



RII TRACK-2 AWARDS

Leveraging Big Data to Improve Prediction of Tick-Borne Disease Patterns and Dynamics

The University of Nevada, Reno (UNR) has been awarded two National Science Foundation EPSCoR RII Track-2 FEC projects. The first, [Leveraging Big Data to Improve Prediction of Tick-Borne Disease Patterns and Dynamics](#), in collaboration with the University of Idaho and Dartmouth College, will build capacity across traditional boundaries of research and practice, with an aim to change the way people tackle tick-borne diseases (TDs). This project will contribute to NSF's big ideas on Harnessing the Data Revolution and Growing Convergence Research through data-intensive research for improved prediction of TDs. The central scientific hypothesis is that, climate change will increase the prevalence of TDs throughout the western US, both through altering the geographic and seasonal distributions of ticks as well as interacting factors of environment, ecology, socioeconomics, and human behavior. The project team will collect and develop application-level datasets, knowledge graphs, tools, and innovative data science methods to advance the understanding of factors, patterns, and risks for TDs in the western US.



UNR Co-PI: Fred Harris, Department of Computer Science and Engineering

Highly Predictive, Explanatory Models to Harness the Life Science Data Revolution

The second RII Track-2 FEC project, [Highly Predictive, Explanatory Models to Harness the Life Science Data Revolution](#), in collaboration with the University of Wyoming and the University of Montana, will further develop computational, statistical, and machine learning methods for multi-dimensional data to develop highly predictive and explanatory models for the life sciences. The project investigators and postdoctoral researchers at the three institutions will create an integrated, highly collaborative and interdisciplinary consortium of data scientists. They will develop educational tools to aid the dissemination of the methodologies created, promoting the efficient use of high dimensional data in the life sciences.



UNR Co-PI: Joanna Blaszcak, Department of Natural Resources and Environmental Science

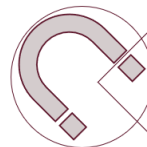
ENGAGING STUDENTS IN STEM WITH HANDS-ON EXPERIENCES

The College of Engineering's Educational Outreach Programs at the University of Nevada, Reno (UNR) received supplemental funds from the Solar Nexus project during Fall 2020 to build upon the work started by Dr. Erica Marti at the University of Nevada, Las Vegas (UNLV) and her team. Faculty, undergraduate and graduate students collaborated to build educational solar energy kits and adapt lessons to a virtual format despite the challenges caused by COVID-19. One of the virtual programs that used the lessons was the newly developed Engineering Explorers virtual after school program. The Mobile Engineering Education Lab (ME2L) presented lessons to more than a dozen classrooms via Zoom. Additional lessons and curriculum units are being designed for future virtual and in-person educational opportunities.

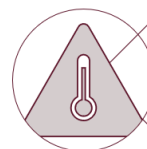
NEW RII TRACK-4 AWARDS



Quantum Control of Molecular Interactions with External Electromagnetic Fields: From Few to Many-Body Physics
(Lead PI: Timur Tschersbul; University of Nevada, Reno)



Mechanistic Design of Hierarchical Metal-MAX Multilayered Nanocomposites
(Lead PI: Siddhartha Pathak; University of Nevada, Reno)



Low-temperature Laser Sintering and Melting of Semiconductors Through Selective Excitation of Soft Phonons
(Lead PI: Yan Wang; University of Nevada, Reno)

WORKFORCE DEVELOPMENT



NEVADA STEM
MENTOR
NETWORK

Online resource to connect students with faculty mentors and research projects.



PATHWAYS TO STEM
NEVADA

Online resource outlines the potential pathways, via state programs and institutes, to a STEM Career.



EPSCoR **IMPACT** in Nevada

Effecting lasting improvements and increasing research competitiveness

74
NEW HIRES
Since 1985

84%
RETENTION IN NEVADA
Since 1985

468
PROPOSALS AWARDED
Since 1985

NSF EPSCoR PROJECT (NEXUS)
265
Faculty, post docs, graduate students, undergraduate and administrators

NASA EPSCoR RID (2012-2020)
255
Participants and 103 students involved



SOLAR NEXUS IN NEVADA UNDERGRADUATE RESEARCH OPPORTUNITY PROGRAM (UROP) FEATURED IMPACT IN 2016 NATIONAL SCIENCE FOUNDATION BROCHURE



\$51.4
MILLION FUNDING
Since 2001



NSHE COUNCIL FOR UNDERGRADUATE RESEARCH (CUR) INSTITUTE FOR BROADENING PARTICIPATION IN UNDERGRAD RESEARCH ASSISTED IN THE DEVELOPMENT OF THE UNLV OFFICE OF UNDERGRADUATE RESEARCH



\$1.5M
AWARDED FOR 235 SCHOLARSHIPS
From 2015 - 2020

NASA EPSCoR RRR CAN

The NASA EPSCoR Program began a new "Rapid Research Response (R3)" program in 2018. The goal is to develop close collaborations among NASA, industry and university faculty to solve specific current NASA research challenges, as well as to contribute to the overall research infrastructure, science and technology capabilities, higher education and economic development of Nevada. The projects are for one year and are expected to produce quick results. Of the 30 R3 projects awarded to-date, Nevada has received 7.



[PLUS 3 CAN & 2 RID AWARDS]

NEVADA'S EPSCoR PROJECT FUNDING



National Science Foundation
Current Projects
2013 - 2020 \$22,073,709
Past Projects
1993 - 2017 \$53,903,783



National Aeronautics and Space Administration
Current Projects
2015 - 2020 \$3,574,721
Past Projects
1993 - 2015 \$10,200,000



Department of Energy
Past Projects
2000-2010 \$4,150,000



Department of Defense
Past Projects
2002-2011 \$4,177,659

[RETURN ON INVESTMENT: \$243.6 MILLION 2.5:1]

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