



FALL 2025

NSF EPSCoR

NSHE MENTORING INSTITUTE 2025

Building on the momentum of the previous year, the **2025 NSHE Mentoring Institute (MI2025): Creating a Culture of Support for Research & Learning Through Mentorship, Collaboration, and Effective Communities of Practice** was held on October 8–9, 2025, at the Alexis Park Resort in Las Vegas. MI2025 brought together a diverse group of faculty, administrators, graduate students, and postdoctoral scholars from across the Nevada System of Higher Education (NSHE) and served as a high-energy, collaborative forum designed to move beyond traditional mentoring models. Facilitated by national experts from the Council on Undergraduate Research (CUR), the two-day event provided participants with intensive training focused on building sustainable and inclusive programs, practices and partnerships to promote mentorship across NSHE. Participants identified new strategies to broaden student engagement, ensuring that undergraduate research opportunities are accessible to Nevada's diverse student populations.



NSHE faculty and graduate students participated at the 2025 NSHE Mentoring Institute (Credit: Michele Casella)

HDRFS DEPLOYS NEW TECHNOLOGY IN FIELD CONTROLLED BURNS

In November 2025, the Harnessing the Data Revolution for Fire Science (HDRFS) research team reached a major project milestone in wildfire science with the successful execution of their first field-based controlled burns. After months of meticulous planning, the team deployed a newly installed mobile flux chamber and utilized advanced drones to collect critical data during and after the fires. This achievement is a centerpiece of the broader HDRFS project—a five-year, \$20 million NSF EPSCoR-funded initiative designed to transform Nevada's capacity for wildland fire research.



HDRFS research team conducting their first field-based controlled burns. (Credit: Maureen Saccomani)

NASA EPSCoR

NSHE SECURES \$750,000 NASA EPSCOR GRANT FOR RESEARCH INTO UNDERGROUND ECOSYSTEMS THAT COULD INFORM THE SEARCH FOR LIFE BEYOND EARTH

By Elizabeth Callahan, Public Information Officer, NSHE

The Nevada System of Higher Education (NSHE) has secured a \$750,000 grant from NASA's Established Program to Stimulate Competitive Research (EPSCoR) to study unique underground ecosystems powered by radiation instead of sunlight. The findings could help guide NASA's search for life beneath the surfaces of Mars and icy worlds elsewhere in the solar system.



"This award highlights the strength of our institutions and the talent of Nevada's researchers," said Board of Regents Chair Byron Brooks. "By working together, DRI, UNR, and UNLV are advancing discoveries that not only contribute to scientific progress but also strengthen Nevada's role in meaningful research and innovation."

The project will focus on what scientists call radiolytic ecosystems. Instead of sunlight, the energy that supports life comes from radiation splitting water. When this happens, it produces hydrogen and oxygen compounds that microbes can use as a source of energy, creating the foundation for life deep below the surface.

With the exception of Earth, all known planetary surfaces are often too harsh for life; many scientists believe that the best chance of finding extraterrestrial life in our solar system is underground. Radiolysis may also have been an important energy source in Earth's earliest ecosystems, making this project relevant both to the search for life elsewhere and to understanding the origins of life on our own planet.

The Nevada team will collect samples from underground sites in Nevada and the Southwest. They will then study them in the lab to see how microbial communities use radiation byproducts to survive. Their findings will help NASA refine strategies for detecting life in subsurface environments beyond Earth.

The project is a collaboration between NSHE institutions and NASA's Ames Research Center. The research team is led by Duane Moser of DRI, with co-investigators Brian Hedlund of UNLV and Wendy Calvin of the University of Nevada, Reno, who bring expertise in subsurface microbiology, microbial ecophysiology, and planetary geology to the project. In addition to advancing planetary science, it will provide opportunities for postdoctoral fellows, graduate students, and undergraduates to participate in cutting-edge research.

"Driving research and innovation that solves problems and prepares students for the future is a key priority of the Board of Regents," said NSHE Chancellor Matt McNair. "This project demonstrates how our institutions work together and partner with NASA to achieve both scientific discovery and student opportunity."



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