EPSCoR Cyber-Science Workshop

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  - Interaction between EPSCoR Researchers and CI Team for opportunities for CI enabled science
  - Capture science workflows enabled/enhanced through use of CI
- Products
  - New NSF or other proposals
  - Peer-reviewed publications documenting workflows

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In progress

Still needs work

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Today's focus

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- Products
  - New NSF or other proposals — Today's focus
  - Peer-reviewed publications documenting workflows — Future

Outcomes

- Three workshops held during the week of November 15-19

- 32 participants from 8 research institutions in three states

- Report available at: http://nmepscor.org/content/cyber-enabled-science-iwg-summary-report

- Numerous potential topics and opportunities identified.

- Two focused on today

Focus 1

- Development of metadata capture, search, and delivery for deep metadata analysis and query for ecological data: recorded parameters, location of observations. The ability to perform these deep metadata searches can enable meta-analyses that are based upon the integration of multiple research results and data sets into a new research product.

Focus 2

- Data Intensive K-12 Experiential Science Education. Through the availability of inexpensive sensors, accessible environmental data from outside the classroom, and the opportunity to define individual research problems of interest, high-achieving focused students can gain experience in the emerging field of data intensive science. This activity would bring sensor developers, CI experts, and educators together in the development of an integrated system that allows students to deploy their own sensors, capture data from those sensors, and integrate the outputs of those sensors with data available through interoperable standards in desktop analysis tools such as HydroDesktop.

Cyberinfrastructure Supporting Science

Karl Benedict
Director, Earth Data Analysis Center
Research Assistant Professor, Geography Dept.
Tri-State EPSCoR CI Lead
UNM

What can cyberinfrastructure enable?

Discovery
Access
Collaboration

Why me?

More efficient research
Streamlined collaboration
Meeting requirements

Discovery

TB of data added to global network daily
National and International Metadata standards
Standards for discovery

Access

All data are not local
Timeliness/currency
Standards for "smart" access

Image Courtesy of Namihots: http://www.flickr.com/photos/namlhots/3096109459/sizes/l/in/photostream/

Collaboration

Communication

Shared content development

Data Sharing – Self publication

Discussion/Questions

Science Workflow Definition and Proposal Development

1. Define Science Problem & Barriers
2. Identify research process for the science problem with identified CI capabilities that enable each task (these may be converted into publishable papers)
3. Identify funding opportunities to which proposals may be submitted to conduct defined research