

October 8, AM Sessions

Values, Challenges and Opportunities for Research Experiences and Mentorship *in Nevada*

Part 1:

Consider a successful mentoring relationship.

How did it develop?

What aspect(s) made it successful?

What features of mentorship models (teams, interdisciplinary, inclusion) are present?

What are/were the outcomes?

Part 2:

What are values that frame the work you do to support research?

Panel Discussion Reflection

A note-taking format

Program, Institution, Goal	Successful outcome Resources involved	Challenge & relevant barrier
Research Immersion Internship Program, Meghan Collins , Desert Research Institute		
UNLV Research Mentoring Program Highlights - Joanna Jeziarska , <i>Research & Mentorship Pathways</i> - Alissa Gardner , <i>Grad Rebel Advantage & The Grad Academy</i> - Nicole Thomas , <i>Office of Undergraduate Research Programs</i>		

NSU Undergraduate Research Programs, Aster Sigel , Nevada State University		
Nevada STEM Mentor Network, Michele Casella , NSHE Sponsored Programs & EPSCoR		

What program did you enjoy the most?

What components of the program were most interesting to you? And why?

What are some successes (outcomes)? What has made it a success (resources)?

Think about a program that identified a challenge- what were the barriers? Do you have similar challenges? Do you have resources that could help navigate these challenges?

What are the common challenges facing programs?

Speed Networking Preparation: Include examples of

- (1) Tiered mentorship
- (2) Interdisciplinary research
- (3) Practices that are supportive of inclusion.
- (4) Other ideas

Speed Networking Reflection: what did you hear about challenges and successes related to

- (1) Tiered mentorship

Success

Challenge

- (2) Interdisciplinary research

Success

Challenge

(3) practices that are supportive of inclusion.

Success

Challenge

(4) Other practices

Success

Challenge

What expertise/experience do you bring to the table that would benefit needs within the network? Alternatively, how would you see yourself contributing to the goals of your Nevada network?

October 8 Afternoon Session:

Characteristics of Excellence in Undergraduate Research (COEUR) - A Roadmap: Building Excellence in Undergraduate Research

Part 3:

What is one characteristic that appeals to you/stands out for you? *See COEUR handout*

How do the takeaways from Panel Discussion and Speed networking align with specific Characteristics of Excellence?

Are there any characteristics that you feel your program(s) exemplifies?

Are there any characteristics where you feel that you need to improve within your program to achieve excellence?

What might be some goals you would strive for?

From Guidance to Growth: Defining Tiered Mentorship and Mapping Needs and Assets

Part 4:

What is mentoring, who are mentors, what is it important to you, how does it work, what makes it successful?

What do you take from the definition provided?

What is tiered mentoring?

What are advantages of tiered mentoring and mentoring constellations?

What is your context for tiered mentoring? Identify participants in this relationship/structure. Consider the role of near-peer mentors, multiple mentors, mentors at different career stages.

Consider “learner needs” and examine how you would use tiered mentorship to respond to the needs of the mentee(s)

What are the desired outcomes- i.e how would the structure and its work benefit your work, your institution, your network?

What are the group’s mentoring needs?

What are the group's collective resources and assets?

Mentorship at the Margins: Building Projects Where Inclusion and Collaboration Meet

- PART 5: Faculty & Staff

What is a project you would propose? *Consider (1) Your responsibilities in Teaching, Research and Service and (2) The network goals of integrating interdisciplinary research teams and building an effective culture of support*

Who will participate?

What are the desired outcomes

- PART 5: Student, Post-doc, & Staff

What is a project you would propose? *Consider (1) Your current roles and future career aspirations and (2) The network goals of integrating interdisciplinary research teams and building an effective culture of support*

Who will participate?

What are the desired outcomes

October 9, 2025

Bringing it together

8:30 am – 8:50 am

Day 1 Debrief & Launchpad: Mapping the Mentoring Path to MI2026

8:50 am – 9:30 am

Achieving **Excellence in Research Mentorship** with Collaboration & Inclusive Culture

9:30 am – 10:00 am

Aligning Resources to Vision: Leveraging Resources to Achieve Undergraduate Research Mentorship with Collaboration & Inclusive Culture Excellence

PART 6: developing your collaborative project

Your Collaborative Project Title:

Purpose/Goals

What are the outcomes you envision?

What is your deliverable as a group, for the 2026 meeting?

Who will participate- Names/Institutions/Departments; Identify leads/co-leads for the project

What resources will be needed (Time, Personnel, Materials, etc)

How often will you meet? What do you hope to accomplish at each meeting?

10:15 am – 11:15 am

Blueprints & Timeline for Impact: Advancing Communities of Practice through Mentorship with Collaboration & Inclusive Culture

11:15 am – 11:45 am

Vision to Reality: Preparing for a Transformative Mentoring Institute 2026 – Establishing 1 Year Outcomes

PART 7: Feedback on Work plan, Retool, Submit

- Each group makes brief presentations on their project, its timeline and deliverables
- Obtain feedback, and retool as needed
- A work plan for each community of learners/ community of practice is submitted to workshop organizers. Identify leads and co-leads for each group.

11:45 am – 12:00 pm

The Final Bite: Reflections, Evaluations, and Continued Dialogue

Resource Links:

Council on Undergraduate Research - cur.org

[Characteristics of Excellence in Undergraduate Research](#)

[MIRIC website](#) (part of CUR)

[Nevada EPSCoR](#)

[Nevada System of Higher Education](#)

[HDRFS EPSCoR](#)

[Nevada EPSCoR, S & T Plan, 2020](#)

[Qualities of a mentor](#)

[Nevada STEM MENTOR Network](#)

Johnson, W. Brad. 2016. *On Being a Mentor: A Guide for Higher Education Faculty*. Routledge.

[Wendy Nuis, et al Conceptualizing mentoring in higher education: A systematic literature review, Educational Research Review, 2023](#), - Includes a map of mentoring characteristics

[Professional learning and development framework for post-doctoral Scholars. Nowell, 2021](#)

[The comprehensive researcher development framework \(CRDF\): Core learning outcomes for research training, Branchaw et al, 2025](#)

[Research Skill Development \(RSD\) Framework](#)

[Undergraduate Research as a framework for curricular and pedagogical decision making](#), Brew 2013

[Mentorship in STEM- National Academies press - 2019](#)

[Vertically Integrated Approach](#)

[Nevada mentor constellation](#)

[Lotrecchiano, G.R., Bennett, L.M. & Vovides, Y. A framework for developing team science expertise using a reflective-reflexive design method \(R2DM\). *Humanit Soc Sci Commun* 10, 810](#)

[\(2023\).](#)

[Cravens, A.E., Jones, M.S., Ngai, C. *et al.* Science facilitation: navigating the intersection of intellectual and interpersonal expertise in scientific collaboration. *Humanit Soc Sci Commun* 9, 256 \(2022\).](#)

[Love, H.B., Cross, J.E., Fosdick, B. *et al.* Interpersonal relationships drive successful team science: an exemplary case-based study. *Humanit Soc Sci Commun* 8, 106 \(2021\).](#)

[Duhigg Ch \(2016\) What google learned from its quest to build the perfect team-The New York Times.](#)

[Woolley AW, Chabris CF, Pentland A, Hashmi N, Malone TW \(2010\) Evidence for a collective intelligence factor in the performance of human groups. *Science* 330\(6004\):686–688.](#)

[2005 NAS Report](#)

[Grand Challenges in Engineering](#)

[Inclusive Research Dimensions](#)

[Values driven research culture](#)



NEVADA SYSTEM OF
HIGHER EDUCATION

Strategic Plan

Approved by the Board of Regents



NSHE Mission Statement

The mission of the NSHE is to provide higher education to the citizens of the state at an excellent level of quality consistent with the state's resources.

It accomplishes this mission by acquiring, transmitting, and preserving knowledge throughout the region, nation, and world.

The System provides an educated and technically skilled citizenry for public service, economic growth and the general welfare contributes to an educated and trained workforce for industry and commerce, facilitates the individual quest for personal fulfillment, and engages in research that advances both theory and practice.

NSHE Vision

One system. Worlds of opportunities.

NSHE Values

In serving the students who come to us for postsecondary education...

1. We strive for **Equity** in access and outcomes for all.
2. We pride ourselves on **Excellence** in our work.
3. We work in **Collaboration** across teams, institutions, and communities.
4. We recognize that **Innovation** improves our ability to serve.
5. We expect **Accountability** from all leadership, faculty, staff, and students.
6. We embrace a culture of **Inclusion** where every individual belongs.

NSHE Goals

1. Increase **access** to higher education.
2. Improve student **success**.
3. Close institutional performance **gaps**.
4. Meet **workforce** needs in Nevada.
5. Increase solutions-focused **research**.
6. Ensure system **coordination, accountability, and transparency**.



PROJECT OVERVIEW

The overarching goal of the R1 Trade-I is: Advancing the Data Revolution for Fire Science (HDRFS) project is to increase the capacity of Nevada for wildland fire research, education, and workforce development and to demonstrate this increased capacity through technology-enhanced fire science in the regionally important sagebrush ecosystem.

This project addresses Grand Challenges by the National Science and Technology Council for reducing and mitigating wildland fire-related disasters in the western U.S. due to changes in wildfire regimes and increased wildfire potential (WIF). Nevada and its neighboring states have the highest WIF in the nation. This project will fill knowledge gaps about fire processes and their effects on smoke emission, ecology, and hydrology in the sagebrush ecosystem of the intermountain west.

HDRFS MISSION STATEMENT:
 THE HDRFS PROJECT MISSION IS TO INCREASE THE CAPACITY AND EXCELLENCE IN NEVADA FOR WILDLAND FIRE RESEARCH, RESEARCH INFRASTRUCTURE PLANNING AND COORDINATION, EDUCATION, AND WORKFORCE DEVELOPMENT AND TO DEMONSTRATE THIS THROUGH TEAM SCIENCE IN THE REGIONALLY IMPORTANT SAGEBRUSH ECOSYSTEM.

These fire science areas will be supported by Education/Workforce Development, creating end-to-end pipelines for research and STEM advancements. HDRFS has an integrated approach through the common topics of scaling of wildland fire processes and effects, joint prescribed burn experiments, and common data-focused technology platforms.

This project will develop infrastructure and build capacity for the characterization of pre- and post-fire ecosystem carbon and water fluxes, fire processes and emissions, and for Computer Vision / Machine Learning (CV/ML) analysis including data fusion and products.

HDRFS deeply integrates with Nevada education and workforce development via educational activities, mentorship, and other efforts in the Nevada System of Higher Education (NSHE) to grow a nimble and diverse STEM workforce.

The project draws on strengths of data and wildland fire science through a series of focused activities to train teachers and students. The proposed research and educational activities will advance Nevada STEM capacity and all major components of this proposal are focus or priority areas of the Nevada Science and Technology Plan.

BROADER IMPACTS

HDRFS will help Western U.S. communities to reduce wildland fires impacts related to human smoke exposure and safety, ecosystem services (e.g., water supplies and recreational opportunities), and wildland fire management. Integrated educational activities will:

- ✓ Advance the abilities of pre-service and in-service NV educators to teach basic systems modeling through fire science to students with standards-based materials;
- ✓ Increase access to STEM research for NV PUI students through data analytics scholarships followed by three-month project internships;
- ✓ Broaden STEM research participation through proposal-writing workshops for applicants for Undergraduate Research Opportunity Program scholarships (UROPN).

Recruiting underrepresented students, postdocs, and faculty, and establishing new educational programs, will build a larger, more diverse NV STEM workforce.

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LAND AND NATURAL RESOURCES

Water Resources
Sustainable Energy.....
Environment and Natural Hazards.....
Agriculture and Food Security.....
Policy and Economics.....

INTEGRATED HEALTH AND WELLNESS

Health Care Access and Research.....
Microbiology and Immunology.....
Neuroscience.....
Policy and Economics.....

DIGITAL TECHNOLOGIES

Networking
Cybersecurity
(Big) Data Management.....
Computing Systems
Software and Automation
AI/ML and Analytics

INFRASTRUCTURE AND INDUSTRIAL TECHNOLOGY

Transportation
Advanced Materials
Biotechnology.....
Robotics
Advanced Manufacturing.....
Logistics.....
Mining.....

COMMON STRATEGIES FOR SUCCESS

Workforce Development.....
Technology Transfer.....
Cyberinfrastructure
Communication and Outreach
Convergence Research.....