NSF EPSCoR
BUILDING THE STEM WORKFORCE IN NV

The **Nevada STEM Mentor Network** provides access to Nevada's finest mentors and premier research projects.

Nevada students in the science, technology, engineering and math (STEM) fields will now have improved access to experienced research mentors. The Nevada STEM Mentor Network, stemmentor.epscorspo.nevada.edu, provides an extensive searchable database of faculty research mentors together with access to research opportunities and partnerships in STEM via a single interactive, user-friendly website.

"With this website the intent is to engage students further in STEM research opportunities and ultimately help build the STEM workforce in Nevada," says Michele Casella, the Education, Outreach and Diversity Administrator for the Nevada System of Higher Education Sponsored Programs & EPSCoR Office.

The network also aims to serve the STEM faculty in Nevada. In the Nevada System of Higher Education (NSHE) many researchers are already active as mentors. Now these mentors can easily submit their profile and any current opportunities they have in STEM research. The researchers can also use the resource to connect with other members of the NSHE to share research opportunities and collaborations.

"Creating successful role models in STEM fields can have a tremendous impact on students," said John V. White, chancellor of the Nevada System of Higher Education. "Matching students with faculty mentors will increase student success, confidence, and persistence in these important fields. The STEM Mentor Network is an outstanding statewide resource for students at all NSHE institutions."

We Are Committed to Connecting
Nevada Students and Faculty to Research Opportunities

NEVADA STEM
MENTOR
N E T W O R K

ANNOUNCING ASSOCIATE PROJECT DIRECTOR

Nevada NSF EPSCoR announces the new associate project director, **Dr. Jay Arnone**. After a statewide NSHE search, the Vice Presidents of Research approved the recommendation made by the search committee to appoint Arnone. Dr. Arnone will take on this role and continue his work at Desert Research Institute where he is a research professor in the Earth and Ecosystem Sciences division primarily studying how global change, including climate change, is affecting the ecology of terrestrial ecosystems.

As the associate project director, his main focus in the first year will be to work with the project director and Nevada EPSCoR office to develop a competitive proposal for the next Track 1 NSF solicitation. The pre proposals have already been received and reviewed and the topical area has been selected which aligns with the Governor's sector for renewable energy and will build research infrastructure for Nevada.

Dr. Arnone is very familiar with NSF and NSF EPSCoR. He was instrumental in designing and establishing, under the Nevada NSF EPSCoR "Climate Change" project, the Nevada Climate and Ecohydrological Assessment Network (NevCAN) whose major purpose is to quantify how climate varies and is changing across the ecosystems of the Great Basin and how this variability affects ecosystem processes that control water availability and supply. During his 18 years at DRI, Dr. Arnone has received NSF grants of over $3.4M as PI and $1.3M as a Co-PI. He looks forward to maintaining this record of success with NSF as Associate Project Director of NSF EPSCoR in Nevada.

# NSF EPSCoR

NEW FACULTY HIRE SPOTLIGHT

Dilek Uz is a research assistant professor at the Economics Department of the University of Nevada, Reno. She is an applied microeconomist who speciializes in the economics of renewable energy resources particularly solar energy. Her area of interests include the interconnection of economics, politics, and the regulatory landscape of distributed generation in the United States as well as how the storage technology and using state of the art machine learning methods for solar forecasting can affect the economics of solar. Dilek has graduated with a PhD from UC Berkeley in the field of Environmental and Resource Economics in May 2016.

UNDERGRADUATE WINS FIRST PLACE

Cilla Jose, University of Nevada, Las Vegas won first place for the undergraduate division in the **Southern Nevada Division of the American Chemical Society Research Poster Contest**, November, 2016. Title of the Poster: Spectrally-Selective Copper-Oxide Spinel Absorber Coatings for High Temperature Concentrated Solar Power Systems.

Ms. Jose was a scholarship recipient of the 2016-2017 Undergraduate Research Opportunity Program (UROP) funded by NSF EPSCoR.
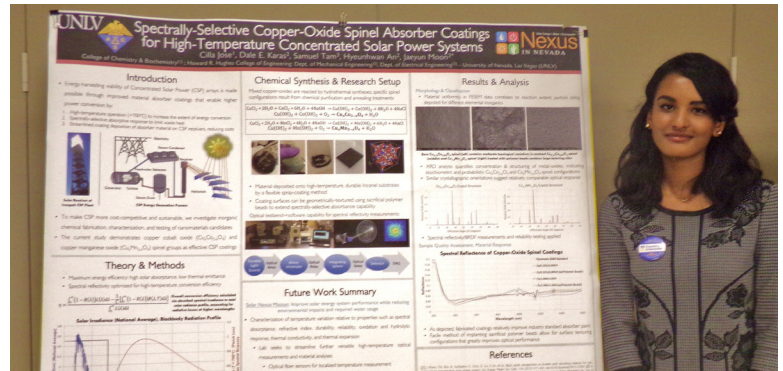
NASA EPSCoR

ADVANCED COMPUTER VISION, ROBOTICS, AND VISUALIZATION ALGORITHMS FOR IMPROVING PLANETARY EXPLORATION AND UNDERSTANDING

Dr. George Bebis, professor of Computer Science and Engineering at University of Nevada, Reno and his statewide team including Dr. David Feil-Seifer at the University of Nevada, Reno, Dr. Emma Regentova at the University of Nevada, Las Vegas and Dr. Eric V. McDonald at Desert Research Institute completed a **NASA EPSCoR research CAN,** which was funded in 2011 for $750,000 with state special projects match of $375,000.

The UNR team developed a new technique for horizon line detection using machine learning to aid in determining rover location and orientation. They also worked on detecting craters from orbital images by developing a novel methodology that employs convex grouping for extracting candidate crater regions and machine learning for verifying them. The UNLV team developed new techniques using GPU boards as well as an interactive rock segmentation and quantification (RSQ) tool to reduce image noise. The RSQ tool allows users to select an area of interest, segment rocks of interest, and calculate various rock properties based on color, texture, and shape. The DRI team employed image and elevation data analysis techniques for mapping rover mobility over a landscape that exhibits variable surface lithology and geometries.

The research faculty members have strengthened collaboration with NASA as a result of this NASA EPSCoR project and worked with the Intelligent Robotics Group (IRG) at NASA Ames. Research results have been incorporated in student classes and seminars have been provided by invited NASA researchers. Highly qualified students have been involved in this project as research assistants or summer interns.

Return on Investment from this NASA EPSCoR CAN:

- $7.4 million
- 11 awards to Nevada with follow-on funding
- 18 publications in peer-reviewed journals
- 20 research students

EPSCoR NEVADA