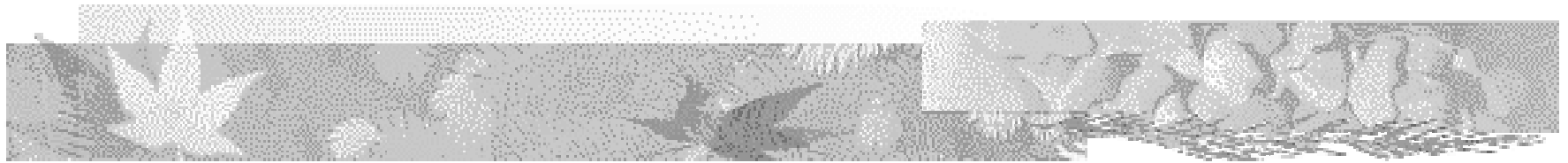


Digital Library for Earth System Education: A Geoscience Community Resource



Mary Marlino
DLESE Program Center

Presentation to the Unidata Policy Committee
May 21, 2002

“A Library outranks any other one thing a community can do to benefit its people.”

Andrew Carnegie



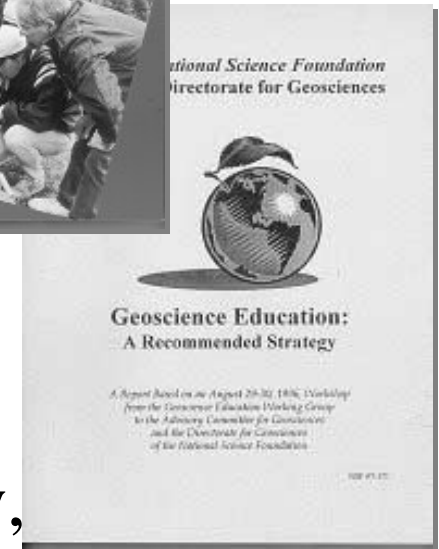
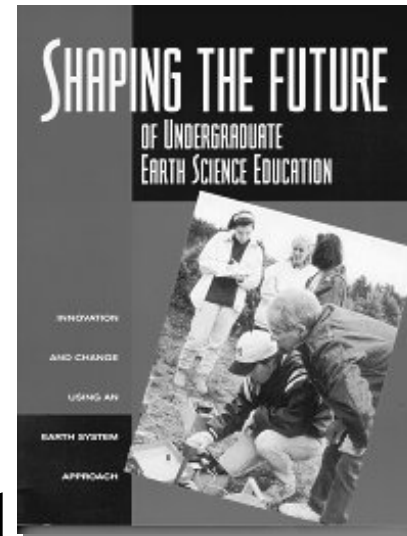
Overview

- Community motivations for an Earth system education digital library
- DLESE vision and progress to date
- Funding outlook and future plans

The Educational Challenge

Recommendations for Geoscience education reform

- Earth system perspective
- Focus on active, inquiry-based methods and “doing science”
- Integration of research and education
- New understandings of learning theory, pedagogy, and technological possibilities



The Classroom Challenge

- Educators need help in implementing reforms
- Educators have difficulty finding quality resources with confidence
 - Scientifically sound
 - Pedagogically appropriate
 - “Just in time”
 - Incorporating data into classroom activities
- School libraries are under-funded
- The WWW is not organized to accommodate these needs
- Search engines yield large numbers of confusing, inappropriate, and inaccurate results



The DLESE Vision



- Easy access to collections of high-quality, *peer-reviewed* teaching and learning resources
- Interfaces and tools to allow student exploration of Earth data
- Services to help users effectively create and use materials
- A community center that fosters interaction, collaboration and sharing

DLESE

Digital Library for
Earth System
Education

Email Links

Express Links

[Site Map](#) [Find a Resource](#) [FAQ](#) [HOME](#)

- ▼ About DLESE
- ▼ News & opportunities
- ▼ Library development
- ▼ Ways to contribute
- ▼ Find a resource
- ▼ Contribute a resource
- ▼ Find/join a group
- ▼ Cross-cutting issues
- ▼ Give us your feedback
- ▼ Documents about DLESE

DLESE Annual Meeting

Include email discussions

Search this site

Site map

- Help
- FAQ
- HOME

DLESE is a prototype project.
The site may go down for
scheduled maintenance
on Thursdays at 10:00AM MDT,
or at unexpected times.
[Terms of Use](#)
support@dlese.org



Breaking news

- [Call for 2002 DLESE Annual Meeting Host Response needed by November 14!](#)

Find a resource

lava

Begin search

[Search tips](#)

Browse library

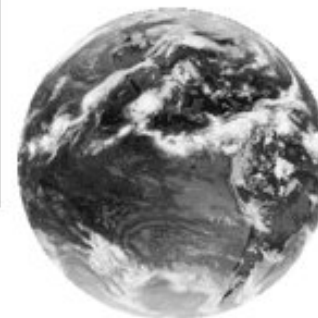
Power search

Select grade level(s)

- Primary (K-2)
- Intermediate (3-5)
- Middle (6-8)
- High (9-12)
- College (13-14)
- College (15-16)
- Graduate / Professional
- Informal
- General public

Resource of Interest

[Suggest an interesting Earth system site](#)
[View other interesting sites](#)



[The Virtual Geosciences Professor](#)

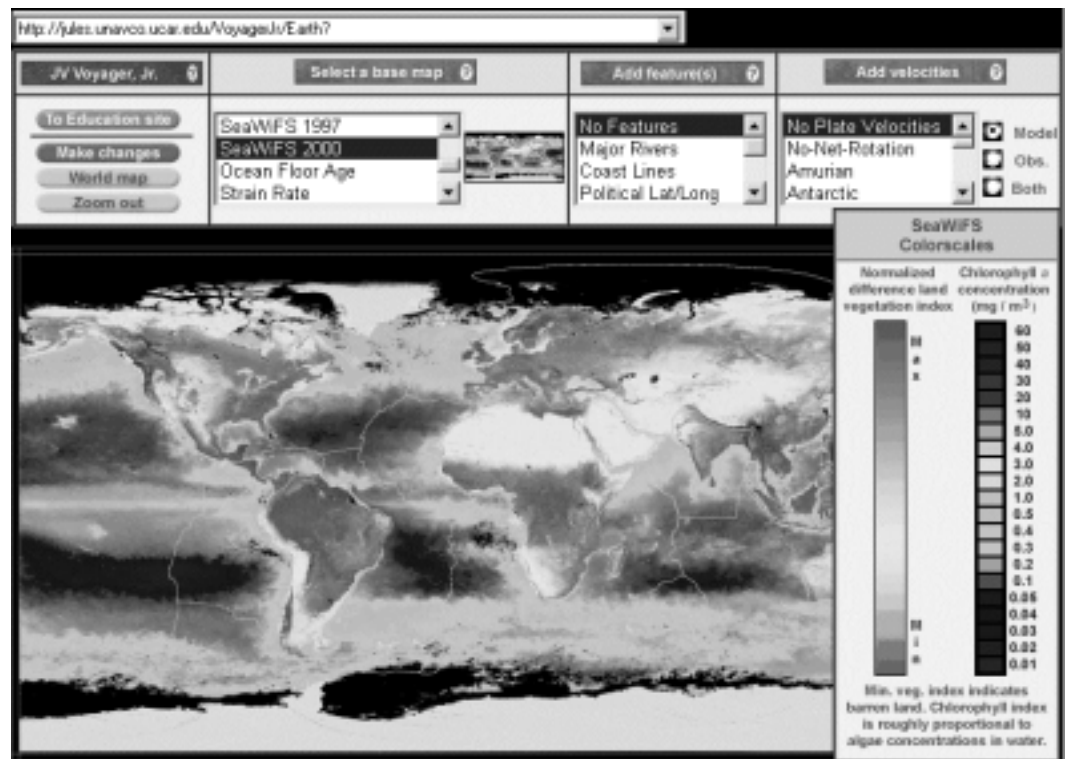
This [website](#) hosts a searchable database of over 4,750 geoscience course resources available on the Internet and is the creation of the late Dr. John Butler.

Explore its *Geophysics* link to find geophysical data, geoscience career and student support information, and reference materials for geophysics. ([more...](#))

www.dlese.org

Discovering Resources

- ➊ Discovery only for *resources related to Earth system science*
- ➋ Resources in DLESE are *selected and cataloged by the ESS education community*
- ➌ Resources are described in metadata records that *enhance discovery and comprehension* of the items



More than a Search Engine

Results 1-10 out of 21 Sorted by Relevance [Previous Page](#) [Next Page](#)

When Lava Enters the Sea: Growth & Collapse of Lava Deltas

<http://hvo.wr.usgs.gov/hazards/oceanentry/deltacollapse/main.html>

This web page uses photographs and illustrations of Kilauea Volcano, Hawaii, to illustrate the typical growth and collapse of **lava** deltas, fan-shaped platforms formed when pahoehoe lava enters the ocean for extended periods of time. The page also discusses the hazards associated with active **lava** deltas. . .

Grade Level: High school, General public, Middle school, Undergraduate lower division

Resource Type: Reference, Photograph, Scientific illustration

Subject: Natural hazards

[View Full Description](#)

A Virtual Geological Field Trip to Iceland

<http://www.caslin.nyu.edu/~geology/department/staff/scsigan/iceland/welcome.htm>

This site offers a virtual field trip to Iceland, which is located in the North Atlantic Ocean, half way between Greenland and Norway. Seventeen destinations are featured, each one of the geologic formation of the features found there, including fiords, alluvial fans, and features such as cinder cones, **lava** flows, lava tubes and lava fissures. . .

Grade Level: High school, Undergraduate lower division

Resource Type: Virtual field trip

Subject: Geology, Structural geology

[View Full Description](#)

Mauna Loa, 1984 Eruption: March 25 - April 15

<http://www.hvo.wr.usgs.gov/maunaloa/history/1984.html>

This web page describes the progress of **lava** flows from an eruption of Mauna Loa threatened but did not reach the city of Hilo, Hawaii. The description includes eruption (1984); the eruption beginning in Moku'aweoweo Caldera, Mauna Loa (March 25); r forming as magma moved down the northeast rift zone and a new fissure becoming vent (March 25); the lava advancing toward Hilo (March 26-29); lava breaking out of new flow (March 29); more levees breaking and the slowing of the rate of eruption (

Grade Level: High school, Informal education, Middle school, Undergraduate lower division, Undergraduate upper division, Primary elementary, Intermediate elementary, professional, General public

Resource Type: Report, Map, Photograph

Subject: Natural hazards

[View Full Description](#)

- ⊕ Access
- ⊕ Pedagogy
- ⊕ Accuracy

When Lava Enters the Sea: Growth & Collapse of Lava Deltas

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[View Full Description](#)



Library Building Strategy

- **Community owned and governed**
 - Strategic Plan provides guidance for library direction, management, and sustainability
 - Distributed governance ensures broad representation, leadership development, and diversity of interests
- **Distributed building process**
 - Community-developed collections, services, and technology
 - Utilization of NSDL and other non-GEO resources
- **Centralized program continuity**
 - DLESE Program Center: creating and operating the technical infrastructure, providing support for distributed library builders



Steering and Standing Committees

Steering Committee

- **Elizabeth Ambos** (Chair) CSU Long Beach
- **Bryan Aivazian**, Natrona County School District, Casper, Wyoming
- **Susan Avery**, U of Colorado
- **Barb DeFelice**, Dartmouth
- **Chris DiLeonardo**, DeAnza CC
- **David Fulker**, Unidata/UCAR
- **Mike Goodchild**, UCSB
- **Jim Hays**, Columbia
- **Don Johnson**, U of Wisconsin
- **John Snow**, U of Oklahoma
- **Robert Wilhelmson**, U of Illinois
- **Kate Wittenburg**, EPIC

Standing Committees

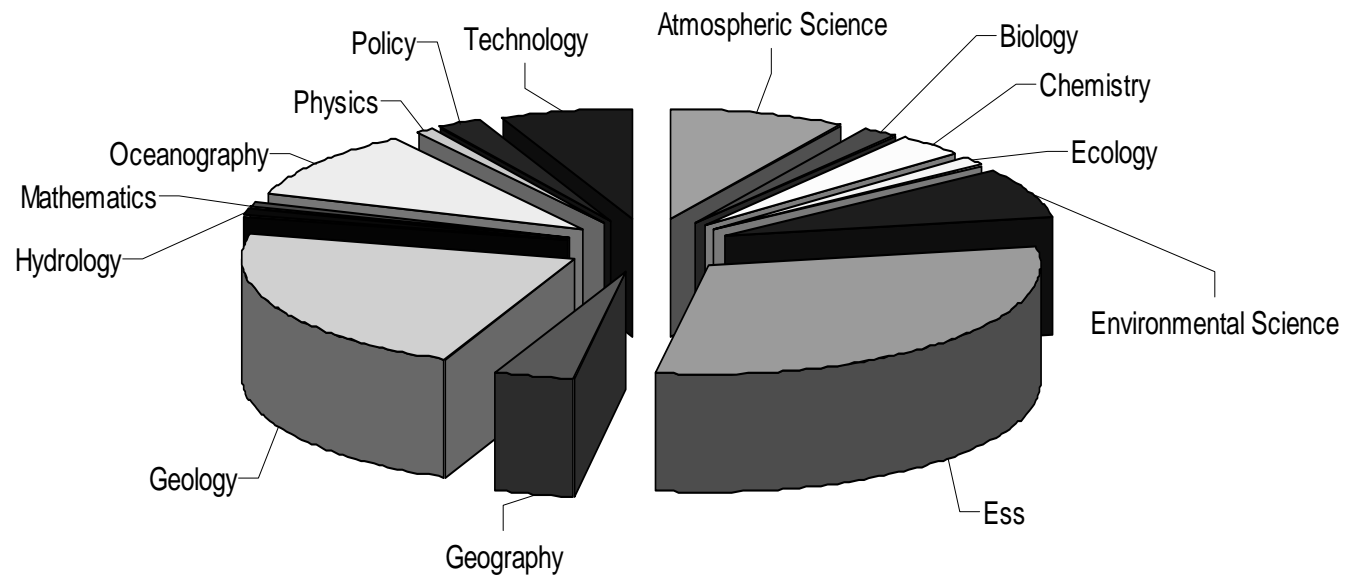
- **Users: Bill Prothero**, UCSB
- **Services: Mohan Ramamurthy**, U of Illinois
- **Collections: Kim Kastens**, Columbia
- **Technology: Tom Boyd**, Colorado School of Mines



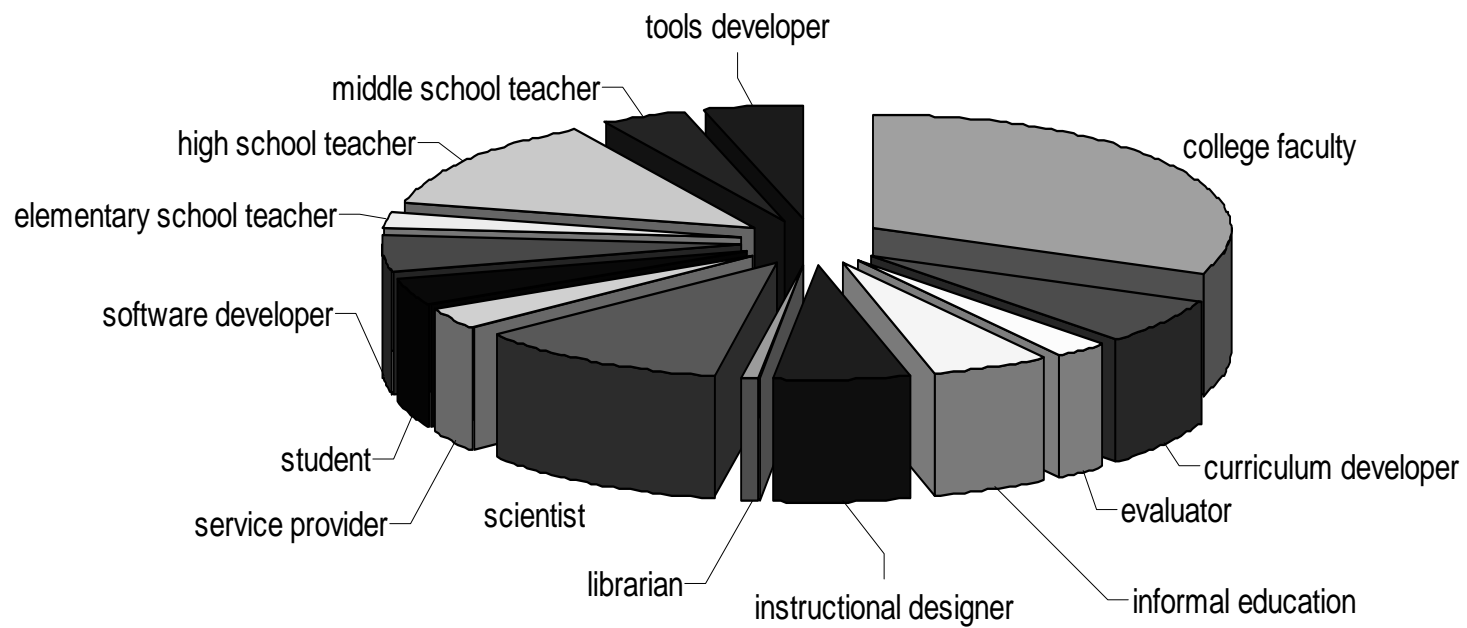
Partnerships

- Digital Library Infrastructure
 - **UCSB** — digital library technology, geographic metadata
 - **San Diego Supercomputer Center** — persistence
- Data Access
 - **IRIS** — seismic data from global networks
 - **Unidata** — real-time atmospheric & oceanic data
 - **Cornell, Columbia, Geoinformatics**
- Collections Development
 - **Columbia, AGI, Dartmouth, Foothills CC** —funded collections effort
 - **NASA/ESSE** — Earth System Science Education
 - **Colorado State** — K-12
 - **National Academy Press, SCEC, AAAS**
- Library Services and Evaluation
 - **U Mich, CMU** — user services
 - **U Colorado** — evaluation toolkit
- Total number of higher ed institutions =125
 - **UCAR Member institutions = 46**
 - **UCAR Affiliate institutions =12**

Applicants to Annual Meeting by Discipline



Applicants by Role





Future efforts: DPC Proposal Goals

- Develop an *operational infrastructure* that *is tailored to specific geoscience education needs*
- *Support community capacity building* by providing tools and services that enable development of high-quality resources
- Promote systemic educational change through the development of *innovative resource discovery* interfaces and services
- Promote overall *library awareness*
- Conduct ongoing *library operations*
- Support broad-based *community governance*
- Promote and support DLESE *diversity initiatives*
- Support distributed *library evaluations* of user experiences, collections and services, and effectiveness

DLESE Versions

