Montana NSF EPSCoR RII Track-1 Information Webinar



<u>April 21, 2021</u>

- Ray Callaway (UM) Current PD/PI
- Rob Walker (MSU) On Deck PD/PI
- Michelle Terwilliger (UM)
- Joe Thiel (OCHE)
- Todd Kipfer (MSU)



NSF EPSCoR and Montana

- 1980: Montana in First Cohort for EPSCoR
- Significant impact on state's higher education R&D infrastructure and competitiveness
- >125 faculty hires, \$100M in awards
- Recent topics: environmental water quality, ecosystems from microbes to landscapes, Hydrogen in the environment/large river systems.



NSF ESPCoR

- RII Track-1: 5 years, \$20M + required 20% match
 - improve research competitiveness by improving their academic research infrastructure in areas of science and engineering supported by the NSF and critical to the particular jurisdiction's S&T initiative or plan
- RII Track-2 FEC: 4 years, \$1-1.5M per year
 - build interjurisdictional collaborative teams of EPSCoR investigators in scientific focus areas consistent with NSF priorities
- RII Track-4
 - research fellowships for non-tenured investigators
- Co-Funding



Advice from MT NSF EPSCoR on a successful Track-1 Proposal and Project

Consortium for Research on Environmental Water Systems (CREWS)









Conceptual RII Track-1 Project



Feedbacks and Adaptation



Timeline

- Concept papers due 5pm May 26, 2021
- August 2021:
 - Selection of 2-3 Concept Papers for white paper development
- October-November 2021:
 - Topic selected, team developed, proposal writing begins
 - Writing support = experienced office + external consultants
 - Established broader engagement network
- ~ July 2022:
 - Letter of Intent due to NSF EPSCoR
- ~July-August 2022:
 - Proposal due to NSF EPSCoR



Jurisdiction Science & Technology Plan

- One proposal per jurisdiction (e.g., state of Montana)
- Topic and proposal must be approved at jurisdiction level
 - MUS Chief Research Officers
 - Montana Science & Technology Committee
 - Office of the Commissioner of Higher Education
 - Must align with current and approved S&T Plan or Initiative
- Projects limited to Montana higher education campuses, faculty, staff, and students
- Research balance between MSU and UM is expected
- Strategic inclusion of MUS/Montana campuses and tribal colleges is functionally important to the state



Administrative Structures

- Project Director/PI: Administrative Lead and primary contact with NSF, OCHE, and CROs
- Co-PIs: Maximum of four
 - <u>Administrative</u>, e.g., sub-award lead
 - Represent leadership in a project area
 - Co-PI status is not needed to represent the importance of a research lead
- Management Team
- State Office
 - Project Administrator
 - Fiscal Administrator(s)
 - Project Management, Evaluation, Reporting, and Communications Professionals
 - EOD, diversity, and broader engagement



Recipe for Success, Nuts and Bolts

- Follow the solicitation
 - Keep <u>merit</u> review criteria in mind
- Write to reviewers and panel
 - Provide detailed information that <u>experts in field</u> need to judge the proposed research
 - But, minimize jargon that complicates review by non-experts
 - Emphasize novel, transformative techniques, methods and potential outcomes
- Track-1?
 - Integrate project elements and jurisdictional impacts
 - Use existing strengths but propose building "infrastructure" through the project with potential to improve research competitiveness
 - Emphasize sustainability



Recipe for Success, PO Feedback

- Research should be driven by questions or hypotheses that place project in the current context of the research area
- Activities should lead to deliverables that support stated goals
- How will success be identified? What will be resulting benefits?
- Claims of integration should be substantiated



Recipe for Success, Faculty Hires

- Faculty Hires can be a powerful project component
- New hires:
 - Should be included where expertise/capacity is needed
 - Should be clearly justified by proposed work
 - Programmatic Terms and Conditions <u>will require hiring</u> to proceed as proposed



Recipe for Success, Montana

- Put together <u>one or more</u> existing strengths and/or priority areas, BUT, those that can be developed to the benefit of Montana
- Must be a single, integrated project
- Focused proposal is key to success
 - Not an "infrastructure" investment program
 - Not a big tent inclusion/funding opportunity
 - Not a "get the funding and then figure out how to spend it"



Considerations

- EPSCoR RII Track-1 is a Cooperative Agreement
 - Incremental Funding
 - Increased reporting and review requirements →
 Administrative Load
 - Strategic Plan is Required
 - Annual reports (20-50 page narratives + required data + research.gov)
 - Two panel reviews (RSV year 2, SV year 4)



Strategic Plan

- •NSF required process/format
- Proposal scope of work
- SWOT Analysis
- Goals
 - Objectives
 - Activities
 - Milestones by year with metrics





AWARD FEA MANAGEMENT EVALUATION 1/2 M EDD & PARTNER CYBER & DATA 12 M RESEARCH

\$20M Award (back of napkin): Consider overhead, statewide team/subawards, and full project requirements in scaling research to topic and proposal





Montana and national priorities

- Start with existing MUS strengths
 - Good to great
 - Linkages across the state
 - Align with NSF/Federal priorities
- Make a case: NSF EPSCoR Track-1 vs. other funding options
- Endless Frontiers Act (https://www.sciencemag.org/news/2020/05/us-lawmakers-unveil-bold-100-billion-planremake-nsf)
 - Artificial intelligence and machine learning
 - High performance computing, semiconductors, and advanced computer hardware
 - Quantum computing and information systems
 - Robotics, automation, and advanced manufacturing
 - Natural or anthropogenic disaster prevention
 - Advanced communications technology
 - Biotechnology, genomics, and synthetic biology
 - Advanced energy technology
 - Cybersecurity, data storage, and data management technologies
 - Materials science, engineering, and exploration relevant to the other focus areas



Recent Track-1 Awards

RII Track-1: Building on The 2020 Vision: Expanding Research, Education and Innovation in South Dakota Award Number:1849206; PI: Gilbert Ustad; Co-PI: Bentley Sayler, Carol Lushbough, Senthil Subramanian, Venkata Gadhamshetty; **South Dakota**

RII Track-1: Ridge to Reef Processes and Interdependent Drivers of Small Island Resilience Award Number:1946412; PI: Kim Waddell; Co-PI: Richard Nemeth, Tyler Smith; Organization: **Virgin Islands**

RII Track-1: Data Analytics that are Robust and Trusted (DART): From Smart Curation to Socially Aware Decision Making Award Number:1946391; PI: Steve Stanley; Co-PI: Jackson Cothren; Organization: **Arkansas**

RII Track-1: Louisiana Materials Design Alliance (LAMDA) Award Number:1946231; PI: Michael Khonsari; Co-PI: Guogiang Li, Shengmin Guo, Miao Jin, Arden Moore; Organization: **Louisiana**

RII Track-1: ND-ACES: New Discoveries in the Advanced Interface of Computation, Engineering, and Science Award Number:1946202; PI: Kelly Rusch; Co-PI:Jean Ostrom-Blonigen, John Mihelich; Organization: **North Dakota**

RII Track-1: Socially Sustainable Solutions for Water, Carbon, and Infrastructure Resilience in Oklahoma Award Number:1946093; PI: Kevin Wagner; Co-PI: Carol Silva, Hank Jenkins-Smith; Organization: **Oklahoma**

RII Track-1: Guam Ecosystems Collaboratorium for Corals and Oceans Award Number:1946352; PI: Terry Donaldson; Co-PI: Bastian Bentlage, Austin Shelton, Rachael Leon Guerrero; **Guam**



Concept Paper

- Short science-focused 2-page concept paper!
- Due: May 26, 2021

