NM EPSCoR is designed to enhance research competitiveness through investment in three strategic areas:

1. Critical Research Infrastructure
2. Cyberinfrastructure
3. Human Infrastructure

Our Vision:

"To enable an environment in which New Mexico scientists and educators are fully competitive in climate change research and education."

Our Mission:

"To provide the critical gap infrastructure, computational support, and education and outreach opportunities that foster excellence in climate change research and education."

New Mexico's demand for fresh water is greater than it's supply. The largest source of surface water is the Rio Grande, which gets much of its water supply from snowpack in NM's northern mountainous regions. It is critically important for NM to understand the effects of global climate change on these vital sources of water.

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THE UNIVERSITY of NEW MEXICO

New Mexico EPSCoR

Climate Change Impacts on New Mexico's Mountain Sources of Water

New Mexico EPSCoR State Program
University of New Mexico, Albuquerque, NM

New Mexico's Experimental Program to Stimulate Competitive Research (EPSCoR) is a five year program funded by the National Science Foundation. It is designed to improve the state's infrastructure and capacity for carrying out climate change research.

This multi-disciplinary, multi-scale effort is envisioned to transform climate change science and policymaking in NM by providing the tools required for quantitative, science-driven discussion of difficult water policy options facing the State in the 21st Century.

NSF

NM EPSCoR is designed to enhance research competetiveness through investment in three strategic areas:

1. Research Infrastructure

Research infrastructure investments support development of watershed-scale observational databases and coupled atmosphere-land-hydrology models needed to understand global climate change effects on NM water supply and water quality.

Researchers will employ a combination of remote sensing data, field data from new observational networks, and coupled climate and hydrology models.

- Large scale climatic influences on New Mexico
- Linking climate to hydrologic variability
- Coupled climate-hydrologic models

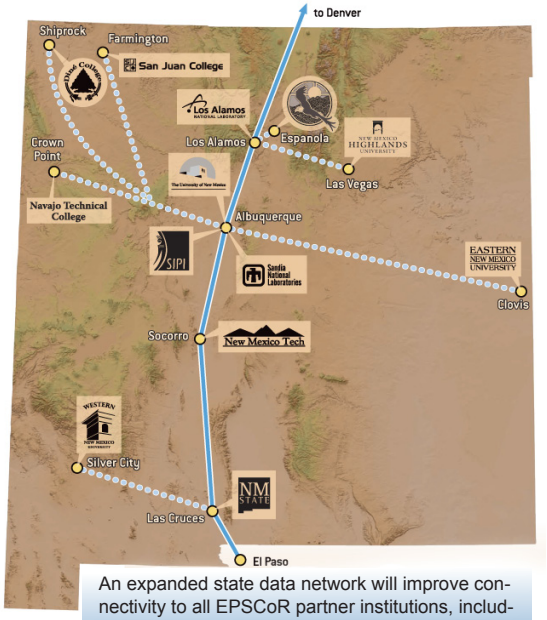
Upgrades and installation of eighteen enhanced capability SNOTEL sites will provide important information on snowpack in high elevations.

- Climate change effects on water quality
- Socioeconomic impacts of water management

Acequias are the traditional communal water management system of northern NM still in use today. Investigators seek to model social and hydrologic linkages.

2. Cyber Infrastructure

Advances in our ability to observe and simulate future climate scenarios and mountain hydrologic processes cannot be achieved without investment in innovative uses of cyberinfrastructure.



An expanded state data network will improve connectivity to all EPSCoR partner institutions, including regional and tribal colleges, better integrating research resources among schools, national laboratories, and state government.

- Efficient data acquisition, processing and storage
- Interoperable data discovery and delivery based on open standards
- Technologies for scientific collaboration NM Climate Change Web Portal
- High performance computing in model deployment

ENCANTO, an SGI Altix ICE 8200 supercomputer, is used by EPSCoR for execution of integrated climatological-physical- socioeconomic simula- tions. EPSCoR employs an HPC programmer to ad- vance development of parallel-computing solu- tions for climate change research in New Mexico.

3. Human Infrastructure

Enhancing the human infrastructure in New Mexico's academic and research enterprise is central to EPSCoR. Three inter-related plans aim to create an informed citizenry and develop future leaders in research and governance.

Education plan:

- Summer Institute for Teacher Professional Development Undergraduate Research Opportunities Program
- Los Alamos National Labs Climate Change Graduate Research Training
- Junior Faculty Leadership Training Workshops

New Mexico Museum of Natural History & Science will design and install a new Climate Change Exhibit featuring NOAA's Science on a Sphere and integrating research by NM EPSCoR scientists.

Outreach plan:

- Climate Change Exhibit at New Mexico Museum of Natural History and Science
- Climate Change Seminar Series Science Cafes New Mexico First Town Hall Policy Meeting Climate Change Web Portal

Diversity plan:

- Place-based 9th grade science curricula for rural Hispanic and Native American communities
- Broadening participation in undergraduate and graduate research opportunities
- Diversity and inclusiveness training for junior faculty
- Science Café series developed specifically for northern New Mexico cultures and peoples

With a minority as majority population, New Mexico has a unique opportunity and special responsibility to provide leadership in addressing the shortage of scientists representative of the nation's growing minority populations.