



NSF EPSCoR Climate Change Grant Announcement

On September 1, 2008, NSHE received a grant of \$15 million from the National Science Foundation's (NSF) Experimental Program to Stimulate Competitive Research (EPSCoR). NSHE is also providing support (\$6,597,790 over 5 years) to the project from non-Federal sources.

The 5-year grant will fund science, education, and outreach infrastructure at UNR, UNLV, DRI, NSC, and NSHE's community colleges for the study of climate change and its effects on Nevada.

The project will create a statewide interdisciplinary program that will stimulate transformative research, education, and outreach on the effects of regional climate change on ecosystem services (especially water resources) and support use of this knowledge by policy makers and stakeholders. The project will provide NSHE, the State of Nevada, and the region with new interdisciplinary capability to detect, analyze, and model the effects of regional climate change on landscapes, ecosystems, and water resources and to communicate research results to decision makers and the public. To broaden and increase the impact of this project, Nevada has formed a tri-state collaboration with the EPSCoR states of New Mexico and Idaho, which also received NSF EPSCoR funding for climate change infrastructure this year.

Nevada's NSF EPSCoR project has six main components:

Click on component to view the description

- **Climate Modeling Component** Develop a capability to model climate change at a regional and sub-regional scale and assess its effects on ecosystems and resources to evaluate the effects of different future climate scenarios and adaptation strategies;
- **Ecological Change Component** Develop data collection, modeling, and visualization infrastructure to determine and analyze effects of climate change on ecosystems and disturbance regimes
- **Water Resources Component** Develop data collection, modeling, and visualization infrastructure to better quantify and model changes in water balance and supply under climate change
- **Policy, Decision Making, and Outreach Component** Develop data collection and modeling infrastructure to assess climate change effects on human systems and responses to better understand institutional and societal aspects of climate change and to enhance policy making and outreach to communities and stakeholders
- **Cyberinfrastructure Component** Develop a Data Portal and software frameworks that will support interdisciplinary climate change research via integration of data from observational networks and modeling
- **Education Component** Develop educational infrastructure to train students at all levels and provide public outreach on climate change issues.

Funding from NSF EPSCoR will support:

Physical Infrastructure

- Instrumented environment transects to observe, measure and analyze the effects of climate change on ecosystems and water resources (including groundwater recharge) (DRI, UNLV, UNR as equal partners)
- Data Portal and associated computer hardware and software to support interdisciplinary climate change research, with an emphasis on facilitating exchange of data between groups of researchers, decision makers, and stakeholders (UNR lead).
- Computing resources and personnel to develop regional climate modeling capability (DRI lead)
- Development of state of the art visualization facility "Solutions Room" that will be used with the Social Science Climate Change Network to facilitate 2-way communications between scientists and decision makers and the public (UNLV lead)

Human Infrastructure

- New faculty positions:
- DRI – regional climate modeling; ecosystem modeling
- UNLV – demographer; ecohydrologist; computer visualization
- UNR – paleoclimate modeling; ecoclimatologist

Educational and Outreach Programs

Wide range of educational programs at all levels including:

- K-12 program focused on at risk in-service middle school teachers in a “whole school” approach to improve their content and pedagogy of basic climate change science and therefore STEM education at a critical level (NSC lead)
- Undergraduate and graduate level classes in climate change topics including graduate certificate program in climate change science (Statewide)
- Undergraduate research scholarships (30/yr)
- Graduate research fellowships (up to 25/yr)
- Postdoctoral researchers (up to 3/yr)

Wide range of outreach and diversity activities, including

- Recruitment and funding for diversity hires
- Linkages to small business through partnership with the Nevada Small Business Development Center
- Bilingual Web and video production
- Stakeholder involvement

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