NSDL in the World
Kate Wittenberg
Columbia University

Digital Library Building
William Arms
Cornell University

Enhancing the NSDL Community
Kaye Howe
University Corporation for Atmospheric Research
Working within a Changing Environment for Scientific Communication
Defining Value: NSDL in a Changing Information Environment

- Encompasses benefits of open access science content by adding visibility, context, and tools.
- Works with teachers and publishers to bring in professionally developed resources for science education
- Provides content and tools that can supplement science textbooks
From Research to Production: Partnerships with Publishers

- NSDL has moved into an operational production phase—provide stable infrastructure, content, and tools.
- Requirements include technical stability, professional standards for content presentation, design, and production.
- Organizational structure and leadership of CI and the NSDL projects must enable adherence to these standards—Partnerships with publishers can play an important role.
Science Publishers in NSDL
Currently Include:

- American Mathematical Society
- Association of Computing Machinery (ACM)
- BioOne
- National Academy Press
- Nature Publishing group
- Scientific American
From Individual Projects to Collaborative Enterprise: What We Have Learned

- Collaboration must take precedence in planning for CI and NSDL projects
- Information sharing systems should avoid duplication of effort
- Content providers, tool developers, and infrastructure engineers must complement, rather than reproduce each other’s work
- Existing organizational models in libraries, publishers, and IT organizations can help shape NSDL efforts in this area
The Repository holds information about every collection and item known to the NSDL.
The Collections

Growing the collections

The size of the collections has already doubled in 2004. They are expected to more than double again in 2005.

Core Integration activities:

• Regular harvesting and updates automatically
• Recommender system for selection of web sites by trained experts and automatic incorporation in collections.
• Expert guided crawl to create metadata for the individual items within a web site [iVia]
The Collections

Quality and Usefulness of the Collections

Near term:

• Augmented metadata (e.g., Eisenhower National Clearinghouse)
• Metadata crosswalks and registry (e.g., ONIX)
• Automated generation of subject headings [iVia]

Future:

• Links to K-12 state standards
End-User Services

Reference

• AskNSDL [Syracuse University]

Search engine

• Incremental improvements to search engine and interface (e.g., rapid indexing of new material, highlighting search terms in results) [U.Mass., Amherst]

• Filtering and ranking by audience-specific criteria (e.g., educational context)
NSDL and the Web

NSDL Repository

Yahoo

Google

Collections
Preservation, Persistence and Reuse

Persistence and Reuse

An active area of planning: reusablelearning.org, SCORM-NSDL, Howard Hughes Medical Institute

Preservation

- Monthly crawls of all accessible materials in the collections and nearby [San Diego Supercomputing Center]
- Archived version accessible from search service (now) and by an NSDL Wayback Machine (future)
Community Building

The nsdl.org portal

- *Of Interest*: educational resources
- *Community*: a community portal for users

The comm.nsdl.org portal

- A development portal for library builders
Underlying Technology

The NSDL repository

Fedora repository replacing the relational data base:
• More flexible data model (e.g., relationships)
• Support for content and metadata
• Web services interface for direct access to content

Shibboleth authentication
• Single log-in to all NSDL services

Systems and services integration
Pathways

The Prototype:

*Middle School Science, Technology, and Mathematics*
Eisenhower National Clearinghouse (Len Simutis – PI)

The First Group:

**AMSER: Applied Mathematics and Science Education Repository**
Internet Scout (Rachael Bower – PI)

**CSERD: Computational Science Education Reference Desk**
Shodor Foundation (Bob Panoff – PI)

**Math Gateway**
Mathematics Association of America (Lang Moore – PI)

**Teachers' Domain: Multimedia Resources for the Classroom and Professional Development**
WGBH Educational Foundation (Ted Sicker – PI)
Outreach and Communications

**Outreach**

- Full presence at 20+ major meetings
  - American Library Association
  - American Association for the Advancement of Science
  - American Association of Museums
  - National Science Teachers Association
  - Excellence in Science, Math, and Technology Education Week
- Some presence at an additional 12+ meetings
- Full suite of promotional materials for meeting support
- Initial Capitol Hill briefing
- Initial contact with House STEM caucus
- Redesigned nsdl.org
- Coming merger of nsdl.org and comm.nsdl.org
- AskNSDL expert recruitment and use
Outreach and Communications

Communications
- Whiteboard Report - now twice monthly
- LearnNSDL - quarterly magazine prototype
- Second Annual Report
- First national press release
- Fourth Annual Meeting

Workshops
- Vocabulary - Diane Hillmann
- Reusability and Interoperability - Robby Robson
- Scientific Markup Languages - Laura Bartolo
- Participant Interaction in Digital Libraries - Steve Weimar
- Webmetrics - Casey Jones
Evaluation: The New York Pilot Project

Purpose
To demonstrate the value of NSDL in an educational setting.

Goals
• To develop a scalable, repeatable process that engages teachers in developing a community of practice around science and math instruction based on NSDL resources and services

• To demonstrate the effectiveness of this process and related educational resources in producing changes in the practices, attitudes, and knowledge of participating teachers
Evaluation: The New York Pilot Project

Two planning meetings have included:

• K-12 faculty from the BOCES* surrounding Glens Falls,
• New York
• Dean of Education and faculty from SUNY - Cortland
• DLESE staff
• CI staff

* BOCES - Board of Cooperative Educational Services. A public organization created by the New York Legislature to provide shared educational programs and services to school districts.