Western Consortium of Idaho, Nevada, and New Mexico

Cyberlearning Year 2
Provides many collaboration opportunities!

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Goals and Objectives

- Use CI to Integrate Research with Informal and Formal Education

- Build Human Capacity

- Support students in STEM pipeline

Major Activities

- Offer and support CI training in computation and climate change

- Develop and disseminate educational materials for MS/HS

- Develop and support extracurricular CI activities

- Develop and deliver Industry CI Days

Outputs

Activity	Output Resulting from Activity
Offer and support CI training in computation and climate change	New CI skills for grad stds., post docs & faculty & K-12 teachers; New delivery methods
Develop and disseminate educational materials for MS/HS	New CI-enabled classroom learning materials (e.g., traditional, Web)
Develop and support extracurricular CI activities	New CI-enabled extracurricular learning materials
Develop and deliver Industry CI Days	Outreach to business & industry

Outcomes and Metrics

Activity	Outcome Resulting from Activity
Offer and support CI training in computation and climate change	Increased human resource capacity •Number of trainees disaggregated by demographics and degree program •Number of trainings disaggregated by type
Develop and disseminate educational materials for MS/HS	Provide resources to promote increased awareness, skills, and knowledge of CI and STEM content •Number of materials developed by category •Number of entities to which materials are disseminated •Number of downloads of materials (e.g., from portal)

Outcomes and Metrics

Activity	Outcome Resulting from Activity
Develop and support extracurricular CI activities	Support STEM pipeline •Number of new schools, students and teachers (e.g. GUTS and Super Computing Challenge) •Number of new content modules •Number of programs to which CI information is disseminated
Develop and deliver Industry CI Days	Provide CI training opportunities for industry •Number of participants disaggregated by demographics

Year 2 Action Plan

Activity	Task	Progress to Date
Offer and support CI training in computation and climate change	1. Develop catalog and calendar of CI training to be posted on Track 2 webpage. Update web page and materials throughout year. 2. Communicate training opportunities & participants for higher education 3. Develop and offer training in Climate Modeling 4. Offer and support CI training in computation and climate change	Quarterly announcements provided to Track 1 & Track 2 participants for CI Training; • Idaho – 1 faculty; 1 post-doc • New Mexico—3 graduate students • Nevada - EPSCoR Hosted Trainings • 2010 Tri-State, HIS for 6 (ID); 10 (NM); 14(NV) • Interdisciplinary Modeling Course (UNR), Summer 2010; 24 students • 2011 Tri-State, HIS for 20 participants; Intro to Climate Modeling for 20 participants

Year 2 Action Plan

Activity	Task	Progress to Date
Develop and disseminate educational materials for **MS/HS {for in class use}**	1. Develop education materials 2. Update & use of portal 3. Compiling data to develop an evaluation of education materials 4. Dissemination of education materials	Idaho: MOSS – HIS database interface, curriculum development, teacher workshop (cont'd Year1 http://mossi.tfhsbruins.com/index/index/) University-Blackfoot, ID charter school climate change seminar development, distributed on IEN New Mexico: 6 MST teachers developing educational materials (e.g. advanced smartlab for physical and computational experiments; inquiry-based approach to water quality; 4 ug students updating older materials, compiling links for cybereducation materials/training (http://cs.nmt.edu/~epscor/) Developing website framework for teachers to use in classroom (google app engine django) Disseminating materials – available through NM Tech library – links and EPSCoR and their own website; Diversity: Nicco will send Nevada: Partnered with Clark County School District (CCSD) to develop materials for a summer professional development project for middle school and high school teachers related to climate change. The PD is funded through CCSD. Topics will include specific case studies of climate impacts in Nevada. Currently in the process of identifying participants and establishing a work plan.

Year 2 Action Plan

Activity	Task	Progress to Date
Develop and support extracurricular CI activities	1. Develop and disseminate materials as part of GUTS; SuperComputing Challenge	• GUTS and SCC have developed a number of modules (water resources/cc) and disseminated to students Nov 10 (http://www.challenge.nm.org/); interim reports currently being evaluated • Sustainability: 2/3 clubs from last year continued with teams this year with local business funding; teacher from 1 club continuing with new team • Diversity – Nicco to send to Nancy
Design/coordinate/advertise/deliver Industry CI Days Program	1. Develop mechanism for use of CI in rural start-up businesses	• Established contract with FastForward NM to offer computer training for small business entrepreneurs in 3 rural NM communities.

Update to EAC Response

- Pedagogical models?
  - 5E model of inquiry (Bybee, 2002) to address the National Science Education Standards for contents and inquiry-based instruction (NRC, 1996, 2000).
  - NV: use scaffolded knowledge integration framework (Linn, 2000; Linn, Bell, & Davis, 2005) includes a guidelines for designing electronic science learning environments from four meta principles: making science accessible, making thinking visible, providing social supports, and promoting lifelong science learning.

Update to EAC Response

- Driving Questions/Topic Areas?
  - "Big Questions": discussions – compiled spreadsheet, Climate Literacy Framework:

  http://climateliteracynow.org/

- How to Convey Deficiencies of Climate Models?
  - Modeling/simulations through GUTS, SCC, MOSS (HIS) provide foundation
  - Access to data portals