

Enhancing the role of EPSCoR Jurisdictions in Environmental Management through Cyberinfrastructure

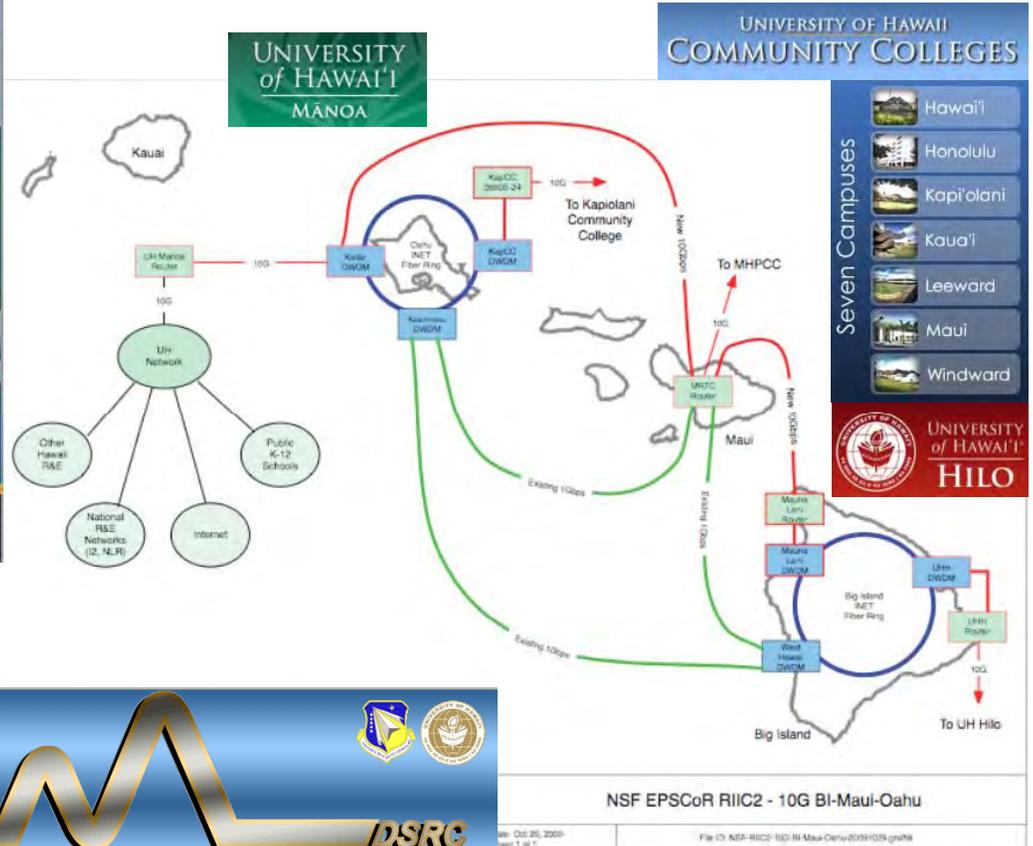
Gwen Jacobs
Montana State University
22nd National EPSCoR Conference
Coeur d'Helene, Idaho
Oct. 24 – 27, 2011

EPSCoR CI Success stories

- Expansion and upgrade of national and regional networks
 - Leveraging multiple funding sources to achieve parity in high speed/high bandwidth connectivity
- Advances in Ecological Informatics
 - National, regional and local efforts to improve data quality and data sharing

Networking in Hawai'i

Local - Regional – National - International



Mauna Kea – Hawai'i



Haleakala - Maui



- NSF IRNC: Australia-Hawaii; Oahu-Seattle
- NSF ARI-R2: Oahu – LA/Seattle
- NSF EPSCoR: RIIC2: Oahu – Maui – Hawai'i
- NTIA-BTOP: schools, libraries, campuses

Advances in Eco-Informatics

The image shows two overlapping web browser screenshots. The top screenshot is the DataONE website, featuring a navigation bar with 'About', 'Participate', 'Resources', and 'Home'. The main content area is titled 'Sustainable and Secure Cyberinfrastructure' and includes a world map with four circular nodes: 'Member Nodes', 'Investigator Toolkit', 'Coordinating Nodes', and 'Service Interface'. Below this is a search bar and a 'News & Events' section with several job and resource listings. A footer menu is divided into 'About', 'Participate', and 'Learn' categories. The bottom screenshot is the CUAHSI website, titled 'Consortium of Universities for the Advancement of Hydrologic Science, Inc.' and 'universities allied for water research'. It features a map of North America with numerous white location markers and a list of member universities. A 'VOEIS' (The Virtual Observatory and Ecological Informatics System) banner is visible at the bottom of the CUAHSI page, with a list of links for public projects, more information, data access, help, and development roadmaps. Logos for various member institutions like UK, ECU, M, UL, and others are shown at the very bottom.

Community based efforts in tool development, data management, data sharing and education.

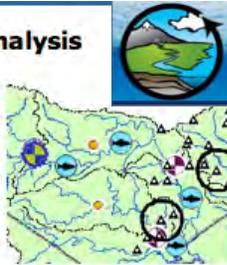
Challenges for EPSCoR States

- How can we develop sustainable cyberinfrastructure to address state needs?
 - Projects should engage and serve state stake holders and policy makers.
- How can we communicate and measure research value?
 - Research products should be credible, relevant and necessary for informed decision making.
- How can state-based EPSCoR programs have regional, national and international impact?
 - Projects should be integrated with other national efforts – DataONE, NEON, Earthcube – etc.

High value accessible data

Data Access, Publication and Analysis

CUAHSI has developed a Hydrologic Information System (HIS), based on a services oriented architecture, that allows scientists to publish data they collect and find data collected by numerous agencies as well as other universities using HydroDesktop, the first HIS client. All HIS software is open source and collaboration on its development is encouraged.



- [Understanding the NSF Data Management Plan Requirement](#)
- [Discovering Data](#): Download HydroDesktop
- [Publishing Data](#)

VOEIS
The Virtual Observatory and Ecological Informatics System

The Virtual Observatory and Ecological Informatics System (VOEIS) provides a framework for data acquisition, analysis, model integration, and display of data products from complex workflows including geospatially explicit models, graphs from statistical analyses, GIS displays of classified ecological attributes on the landscape, and 3-D visualization models of watersheds and landscape processes.

- Browse Public Projects in VOEIS
- More about VOEIS
- VOEIS data live at [BlueWaterTaskForce.org](#)

blue water

Task Force
Gallatin Watershed

Home About Us Programs News & Events Stream Data Document Libraries Definition of Terms Support Contact Us

Welcome to the Blue Water Task Force

Our mission is to promote public stewardship of aquatic resources in the Gallatin River Watershed through community education, citizen involvement in water quality monitoring, and scientific data collection.

Web Design by Neil Stone | Copyright © 2008 Blue Water Task Force | Site Map

Rainfall Atlas of Hawai'i

Geography Department - University of Hawai'i at Mānoa

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What is the Rainfall Atlas of Hawai'i?

The Hawaiian Islands have one of the most diverse rainfall patterns on earth. The mountainous terrain, persistent trade winds, heating and cooling of the land, and the regular presence of a stable atmospheric layer at an elevation of around 7,000 ft. interact to produce areas of uplift in distinct spatial patterns anchored to the topography. The resulting clouds and rainfall produced by this uplift lead to dramatic differences in mean rainfall over short distances. Knowledge of the mean rainfall patterns is critically important for a variety of resource management issues, including ground water and surface water development and protection, controlling and eradicating invasive species, protecting and restoring native ecosystems, and planning for the effects of global warming.



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Mean Monthly Rainfall (mm)

Rainfall Atlas of Hawai'i 2011, University of Hawai'i

Map Station Uncert.

500
400
300
200
100
0

Mean Annual Rainfall:

► Rainfall Data (mm)

► Station Information

▼ Legend

Help Location: Degrees: Latitude, Longitude Go

► Base Maps

Hawaii (U.S.)

Units: mm in

Show: Rainfall Uncertainty RF Isohyets RF Atlas Stations Other Stations

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Ann

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Downloads

Click on the underlined links below to download the files. All data files with a ".zip" at the end need to be unzipped after downloading (using WinZIP, WinRAR, 7-Zip, or a similar program). Please regard [Conditions of Use](#) for all Rainfall Atlas products. All mean trap products use the 30 year base period 1978-2007.

- [Map Images](#)
- [GIS Layers](#)
- [Google Earth Files](#)
- [Tabular](#)
- [Report](#)

Innovative ideas for EPSCoR States

- Create opportunities to combine and leverage efforts in cyberinfrastructure
 - Eco-informatics focus – nine EPSCoR States
 - Alaska, Hawai'i, Idaho, Kansas, Kentucky, Montana, Nevada, New Mexico, Oklahoma
- Create flexible funding models to allow states to focus on a common regional need or goal
 - Leverage EPSCoR talent, expertise and resources across jurisdictions to find solutions.

Stakeholders + Synergy

.....an example from downunder

The screenshot shows the Bureau of Meteorology website's 'Water Information' section. At the top, there is a navigation bar with links for Home, About Us, Contacts, Careers, Help, and Feedback. Below this is a search bar and a secondary navigation bar with links for Global, Australia, NSW, Vic., Qld, WA, SA, Tas., ACT, NT, and Ant. The main content area features a large banner for 'Improving water information' with a photo of a tree. Below the banner is a section for 'National Water Account 2010' with a brief description and a 'Continue reading' link. To the right, there are 'Related links' and 'Water links' sections. The 'Water links' section includes links for Water Act 2007, Water Regulations 2008, Water Market Reports, Water Dictionary, Publications, News, and Contact Us. Below these are a 'Stay informed' subscription button and an 'Available on the App Store' badge. At the bottom, there is a 'News' section with several article thumbnails, including 'water storage', 'Odds on wet', 'Water Accounting Consultation Paper', and 'Six Natl Account available'.

- Stakeholder driven
- Credible data
- Relevant predictions
- Accessible to all

Bureau of Meteorology
Australian Government

References and Links

- Northern Tier Networking Consortium
 - <http://ntnc.org>
- DataONE
 - <http://dataone.org>
- CUAHSI
 - <http://cuahsi.org>
- VOEIS
 - <http://voeis.msu.montana.edu>
- Blue Water Task Force
 - <http://Bluewatertaskforce.org>
- Hawai'i Rainfall Atlas
 - <http://rainfall.geography.hawaii.edu>
- Water Information
 - <http://www.bom.gov.au/water/>