

## Minutes

Monday, August 13, 2018 from 2:00 pm – 3:00 pm

1. Roll Call – Marcie Jackson
  - a. Present: Greg Ihde, Joe Grzymiski, Dave Archer, Tammy Bolen, Grace Chou, Zach Miles, Gayle Dana, Lynn Fenstermaker, Marcie Jackson
  - b. Absent: Jason Mendenhall, Ellen Purpus, and Joyce Woodhouse
2. Welcome - Greg Ihde
  - a. Greg welcomed Grace Chou as the replacement for Cory Hunt for the Governor's Office on Economic Development. Grace is involved in advanced manufacturing. The Research Affairs Council (RAC) has approved this appointment.
3. NSF EPSCoR Track 1 Proposal Status and Determination of Research Theme(s) – Dr. Gayle Dana
  - a. The last Track 1 proposal Nevada submitted was not selected for funding. Due to the late notice of not being selected, and the extensive changes that would have needed to be made to the rejected proposal, it was decided not to re-compete in 2018. Instead researchers will be given the opportunity to develop new pre-proposals with new research ideas.
  - b. NSHE SPO/EPSCoR, Project Director and the Research Affairs Council have reviewed NSF requirements and Nevada priorities. They propose the following theme requirements for the next pre-proposal process:
    - i. alignment with priorities in the [2015 NSHE Science and Technology Plan](#);
    - ii. alignment with one or more of [NSF's Big Research Ideas](#) or other scientific grand challenges;
      - 1) Harnessing the Data Revolution;
      - 2) The Future of Work at the Human-Technology Frontier;
      - 3) Navigating the New Arctic;
      - 4) Windows on the Universe: The Era of Multi-Messenger Astrophysics;
      - 5) The Quantum Leap: Leading the Next Quantum Revolution;
      - 6) Understanding the Rules of Life: Predicting Phenotype
    - iii. topics funded by NSF's regular programmatic and cross-cutting areas; and
    - iv. leverage the strengths of all NSHE research institutions.
  - c. The NVEAC members discussed and agreed these research themes are appropriate. NSHE SPO/EPSCoR will send out an announcement about the themes and begin the pre-proposal announcement process.
4. NASA EPSCoR Rapid Response Proposal – Dr. Lynn Fenstermaker

- a. NASA announced a Rapid Research Response RFP unexpectedly in June. The intent is to promote collaboration among EPSCoR faculty, NASA and the space industry. There were eight topic areas of interest and each jurisdiction is allowed to submit one proposal per topic area.
  - b. NSHE SPO/EPSCoR and the Project Director quickly ran an internal competition where Letters of Intent were required to determine interest. We will be submitting one proposal for each topic area.
  - c. Initially NASA only planned to award 5 of these projects, but due to the response, they are trying to find additional funding.
5. DEPSCoR Potential Funding Update – Dr. Gayle Dana
  - a. The Department of Defense last appropriated funding for DEPSCoR in 2009. In FY2019 the Senate Appropriations Committee funded the DEPSCoR program at \$12 million.
  - b. A solicitation should be forthcoming. Nevada will be eligible to prepare a proposal to compete for some of this funding.
6. Renewing Terms and Replacement from GOED – Marcie Jackson
  - a. Joyce Woodhouse agreed to stay on for another term, and this has been approved by the RAC.
  - b. Grace Chou was appointed to replace Cory Hunt.
  - c. Greg Ihde has agreed to stay on for another term.
  - d. Tammy Bolen has suggested a different staff member at Nevada Department of Education take her place upon her term expiring. Marcie will follow up this.
  - e. The Vice President of Research from UNLV has suggested a name for a replacement for Carl Reiber. Marcie will follow up on this.
7. New Business
  - a. Greg Ihde reminded members about the AFWERX group meetings. Anyone is invited to join.  
<http://www.nationaldefensemagazine.org/articles/2018/4/27/air-force-accelerating--acquisition-with-afwerx>
  - b. Dave Archer mentioned that NCET is always looking for interesting speakers and white paper. Marcie will send him a few ideas on speakers.  
<https://ncet.org/category/biz-cafe/>

## Nevada NSF EPSCoR RII Track-1 Update: *Theme Requirements Finalized*

### **The Opportunity**

Nevada will be eligible to submit a new proposal to the National Science Foundation's (NSF) Established Program to Stimulate Competitive Research (EPSCoR), Research Infrastructure Improvement Program Track-1 (RII Track-1) program in 2019. NSF limits EPSCoR-eligible states to a single RII Track-1 proposal submission. Therefore, the Nevada System of Higher Education (NSHE) will conduct a pre-proposal competition to assist NSHE in identifying the pre-proposal most likely to result in an award under NSF's 2019 competition.

### **NSF EPSCoR RII Track-1 Awards**

RII Track-1 awards provide up to \$4 million per year for up to five years. They are intended to increase the research competitiveness of jurisdictions by improving their academic research infrastructure in areas of science and engineering supported by NSF and critical to the jurisdiction's science and technology plan. [NSF EPSCoR's website](#) has more details on the Track-1 program, the most recent [solicitation](#), and [active awards](#).

### **Finalized Theme Requirements**

The proposed research theme must be of national importance and have the best potential to improve Nevada's future research and development competitiveness. As determined by the [NSHE Research Affairs Council](#) and the [Nevada EPSCoR Advisory Committee](#), proposed research topics must have these features:

- alignment with priorities in the [2015 NSHE Science and Technology Plan](#);
- alignment with one or more of [NSF's Big Research Ideas](#)<sup>1</sup> or other scientific grand challenges;
- topics funded by NSF's regular programmatic and cross-cutting areas; and
- leverage the strengths of all NSHE research institutions.

### **What can NSHE researchers do now?**

In preparation for submitting a pre-proposal, NSHE researchers should start discussions and form preliminary teams now to develop concepts, research questions, and expected impacts on strategic research topics. Since this is a statewide program, teams should be well represented with researchers from UNLV, UNR, and DRI. **Working as an integrated team is essential!**

A [Discussion Forum](#) has been setup to facilitate connecting with researchers from other institutions.

**For more information please contact:** Gayle Dana, Nevada NSF EPSCoR Project Director & State EPSCoR Director; [gayle.dana@dri.edu](mailto:gayle.dana@dri.edu) 530-414-3170

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<sup>1</sup> 1) Harnessing the Data Revolution; 2) The Future of Work at the Human-Technology Frontier; 3) Navigating the New Arctic; 4) Windows on the Universe: The Era of Multi-Messenger Astrophysics; 5) The Quantum Leap: Leading the Next Quantum Revolution; 6) Understanding the Rules of Life: Predicting Phenotype

**Draft Timeline**

Pre-proposal solicitation released	mid August 2018
Pre-proposal workshop	early September 2018
Letter of Intent due	October 1, 2018
Pre-proposals due	mid November 2018
External review completed	early January 2019
Winning pre-proposal selected	early January 2019
Full proposal development begins	mid January 2019
Solicitation released by NSF	early May 2019*
Proposal due to NSF	July 31, 2019*
Notification of Awards	Spring 2020
Awards made	Summer 2020

# NASA EPSCoR RRR



Goal: To promote collaborations among EPSCoR Faculty, NASA and the space industry

\$100,000 for one year to work with NASA on a defined problem

# DEFINED PROBLEMS

- **Commercial Space Development Division**
  - 1 **Characterization of C-18150 additively manufactured material**
  - 2 **Characterization of Inconel 625 Blown Powder Freeform Deposition material**
  - 3 **Characterization of GLIDCOP Additively Manufactured material**
  - 4 **Characterization of Bimetallic Joints using Copper-based alloys**
  - 5 **Investigate potential of Mars and Lunar resources**
  - 6 **Investigation of Mars Compatible Plants**
- **Science Mission Directorate**
  - 1 **High-temperature subsystems and components for long-duration surface operations**
  - 2 **Aerial platforms for missions to measure atmospheric chemical and physical properties**

# NSHE LETTERS OF INTEREST

<b>Topic 1</b>		
Sid Pathak	UNR	Macro- and Micro-scale Characterization of Bimetallic Joints using Copper-based alloys for Propulsion Applications
Ryan Sherman	UNLV	Characterization of Bimetallic Joints using Copper-Based Alloys
<b>Topic 2</b>		
Pradeep Menezes	UNR	Micrographs and Mechanical Characterization of Additively Manufactured (AM) Copper Alloy (C-18150) for Regeneratively-Cooled Combustion Chambers and Nozzles
Ryan Sherman	UNLV	Characterization of C-18150 Additively Manufactured Material
<b>Topic 3</b>		
Sid Pathak	UNR	Microstructure and Mechanical Characterization of Additively Manufactured GRCop-42 Developed using Selective Laser Melting
Ryan Sherman	UNLV	Characterization of GRCop-42 Additively Manufactured Material
<b>Topic 4</b>		
Pradeep Menezes	UNR	Characterization of Blown Powder Freeform Deposited (BPFDeD) Inconel 625 for Large Scale Rocket Components
Ryan Sherman	UNLV	Characterization of Inconel 625 and Haynes 230 Blown Powder Freeform Deposition Material
<b>Topic 5</b>		
Kellen Nelson**	DRI	Extreme-environment chemical and physical sampling and sensing: payload development and initial field testing
Hao Xy	UNR	A Novel Networked Multi-mode Swarming Unmanned Aerial Sensing Platform Development
<b>Topic 6</b>		
Elisabeth Hausrath	UNLV	Rock, H <sub>2</sub> O, and H <sub>2</sub> : Energy and resources from water-rock interactions on Mars
<b>Topic 7</b>		
Elisabeth Hausrath	UNLV	Life on Mars: Plant cultivation for long-term food and oxygen production
<b>Topic 8</b>		
Yan Wang	UNR	Engineering the grain boundaries of thermoelectric materials for efficient and damage-tolerant space power applications

# DEPSCoR

- FY 2009 - last year Congress appropriated funding for DEPSCoR (\$14.8M)
- FY 2018 – the National Defense Authorization Act (NDDA) reauthorized DEPSCoR
- **FY 2019 – Senate Appropriations Committee funded the DEPSCoR program at \$12 million.**



Hypersonic Weapons Research  
Top Priority for US  
Undersecretary of Defense -  
for defense against threats by  
China and Russia to overtake  
the US with new technologies