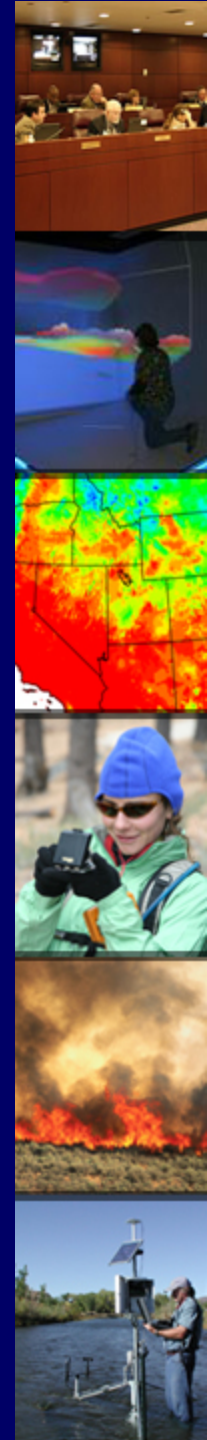


Nevada Infrastructure for Climate Change Science, Education, and Outreach

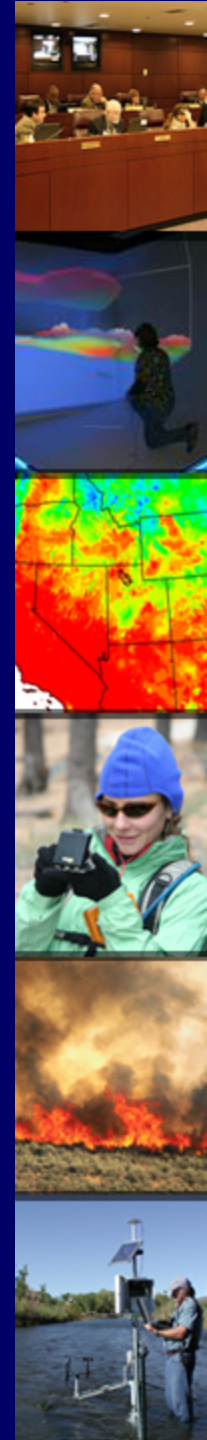
Interdisciplinary Science Teams and Seed Grants

Nick Lancaster



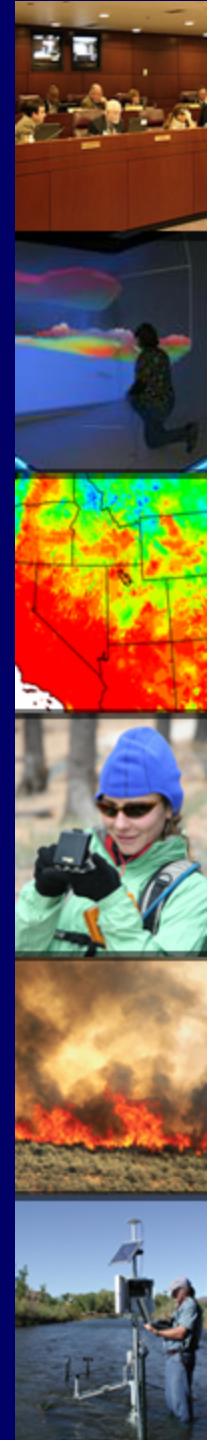
Interdisciplinary Science Teams

- Integrate components via overarching interdisciplinary science questions
 - How will climate change affect water resources and linked ecosystem services and human systems?
 - How will climate change affect disturbance regimes (e.g., wildland fires, invasive species, insect outbreaks, droughts) and linked systems?
- Two teams, two years duration, \$100k per year
 - Must utilize the new infrastructure
 - Address cross-cutting issues related to the interdisciplinary science questions
 - Involve faculty and students from at least two institutions (DRI, UNLV, and UNR), as well as community colleges



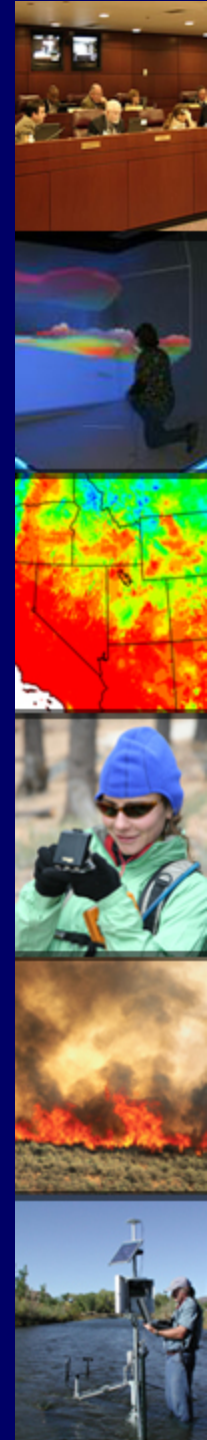
Interdisciplinary Science Teams

- 10 proposals received and reviewed by ERTAB
- 2 selected for funding
 - Losing the Lake: a simulation game on Lake Mead, water resources and climate change
 - M. Nussbaum, Gale Sinatra, S. Ahmad, K. Crippen, W.J. Smith, M. Lachniet (UNLV), F.C. Harris, and S.M. Dascalu (UNR)
 - Effects of Climate Change on Spring Ecosystem Hydroecology as a guide to developing alternative water policies
 - Saxon Sharpe (DRI), Scott Mensing and Scott Bassett (UNR), D. Sada, and J. Thomas (DRI)



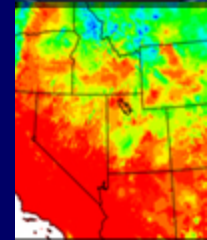
Seed grants

- development of a *new* collaborative effort among two or more researchers.
- Innovative short term investigations that use or support NSF EPSCoR infrastructure
- generate new data sets, new methods of data collection, archiving, or analysis; new instruments or technologies; and/or data that would support new conceptual frameworks.
- submission of competitive funding proposals to NSF or other national funding agencies and institutions
- \$25k per year funding – support for students, equipment, travel etc.
- Competitions held in 2009 and 2010



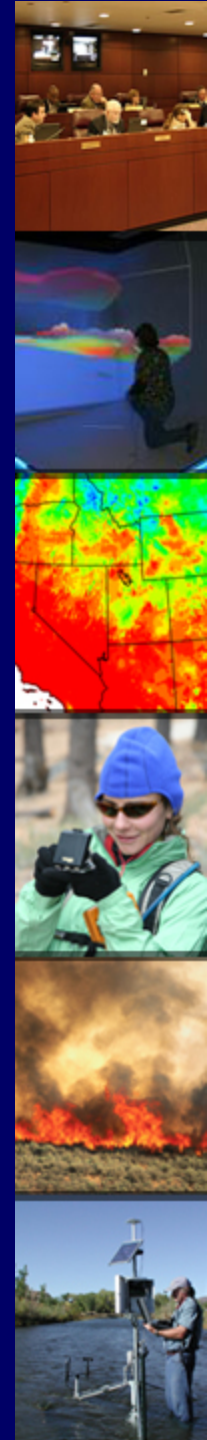
2009 Seed Grants

- 22 proposals received
- Reviewed by faculty from Tri-State Partners
- Four projects funded at \$30k each
- 3 of 4 funded projects requested no-cost extensions



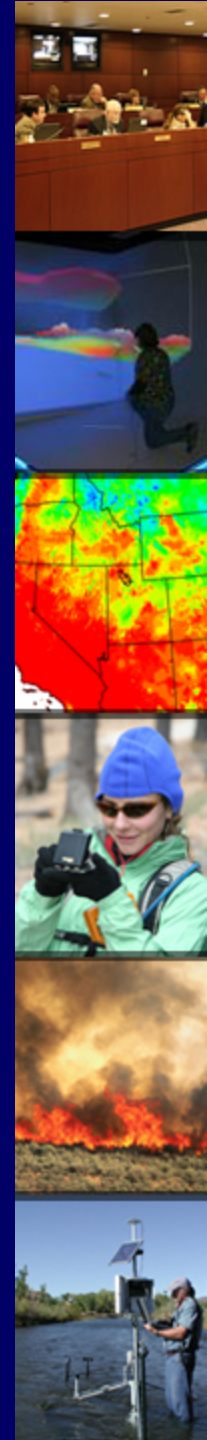
2009 Seed Grant Projects

- Creation and Pilot Testing of Wireless Sensor Networks to Capture Spatial Variability at EPSCoR Transect Sites
 - Brock, Susfalk, Arnone (DRI)
- Aerosol Modification of Snow Albedo in Southern Nevada and its Influence on Snow Melt and Spring Runoff
 - Moosmuller and DuBois (DRI)
- Understanding the Impact of Climate Change Media Messages
 - Priest, Tiller, Greenhalgh (UNLV)
- Water source partitioning for shrubland transpiration using innovative field methods
 - Young (DRI), Devitt, Lachniet (UNLV)



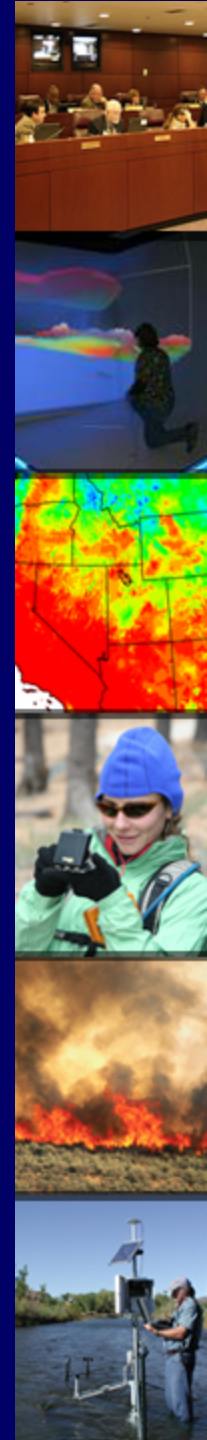
Impact of Climate Change Media Messages

- Audiences are motivated by climate change news stories that include information about actions they can take
- Video messages are more powerful for this purpose than print messages, and environmental values (but not conservatism) strongly predict results -- as did simple interest in the story
- Evidence suggests that both more religious people and less religious people reported more motivation to change than those in the middle on a measure of religious service



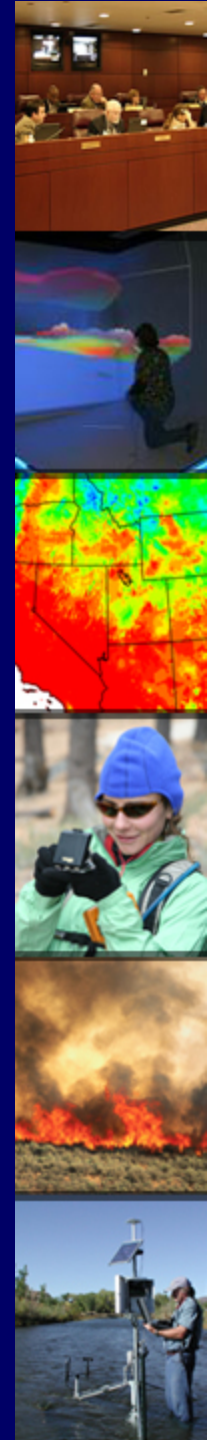
Creation and Pilot Testing of Wireless Sensor Networks to Capture Spatial Variability at EPSCoR Transect Sites

- Collaborative effort with Campbell Scientific (CSI; Logan, Utah)
- Developed a multiple sensor interface (DR1)
 - enables the use of up to 25 individual sensors that support the 1-wire protocol.
 - designed to be used with CSI's recently developed wireless sensor network instruments
- Constructed multi-sensor probes for thermal profiling for use with DR-1
- Field testing of communications and data collection performance is presently in progress



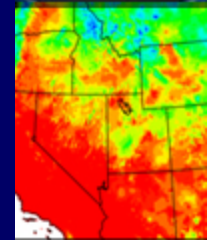
Aerosol Modification of Snow Albedo and its Influence on Snow Melt and Spring Runoff

- Studies at field site at Mammoth Mountain CA to measure snow albedo under controlled conditions
- Problems with new instrumentation
- Field experiments next month
- Meanwhile, continued with analysis of the fractal-like nature of aerosol particles (i.e., soot) collected on filters and the absorption spectrum of brown carbon
- Several publications acknowledge NSF EPSCoR support



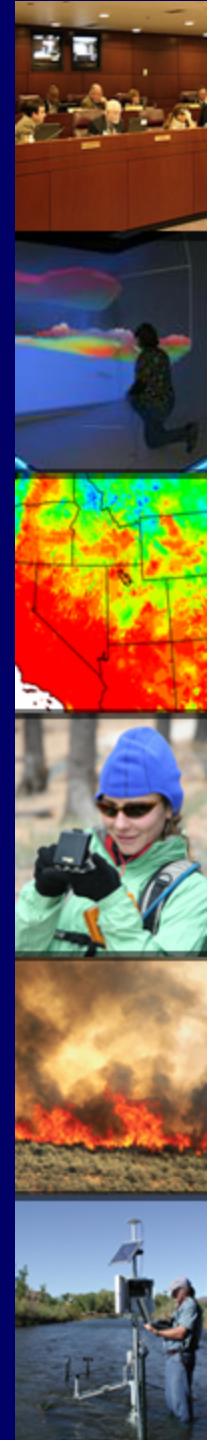
2010 Seed Grants

- 20 proposals received
- Reviewed by Tri-State colleagues
- 4 projects funded at \$25k each



2010 Seed Grant Projects

- Climate Change Collaboration, Education & Outreach Platform
 - Rajan Chakrabarty, Hans Moosmuller (DRI), Daniel Loranz (TMCC)
- Evaluating the Vulnerability of Pyramid Lake Paiute Indian Water Rights Under Climate Change
 - Karletta Chief, Mahesh Gautam (DRI), William J. Smith (UNLV)
- Assessing the Envelope of Interannual Variation in Vegetation
 - Lynn Fenstermaker (DRI), Dale Devitt, David Costa (UNLV)
- Physiological Stress as an Indicator of Climate Change
 - Stanley Hillyard, Frank van Breukelen (UNLV)



Lessons learned

- Reviewing seed grants is a major operation
- One year is a very short time in which to develop and execute innovative interdisciplinary research
- Next 9 – 12 months will show role of seed grants in developing competitively funded research projects
- Need to have some evaluation of value of seed grants to researchers

