# **Nevada NASA Space Grant Consortium**

nvspacegrant.org

## **Overall Goal**

The Nevada NASA Space Grant Consortium (NVSGC) program is to create and expand opportunities for Nevada students and faculty to be active valued participants in our nation's NASA aeronautics and space programs.

The NVSGC program continues the ongoing efforts to create inclusion at the Community Colleges. Faculty have been identified to serve as NASA Space Grant Campus



Associate Directors at each NSHE institution to help foster awareness of funding opportunities available to both students and faculty.

- Faculty Seed Grants Funding ranges from approx. \$4,000 to \$30,000, with 1:1 matching required
- Research Infrastructure Building People and material infrastructure
- Curriculum Development New courses and improving/expanding existing curriculum
- Informal Education Outreach to the community to increase involvement and awareness in STEM
- Pre-College Training Training/Research exposure for students who are or will be STEM educators
- Hands On Training Providing research/project hands on training to further exposure to STEM
- Student Engagement Scholarships ~\$2,500 per semester and Fellowships ~\$13,000 per semester



Volunteers at the Nevada Society of Professional Engineers Outreach Kit Building Activity Photo by Brook Demitropoulos

## **K-6 STEM Education**

Hands-on activities are introducing the engineering design process to K-6 students through a competitive process award to Dr. Dave James, UNLV. In 2014, Dr. James conducted outreach activities to 1,372 K-6 students directly. Leveraging with other Nevada businesses and groups has enabled more students to become excited about science, technology, engineering and math (STEM).

One of his outreach activity collaborations is to provide supplies to the Nevada Society of Professional Engineers bucket kit program for elementary aged students. The 5-gallon bucket kits are filled with activities to show students that engineers use STEM in their jobs and that Engineering is fun! Volunteers gathered on Saturday, January 31, 2015 to assemble 130 bucket kits to reach 9,450 students.

## **Community of Practice (CoP)**

CoP's were developed at Western Nevada College, Great Basin College and Truckee Community College with funding from the NVSGC A Community College Partnership Creating a Community of Practice Model to Engage and Retain Minority Students program.

CoP was developed to introduce students to STEM (science, technology, engineering and math) disciplines. This spring 15 students will receive a \$2,000 scholarship, degree planning and science study. "The program recruits students to engage them at a higher level of thinking and hands-on activities," said Lori Brazfield, director of the Nevada System Sponsored Programs office. "CSN is leading the community of practice model."



CoP students at the College of Southern Nevada Photo by Camille Naaktgeboren

## NASA EPSCoR epscorspo.nevada.edu/nasa





#### Message from Dr. Lynn Fenstermaker New NASA EPSCoR & NASA Space Grant Consortium Project Director

It's an honor to have been selected as the Director of these two great NASA programs. I truly look forward to working with NSHE faculty and students to expand Nevada's STEM research infrastructure and educational opportunities to help meet the NASA mission and goals. Both of these programs have fostered successful research and education projects for Nevada since their inception.

Moving into the future, I look forward to helping grow Space Grant projects so that more of Nevada's college and K-12 students can become excited about science, technology, engineering and math (STEM) and participate in providing a better future for Nevada, NASA and our nation. Through the NASA EPSCoR opportunities, I'm excited to help our NSHE faculty improve their research knowledge base and gain new infrastructure so that they can competitively participate in current and future research challenges of benefit to NASA.

## **Research Highlights**

Multi-institution and multi-discipline awards:

- Advanced Computer Vision, Robotics, and Visualization Algorithms for Improving Planetary Exploration and Understanding, *Lead Science PI: George Bebis, UNR; M. Nicolescu, UNR; T. Jackman, DRI; D. Norpchen, DRI; E. Regentova, UNLV*
- Advanced Electroactive Polymer Sensors and Actuators for Aerospace Robotic Applications, Lead Science PI: Kwang Kim, UNLV; K. Leang, UNR; D.C. Lee, UNLV; A. Vollstedt, TMCC; W. Yim, UNLV



Photo by NASA/ESA/Samantha Cristofertti

 Building Capacity in Interdisciplinary Snow Sciences for a Changing World, Lead Science PI: Obrist, Daniel, DRI; A. Burray, DRI; R Schumer, DRI; Ian McCubbin, DRI; H. Moosmuller, DRI; S. Tyler, UNR; E. Hausrath, UNLV; J. Raymond, UNLV; Gail Ferrell, TMCC

### **Summer Internships**

Three University of Nevada, Reno undergraduates completed summer 2014 internships with NASA on autonomous systems and computer vision projects. David Frank and Josh Curtis interned at the NASA Ames Research Center at Moffett Field, California and Shubham Gogna at the Jet Propulsion Laboratory - NASA in Pasadena, California.

- "The opportunity was not just a job, it was a chance to participate in the progress of the field," said David Frank.
- "I used some techniques from computer vision to reduce the amount of searching that our algorithm did," Curtis said.
- "Without a doubt, the coolest part about working at NASA JPL was meeting and working with the researchers," Gogna said



Photo by NASA

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