NEVADA SPACE GRANT CONSORTIUM

SPACE GRANT SCHOLARSHIP RECIPIENT WINS NATIONAL DESIGN CONTEST

Joshua Adams, a recent transfer student from the College of Southern Nevada to the University of Nevada, Las Vegas, is the winner of the national NASA Space Grant Ballooning Project logo contest. The logo will be used to identify the project that will take place all over the country on August 21, 2017.

The NASA Space Grant Ballooning Project will document the Great American Eclipse on the above date with the use of student conducted high altitude balloon (HAB) flights. Nine to 12 locations along the total eclipse path will be chosen from Oregon to South Carolina to document the event through live video and images captured by the balloons from near space and delivered to the NASA website for the public to view. This type of coverage of a total eclipse has only happened once before in Australia in 2012 and will prove to be a monumental moment for science as well as the students involved nationwide. In addition to branding the balloon project, Adams' winning logo design will be used on stamps nationwide during the 2017 total solar eclipse.

"My goal was to keep the logo clean and simple, while incorporating key elements that define the event. My personal favorite part is the group of horizontal lines representing Earth's atmosphere, our 'thin blue line,'" Adams said.

AACT/UNR Rover team
Photo by NASA Marshall Space Flight Center

WASHOE COUNTY STUDENT ENGINEERING TEAM COMES IN THIRD

A team of students from Washoe County School District's Academy of Arts, Careers and Technology (AACT) returned home victorious after competing in the second annual NASA Human Exploration Rover Challenge held in April 2015.

The Reno students' team and their sophisticated rover vehicle finished third in the High School Division – Obstacle Course, presented for posting the fastest vehicle assembly and race times in their division, with the fewest on-course penalties. The Reno team also won the System Safety Award for the high school team exemplifying the best safety practices. Reno's third-place finish clocked them in as the fastest high school team from the continental U.S.

Supported in part by Nevada NASA Space Grant Consortium (NVSGC), the Reno rover team is a partnership between the school district's AACT, and Fleischmann Planetarium at the University of Nevada, Reno.

COMMUNITY OF PRACTICE RECIPIENT

When the Nevada Space Grant Consortium created its new program "A Community College Partnership Creating a Community of Practice Model to Engage and Retain Minority Students" it was with students like Hannah Mason in mind. Mason, an engineering science major at Great Basin College (GBC) was selected as a Fall 2015 scholarship recipient.

While still in high school, Mason was enrolled in dual credit courses at GBC. Mason graduated a year early with 45 college credits. With interest in quantum physics, astronomy, engineering, electric and computer science, Mason plans to continue her studies of engineering physics at the University of Nevada, Reno. Long term, Mason plans to earn her Ph.D in physics and work for NASA or a private space agency.

In addition to scholarships like the one awarded to Mason, the program provides community college students with individualized degree planning and weekly interdisciplinary biological and physical science study through interactive statewide virtual classrooms.

WHERE ARE THEY NOW?

"Taking the lead design role on the current NASA funded BEAM program that will be launched to the International Space Station early next year."

--Brandon Bechtol
2006 Space Grant Scholar

"I am currently conducting research in the aerospace field and teaching students in mechanical engineering."

--Travis Fields
2006 Space Grant Scholar

NEVADA NASA EPSCoR

Research

Nevada research, infrastructure development and student training have and are continually being enhanced by NASA EPSCoR program. During the past year, four research projects and several proposal development efforts were performed by NV System of Higher Education faculty. Research capabilities have been enhanced in a number of science and engineering areas including materials engineering, computer science and hydrology. Specific research topics have included: a better understanding of snow pack and its relationship to climate; physics-based modeling that stimulates mechanoelectrical transduction of 3D polymer metal composites; polymer-metal composite behavior under prolonged explore to space; and development of novel rover localization techniques using horizon line, object recognition techniques for crater and sand dune detection and terrain characterization for rover traversability.

SUMMER 2015 NASA INTERN AT GODDARD SPACE FLIGHT CENTER

NASA EPSCoR provided funding for Omar Navarro Leija (2nd from left above), UNLV computer science graduate student, to participate as a Summer 2015 NASA intern at the NASA Goddard Space Flight Center. Leija explains his internship research, "We have dozens of satellites taking hundreds of pictures of the earth every single day. To accurately measure changes in geology, urban growth, and the environment, we must be able to automatically align these images with other images of the same region. In my project we developed and programmed better computer algorithms to automatically align satellite images."

During the Operations department poster session Leija won first place. He implemented a Shearlet Transform library in C which will be released as open source with his mentor, Dr. Jacqueline Le Moigne, Assistant Chief for Technology in the Software Engineering Division. The preliminary results were encouraging and they hope to present their work at the SPIE Remote Sensing Conference.

"Thanks to my internship I realized that my passion was indeed research and I want to pursue a career as a researcher in computer science ."

-- Omar Navarro Leija

Student Research

Three students (Sumlin, Rainwater, and Karr) worked on the NASA EPSCoR project "Building Research and Educational Capacity for Satellite Remote Sensing of Aerosols and their Radiative and Climate Change Impacts". These three students (pictured above along with a fourth student Zunino) founded a startup company Mining Environmental Technology and Services (METS) to commercialize optical aerosol sensing technology for the mine safety marketplace.

The technology proposed by METS is based on an instrument they developed for balloon platform sampling of aerosol light scattering coefficients in the atmosphere, from the surface to the stratosphere, in support of a NV NASA EPSCoR project. Drs. Arnott and Chakrabarty served as faculty adviser of team METS.

COLLEGE OF SOUTHERN NEVADA LAS VEGAS SCIENCE AND TECHNOLOGY FESTIVAL

In partnership with NASA, College of Southern Nevada (CSN) and Senator Reid's Office, Nevada NASA EPSCoR and Space Grant Consortium provided an exhibit for the Las Vegas Science and Technology Festival - Campus Tech Expo in April, 2015.

The exhibit included Orion command module and SMS rocket models, Retired astronaut Lee Archambault, NASA high altitude balloon with information from Dr. Brendan O'Toole, UNLV (talking to students in photo below), a NASA Engineer from Houston answering questions about Orion, a NASA Southwest video and much more!