Science Foundation. The decade finished strong with so many accomplishments and milestones achieved by our students, staff, and faculty across the state of New Mexico. As a 27 year-old program established in 1993, we continue to foster excellence and broaden new opportunities for veteran and new NM AMP students.

As we continue to grow our organization, NM AMP initiated three new programs this year: a Student Advisory Board that will help their Institutional Coordinators with recruitment and will assist administration and evaluators in gaining student perspective of program development and improvement; the Book Stipend Award that will be used as a tool for recruitment and as a way to support students; and the STEM PREP Stipend Award that will help prepare students at an earlier stage to participate in research.

NM AMP continues to work with a team of social scientists to address and evidence the impact of educational interventions that contribute to increasing diversity in STEM. NM AMP has made contributions, along with other STEM programs statewide, to impact students directly involved in its programs as well as to impact statewide institutions' ability to serve underrepresented minorities (URMs), who earn 52% of degrees in the state.

Also aiding in the success of NM AMP and its mission to provide students with the highest-quality research opportunities and most excellent standards, Dr. Gaspard Mucundanyi was hired as a Postdoc Database Analysist and Ms. Jimi Ickes was hired as the new Program Specialist, Sr. In addition, NM AMP has two new Institutional Coordinators, Dr. Blanca Cespedes from New Mexico Highlands University and Dr. Jonathan Tsosie from San Juan Community College.

In May 2019, twelve LSAMP programs nationwide gathered at the Las Cruces Convention Center in Las Cruces, NM. These specific alliances, which have been in existence for ten years or over, are named the STEM Pathways and Research Alliances, and are required to have social science research requirement. At the meeting, speakers discussed how alliances and social scientists responsible for the research can best collaborate and communicate. Other speakers discussed the importance of the social science component and how to ensure that research is shared and disseminated. Importantly, an unsolicited proposal to NSF by the SPRA Alliances as a whole was discussed to provide funding for a large conference of all SPRA alliances, and a proposal is planned for submission in Spring 2020. At this conference, all the alliances will be provided an excellent venue for presenting their research. The SPRA meeting was an overwhelming success, and many of the attendees are looking forward toward meeting again to discuss all the accomplishments and hurdles, and to develop a deeper and more unified LSAMP network of program leaders and directors.

With so much to celebrate this past year, NM AMP is already making progress toward an even more successful year. This past summer, the Associate Director Jeanne Garland attended a conference in New York regarding online student portfolios and NM AMP plans to incorporate online portfolios as a professional development opportunity for students. E-Portfolios are a good tool for students to help them archive their academic work for later use with applying for graduate school or entering a career. Additionally, NM AMP is initiating the implementation of a new method for ICs to complete their NSF reporting that allows for more seamless communication and partner institution sharing. With that being said, none of this could have been accomplished without the amazing students, staff, and faculty that NM AMP so proudly has been able to foster.

The 2019 New Mexico AMP Student Research Conference,

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and Fay Yurity gave a presentation entitled, "How to Get Involved in International Research and Our Journey Aboard." Both Ms. Corral and Ms. Yurity are undergraduate students at New Mexico State University and were inspired by their experiences abroad to share their journeys and inform students how they can have similar international opportunities.

In addition, a workshop tailored for faculty only was presented, entitled "Biogeochemical Mechanisms Influencing Arsenic Speciation and Mobility on Native American Lands." This workshop was presented by Cheri Devore, Ph.D. Candidate at the University of New Mexico in the Civil and Environmental Engineering Department. Ms. DeVore, Dine, is originally from Crownpoint, New Mexico and works under the mentorship of longtime NM AMP supporter, Dr. Jose M. Cerrato. Her research integrates spectroscopy, microscopy, speciation, aqueous chemistry, and molecular biology tools for the study of complex biogeochemical processes affecting the transport of arsenic and other metals from abandoned mines. Along with her research team, she works with Native American communities to better understand the chemical and microbiological redox processes impacting metal stability and mobilization from mine waste solids to surface waters, soils and plants.

Another important component of the NM AMP's Annual Conference is hosting a group of high school NM MESA (New Mexico Math, Engineering, and Science Achievement) and Upward Bound students. Anita Gonzalez, the NM MESA Regional Director, presented an overview of NM AMP and the conference. In their own program, each year, the New Mexico MESA students are posed with an engineering problem on which they compete at the State level and

NM AMP aids in tailoring materials for a morning and afternoon presentation which is relevant to their competition's topic. This year, NM MESA's topic was on "Energy." In the morning, Dr. Sarada Kuravi, Assistant Professor in the Department of Mechanical and Aerospace Engineering Department and Director of the Renewable and Thermal Energy Systems Laboratory (REThermS Lab) at New Mexico State University organized with her graduate students a workshop entitled, "Solar Energy Applications and Research at the REThermS Lab." During this workshop, students had the opportunity to make their very own solar power panels and compete against one another in cooking s'mores with their solar panels. In the afternoon, John C. Wiles, Senior Research Engineer at the Southwest Technology Development Institute gave a presentation on "The PV Experience," in which he showcased the use of photovoltaic energy in Southwest New Mexico.

Another highlight of the conference was the opportunity for SCCORE participates to network with other SCCORE students from current and former cohorts. This year, Cheri DeVore also lead this session by recounting her journey leading to graduate school and beyond. Ms. DeVore notes that, "Approximately less than 0.3% of STEM graduate degrees in the United States are earned by Native American students." Ms. DeVore states, "I am proud to be part of this small cohort, and I am also motivated to do more to integrate our perspectives in the larger body of scientific knowledge." Additionally, she provided an interactive exercise for SCCORE students entitled, "River of Life Exercise: Developing New Approaches to Research and Environmental Discourse."

Twenty (20) community college students from partner institutions attended the Professional Development Workshops the day before and the day after the conference. These pre- and post- conference workshops helped the community college students make the most of the conference experience. Students from seven (7) community colleges attended these workshops including: Central New Mexico Community College, Doña Ana Community College, Luna Community College, NMSU-Alamogordo Community College, NMSU-Carlsbad Community College, and Santa Fe Community College, and San Juan Community College. On Thursday, October 10th, former AMP participant Dr. Jonathan Tsosie hosted the SCCORE students. Dr. Jonathan Tsosie is a Biology Instructor with the Department of Science, Math, and Engineering at San Juan College. Originally, he was a non-traditional college student while attending college. After high school, he enlisted in the U.S. Army as a combat medic where he became interested in medicine. After a four-year enlistment, he attended San Juan College as a pre-medical school major. While at San Juan College, he participated in scientific research with Dr. Eric Miller and has been obsessed with research ever since. Dr. Tsosie transferred from San Juan College to the New Mexico Institute of Mining and Technology where he continued doing research. After graduation, he was hired to lead a $1.2 million Department of Defense (DoD) project at MIT, which helped him to become a National Science Foundation Graduate Research Fellow (NSFGRF) at Columbia University. Jonathan was excited to inspire and share his journey with the next generation of NM AMP students. On Saturday, October 12th, the SCCORE students were hosted by Science, Engineering, and Math Division Dean at Doña Ana Community College (DACC) Dean Joe Butler and by Professor of Computer Information Technology at DACC, Dr. Timothy Chappell. Joe Butler He has more than 29 years of experience in higher education as a mathematics professor and academic administrator at community colleges and universities including Baylor University, the University of North Texas as well as Collin College, Cisco College, Panola College, and DAC and Dr. Timothy Chappell has worked in the "real world" of computers for around 18 years of which six he was in the Air Force. For most of this time Dr. Chappell was involved in programming, system design, and development for government and commercial products. During his time at DACC, he has taught many different programming languages (C++, Java, Visual Basic and PHP) and databases.

Students also had the opportunity to present their research projects in poster format, with a total of 88 projects presented. There were presentations by community college students and university students, including participants of CBBG, S-STEM, ReNUWIt/SCCORE, REinWEST/SCCORE, and other SCCORE students.

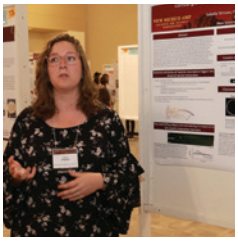
Kelsey Hayes, First Place University

Taylor Busch, Second Place University

Darron Gallegos, First Place CC

Karina Ornealas, Second Place CC

Adan Martinez, Third Place CC



Isabella Terrazas, Third Place University

The awards for the presentations were provided in two categories: university and community college students. In the category of University poster presentations, awardees including the following: First Place, **Kelsey Hayes** from New Mexico State University for her research entitled, "Improving the Fluidic System of the Fluorescence Lifetime Excitation Cytometry by Kinetic Dithering Flow Cytometer;" Second Place, Taylor Busch from the University of New Mexico for her research entitled, "Effect Of Fungal Endophytes On Arsenic Speciation And Bioavailability In Plants From Cheyenne River, South Dakota" and Third Place, Isabella Terrazas from New Mexico State University for her research entitled "Cortical Granule Motility in Response to Hormone Stimulation During Sea Star Meiosis." In the community college category, the following students were awarded: First Place, Darron Gallegos from Central New Mexico Community College, for his research entitled,

"Utilizing Food Waste;" Second Place, Karina Ornealas from Santa Fe Community College, for her research entitled, "Investigation of Uranium Toxicity in Epithelial Lung Cells;" Third Place awardee, Adan Martinez from Luna Community College for his work on "Water We Gonna Do? Calculating Hydraulic Conductivity using a Handmade Permeameter."

The following programs collaborated this past year with NM AMP by funding and mentoring several students who presented at the conference: the ReNUWIt program; the Center for Bio-Medicated and Bio-Inspired Geotechnics (CBBG); REinWEST program (all of which collaborated with the SCCORE program); EPSCoR; S-Stem Program; and the USDA. Congratulations to everyone who presented this year for their tremendous work and dedication!

People, Places, and Things

Celebrating a New Team for NM AMP

NM AMP would like to recognize Dr. Gaspard Mucundanyi, a Postdoc who is serving as Database Analyst. Dr. Mucundanyi earned a B.S. degree in Information Technology, a Master's Degree in Computer Science, and a Ph.D. in Curriculum and Instruction, with a minor in Applied Statistics. Dr. Mucundanyi has already made a huge contribution to the NM AMP family and we are excited to have him aboard! As part of his new hire resourcefulness, Dr. Mucundanyi collects, manages, and reports data from our programs as well as setting up a new database system for NM AMP. This initiative will allow more seamless communication amongst all the partner institutions and will allow greater transparency between the institutional coordinator and the student's they represent.

Another new addition is Jimi Ickes, Program Specialist Sr. at the lead institution, NMSU. In her new position at the lead institution at NMSU, Jimi will coordinate the URS Program, STEM PREP, SCCORE, and next year's conference. Additionally, we welcome our newest Institutional Coordinators, Dr. Blanca Cespedes, a fire ecologiest who enjoys field work to study population and communuity dinamics in a fire-prone ecosystem, and Dr. Johnathan Tsosie, a former NM AMP student and biology instructor at San Juan Community College. Dr. Blanca Cespedes has filled the place of Dr. Jessica Snow, who will be dearly missed by the NM AMP family. Dr. Cespedes and Dr. Tsosie have already made large contributions as Institutional Coordinators in both recruitment and in their efforts to learn the ins-and-outs of all the programs NM AMP has to offer.

Institutional and Collaborator Happenings:

An ongoing effort of NM AMP is to spend time recruiting and making students around the state of New Mexico aware of the opportunities and stipends available for our community college and undergraduate STEM students. To aid in our effort, NM AMP started a Student Advisory Board. Of the fourteen partner institutions, and on a bi-annual rotation, seven of the institutions will elect an outstanding student to be the voice and representative of their respective college. The student elected by the respective universities' and community colleges' Institutional Coordinator will aid year-round with recruiting events as well as represent their institution at various events. This year, our student advisors were the following: Leonardo Escamilla III, NMSU; Precious Frank, San Juan Community College; Brianna Green, New Mexico Institute of Mining and Technology; Andrea Loya Lujan, Doña Ana Community College; Adan Martinez, Luna Community College; Bianca Serda, University of New Mexico; and Josef Weese, Northern New Mexico College. Next year, student representatives from Eastern New Mexico University, New Mexico Highlands University, Western New Mexico University, Central New Mexico University, New Mexico State University-Alamogordo, New Mexico State University-Carlsbad, and Santa Fe Community College will elect Student Advisory Board representatives.

NM AMP would like to thank the students who attended the New Mexico Academy of Science (NMAS) Research Symposium, collaboratively funded by the NMAS and EPSCoR, an annual conference with oral presentations, a poster competition, and a Keynote Address. The conference is geared to undergraduate and graduate students from New Mexico's colleges and universities. Presentation and poster proceedings are published in the New Mexico Journal of Science.

The 2019 Spring New Mexico Tech Student Research Symposium (SRS), is an annual event at which New Mexico Tech Students and invited students from other institutions and programs present their research to New Mexico Tech students and faculty, Socorro, and the larger STEM community. Students at all levels, from freshman to graduate, have the opportunity to participate in the SRS, providing a forum to share the exciting projects on which students have been working. The SRS provides a venue to showcase the students' knowledge and skills by giving an oral or poster presentation to peers, professional researchers, and engineers as well as a platform to communicate their research or design to people outside of their field. In addition to presenting students' original work, they also have the opportunity to compete in a three-minute oral speech competition. This was the second year that statewide New Mexico AMP Alliance students outside of New Mexico Tech had the opportunity to participate in the Symposium and present their research.

Jeanne Garland, Associate Director of NM AMP, attended the LSAMP-NICE NSF International Center of Excellence Conference at the French Embassy in Washington, D.C. on September 9th and 10th, 2019. The Conference included speakers

Student Advisory Board Members 2019

from several countries, including representatives from Panama, Saudia Arabia, France, South Africa, and Taiwan. Two MOU's were signed at the event, one with South Africa, and one with King Abdullah University of Science and Technology (KAUST), a private research university located in Thuwal, Saudi Arabia. In the Poster Presentation Session, Ms. Garland presented a poster on NM AMP's students who have participated in international research studies. Dr. Art Hicks, Director of LSAMP, was one of the Keynote Speakers at the event. He spoke on the topic of "International Activities and the LSAMP Community."

Student News:

Joseph Lopez, former SCCORE student from Doña Ana Community College (DACC) has been hired as a full-time lab technician for DACC's Manufacturing and Aerospace Technology Lab. He graduated with an Associate's degree in Aerospace Technology from DACC, and is currently working on a B.S. in Mechanical Engineering at NMSU.

Benson Long, a civil engineering undergraduate researcher, was named the recipient of the 2019 Brown & Caldwell Navajo Scholarship, which supports students in environmental science & engineering. Benson does excellent work under Dr. Laura Crossey, the NM AMP University of New Mexico (UNM) Institutional Coordinator and Professor of Earth and Planetary Science, on a project that examines arsenic uptake into plants near Native American communities impacted by legacy mining. Ben is mentored by Cherie Devore, Dine, and Jose Cerrato in the UNM's Department of Civil, Environmental, and Construction Engineering.

This past May, **Jarett Jones**, a NM AMP URS participant who is currently pursuirng a B.S. degree in computer engineering, traveled with an international team of scientists led by Emma Liu of the University of Cambridge. The team also included University of New Mexico Professor and volcanologist Tobias Fischer in the Department of Earth and Planetary Sciences. They undertook an ambitious field deployment to the two volcanoes – in Papua New Guinea – both amongst the most prodigious emitters of sulphur dioxide on Earth, and yet lacking any measurements of how much carbon they emit to the atmosphere. The UNM team also included Dr. Scott Nowicki, Adjunct Professor in Earth and Planetary Sciences and Matthew Fricke, Assistant Professor of Computer Science.

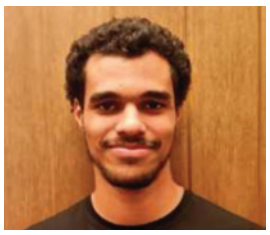
On September 11, 2019, NM AMP URS Student **Maria Carmona-Montalvo** traveled to Washington D.C. to advocate for the need for NSF and AAAS to fund programs which inspire, encourage, and support low-income and academically talented students with an emphasis on students of color, women, and special need students. She was one of 30 STEM Scholars invited to speak about "real" college student experience and how NSF funded programs impact their daily lives. This past summer, Maria was involved in a terrible traffic accident which left her almost completely blind. Despite her accident, Maria is truly an inspiration. Against her disability, she is currently a New Mexico State University NSF CAPE S-STEM Scholar, a Research Assistant through the New Mexico AMP URS program, a member and Engineering Student Council Senator for Tau Beta Pi, NM Alpha Chapter, American Institute of Chemical Engineers, Executive Student Committee, National President, and a proud member of the New Mexico State University Chapter of the Society of Women Engineers. She describes herself as "a passionate and dedicated re-entry student, double majoring in Chemical Engineering and Biology with a minor in Biomedical Engineering [who believes] that anybody can do anything that the set their minds to and is always willing to help to the best of my abilities."

A true success story, NM AMP would like to congratulate **Holly Olivares** for being selected to receive the Graduate Research Fellowship Program (GRFP) through the NSF and thank her for volunteering her time to share her experience at this year's annual conference. Holly is currently a Ph.D. student at UC-Boulder Colorado, majoring in Earth and Planetary Science and first got involved with New Mexico AMP as a Central New Mexico (CNM) Summer Community College Opportunity for Research Experience (SCCORE) student and later continued the program for ongoing years as an Undergraduate Research Scholar (URS). Growing up, Holly wasn't raised by parents who went to college. Holy got married and had children at a young age. In fact, Holly's original education ended in 9th grade, and she didn't receive her GED until she was 38 when she decided to enroll at CNM. Holly recounted her journey of falling "into every stereotype, [including] raising two kids, and now [she] is doing science!" Holly said her main motivation for continuing her education was due largely to fact that she took advantage of a plethora of resources students often forget to utilize—such as those NM AMP has to offer. Holly wanted to emphasize in her interview that "there is so much opportunity at University if you just ask for it." In many ways, Holly was grateful for her life experiences because it didn't make her shy to ask for those opportunities and it ultimately helped her open many doors' students are afraid of. In her education, Holly determined one of the biggest problems we face is a "climate crisis, " which motivated her to learn and be able to communicate about how our planet system works. She ultimately pursued her Ph.D. education under Dr. Vikki Lovendoski to study ocean biogeochemistry. On a concluding note, Holly wanted to say that she wouldn't be where she was without Institutional Coordinator Laura Crossey and the benefits of SCCORE in helping her make friends and transition from community college to a four-year institution.

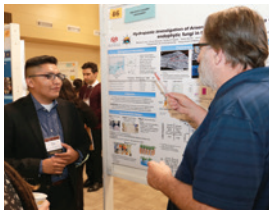
On a similar note, current New Mexico Undergraduate Research Scholar **Marie Ruiz** shared her story with NM AMP. In July 2007, Marie Ruiz and her family packed their bags from the Philippines

Dr. Gaspard Mucundanyi

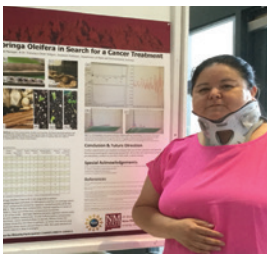
Jimi Ickes



Jarett Jones

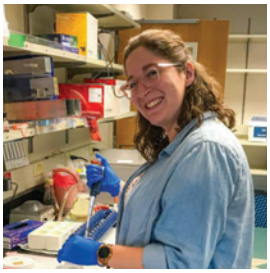


Benson Long



Maria Carmona-Montalvo

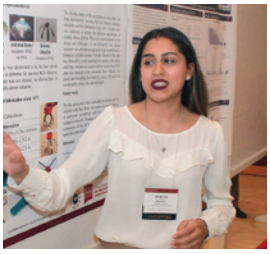
Holly Olivares



Isabella Terrazas

Ethan Billingsley

Pascual Camacho



Virginia Fuentes

Brandi Cron

and moved halfway across the world in hope of better opportunities and life. Fast forward to 2013, Marie and her family moved once again to Zuni, New Mexico, where Marie was faced with the challenges of moving to a small community where everyone, but her, grew up with each other. Having trouble fitting in, Marie immersed herself in academia, extra-curriculars, sports, and dual-credit classes. At the end of her senior year of high school, she was named Valedictorian and was excited to transfer to New Mexico Institute of Mining and Technology the upcoming Fall. Unfortunately, a mere two-days after graduating, Marie and her parents received a letter from the U.S. Citizenship and Immigration Services, informing them that their application to file for a permanent residency card had been denied and because of the change in laws about immigration, the denial of their permanent residency card meant that all the other applications that were sent in for approval (extension of visa, etc.) were also denied. In consequence of this denial, Marie and her family sold everything they owned and bought a plane ticket back to the Philippines and Marie had to let go of her dream of attending NMT. Marie and her family spent a total of five months in the Philippines watching her friends start college and feeling stuck in her position. Then one day, finally, Marie and her family received a visa extension that made it possible to move back to the U.S. Then she enrolled at UNM–Gallup Community College located nearby. In her time there, she met Dr. Kamala Sharma who made a huge turning point for Marie and her academic journey because she was once again inspired to pursue her goals and apply for the Bridges to the Baccalaureate Program at NMSU to work in a research lab for 9 weeks during the summer. Through the Bridges program, Marie was able to discover NM AMP and continue her research if she transferred to a four-year university. This domino effect lead Marie on her current journey as an extraordinary STEM student at NMSU following her passion with aid from the Undergraduate Research Scholars (URS) program.

New Mexico AMP would like to congratulate **Isabella Terrazas**, who proudly presented her New Mexico Undergraduate Research Scholar (URS) research poster at the 2019 Society for Advancement of Chicanos/Hispanics & Native Americans in Science (SACNAS) conference in Hawaii. At this conference, Isabella was won an award for an Outstanding Research Presentation against a little over 1000 other presenters! Isabella is a returning URS student who plans to continue with the URS program and is grateful for the opportunities she has gained so far.

NMSU URS student **Ethan Billingsley** will be attending the International Modal Analysis Conference (IMAC) in February 2020 to deliver a group presentation about his research over the summer at Los Alamos National Laboratory. The title of his presentation is "Toward Extracting Multidimensional Kinematics from SWIFT Experiments."

Also making big waves in the STEM and business-sector community is NMSU URS Student, **Pascual Camacho**. Pascual is a senior at NMSU, majoring in Civil Engineering with minors in Economics and Mathematics. Currently, he participates as a research assistant through the URS program under Dr. Paola Bandini, Civil Engineering Associate Professor, in the Center for Bio-Mediated and Bio-Inspired Geotechnics (CBBG). In early 2019, Pascual co-founded Vita Health, a healthcare startup developing a solution to reduce medication abuse. He pitched his innovation at the Aggie Shark Tank in October 2019, where he reached a deal with investors to take the product to market. In addition, Pascual has completed two internships with ExxonMobil, studied abroad in England, served as president of the American Society of Civil Engineers and Chi Epsilon at NMSU, and in May 2019, was selected to participate in the highly selective Summer Venture in Management Program at Harvard Business School.

In the way of journal publications, NMSU URS students **Virginia Fuentes** published two papers with her research as an undergraduate research scholar: "Classification of biological and bioinspired aquatic systems: A review" which was published in 2018 in *Ocean Engineering* and "A review on the modeling, materials, and actuators of aquatic unmanned vehicles," also published in *Ocean Engineering* in 2019, where she collaborated with another URS student, Adan Campos. Both Adan and Virginia currently work with mentor Dr. Abdelkefi and graduate student, Ryan Salazar.

Celeste Herrera, the NM AMP Interim Project Specialist, helped middle school NM MESA students to develop posters to present at a national championship competition. Fifty NM MESA students attend our NM AMP Conference each year, and NM AMP authors materials, including a log, for the students to help them become more engaged with the speakers and the poster presentations at the conference. This outreach to middle-school and high school students impacts entrance into and retention in STEM. Celeste also provided a presentation to the NMSU College Assistance Migrant Programs (CAMP) in the fall of 2019 about the programs of NM AMP.

New Mexico AMP would like to recognize **Dr. Brandi Cron** for recently publishing an article entitled, "Elemental Sulfur Formation by Sulfuricurvum kujiense Is Mediated by Extracellular Organic Compounds" in the journal *Frontiers in Microbiology*. Dr. Cron is a current postdoctoral fellow at Penn State University. Dr. Cron received her bachelor's degree from the University of New Mexico where she majored in Biology and participated as an Undergraduate Research Sscholar through NM AMP. She then went on to receive her master's degree from the University of New Mexico in Geological and Earth Science and later completed the Bridge to Doctorate Program at the University of Minnesota where she earned her Ph.D. in Biogeology.

The Summer Community College Opportunity for Research Experience (SCCORE) students for 2019 are the following:

NMHU SCCORE: Nicholas Maestas; UNM SCCORE: J'Neal Caldwell, Dayan Fuentes, Adan Martinez, Karina Ornelas, Darrien Smiley, Sadie Lopez; NNMC SCCORE: Claudia Gallegos; NMSU SCCORE: Trever Perkins, Jazmin Lopez, Julian McPherson, Steven Wagner, Cathryn Gonzales, Andrea Loya Lujan, Shane Prugh, Ashton Gorzelski, Jennifer Allen, Darron Gallegos, Kyle Miller, Justin Valdez, Morgan Appell, Victoria Lindamarie Valdez.

The 2019 Statewide Awardees for the Transfer Scholarship are the following:

NNMHU: Ashley Edenfield (from CNM to NMHU), Saige Martinez (from UNA Luna CC to NMHU); NMT: Santiago Esquibel (from Luna CC to NMT), Nicholas Maestas (from UNA Luna CC to NMT), Julian McPherson (from NMSU-A to NMT), Andre Ortiz (from CNM to NMT), Justin Valdez (from Luna CC to NMT); NMSU: Jennifer Allen (from DACC to NMSU), Ashton Gorzelski (from DACC to NMSU), Holly Meadows (from NMSU-C to NMSU), Trever Perkins (from NMSU-A to NMSU), Dion Reid (from NMSU-C to NMSU)

Thank You

We want to thank the following programs, students, faculty, and staff for all they did to ensure success of the 2019 New Mexico AMP Student Research Conference:

Dr. John Floros
President, NMSU
• Welcome and Introduction to NMSU

Conference Keynote Speakers
• Dr. Paulo Oemig, Director, New Mexico Space Grant Consortium & NASA EPSCoR, NMSU
• The Honorable New Mexico State Lieutenant Governor Howie C. Morales

New Mexico MESA and Upward Bound Workshop:
• Dr. Sarada Kuravi, Assistant Professor, Department of Mechanical and Aerospace Engineering, Director of the Renewable and Thermal Energy System Laboratory (REThermS Lab), NMSU
• Lei Mu, doctorial graduate research student at the REThermS Lab with Victoria Clarke, Claire Debroux, and Sergio Marquez, undergraduate research assistants at the REThermS Lab.
• John C, Wiles, Senior Research Engineer, Southwest Technology Development Institute, NMSU

Faculty-Only Workshop:
• Cherie DeVore, Dine, Ph.D. Candidate, UNM, Civil and Environmental Engineering. Presentation: "Biogeochemical mechanisms influencing arsenic speciation and mobility on Native American lands."

Workshop 1:
• Holly Olivarez, NM AMP Alum and Ph.D. student at the University of Colorado-Boulder. Presentation: "Applying for Graduate School Funding, Transitioning into Graduate School, and Using Social Media to Communicate Climate Change."

Workshop 2:
• Tristine Hayward, Assistant Director of Student Affairs, Career Services, New Mexico Institute of Mining and Technology. Presentation: "Internships"

Workshop 3:
• NMSU Education Abroad Office, Students: Mar Tajeda Corral and Fay Yurit. Presentation: "How to get Involved in International Research and our Journey Abroad."

Community College Networking Meeting:
• Cherie DeVore, Dine, Ph.D. Candidate, UNM, Civil and Environmental Engineering. Presentation: "River of Life Exercise: Developing new approaches to research and environmental discourse."

Community College Professional Development Workshop:
• Dr. Jonathan Tsosie, Biology Instructor, Department of Science, Math, and Engineering, Luna CC. Presentation: "Why Diversity in STEM is Important."
• Dr. Joe Butler, Science, Engineering, and Math Division Dean, DACC.
• Dr. Tim Chappell, Computer and Information Technology, Professor, DACC.
• Michael Ray, Director of American Indian Program, NMSU, Presentation: Working with Communities vs. Working at Communities: How embracing cultural knowledge can benefit higher education."

Anita Gonzales
NM MESA Statewide Program Coordinator
• Facilitator for NM MESA Conference Program

Terry Ramirez
NM MESA Regional Coordinator
• Helped facilitate NM MESA Workshop(s)

Jack Divan
Professional Photographer,
• Six years as the conference photographer

Margaret Cotsonis
• Lead Judge

Student Presenters, Faculty Mentors, and Judges from our partner community college and university institutions, from the ReNUWIt program, from the Center for Bio-Mediated and Bio-Inspired Geotechnics (CBBG), and from PREP and the ReNwUIt Young Scholars programs.

All the staff and Institutional Coordinators of NM AMP for recruiting students, staff, and faculty for the conference.

NM AMP Advisory Board for your wisdom, direction, and guidance for many years!

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