NSDL

An overview of the

National Science Digital Library

“Resources for In-Depth Learning”

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Presentation Topics

What is a digital library?
Why invest public funds in NSDL?
Who will build NSDL?
Why is UCAR involved?
How will NSDL be constructed?
What progress has been achieved?
What is a digital library?

A managed set of resources, primarily from the Web

- Scoped to meet a specified need

Systems for cataloging/indexing/organizing these resources to facilitate discovery & use

- Within scope, more powerful than a generic search engine

Services that add value (for targeted audiences)

- E.g.: help desks, means for review/annotation/tailoring...

An intellectual commons, where human interaction fosters knowledge creation

- Communities that share common practices & needs
Why invest public funds in NSDL?

Research shows the potential of technology to improve science learning, *but ...* progress is slow—precollege surveys show the U.S. still trailing other nations...

- Despite its lead in providing access to computers/networks
- Despite prior NSF investments in high-quality materials

**NSDL offers hope for changing teachers’**

- Knowledge of learning materials & scientific subjects
- Applications of technology to enhance learning
- Understandings about how students learn

**One major investment can fill needs at many levels**

- Reaching every classroom/school having Internet access
- Addressing a *prominent* item on the National agenda
Who will build NSDL?

NSF has 4 competitive funding tracks (totaling ~$25M/yr)

- Collections
- Services
- Research
- Core Integration (now sole-source)

Library construction is a distributed process

- Collections will not be held centrally
- Services may be offered anywhere on the Internet

Responsibility for a coherent outcome—incorporating many resources that are not NSF funded—falls under the “Core Integration” award...
Introduction to the players -

The NSDL Core Integration effort is

A collaborative project

- University Corporation for Atmospheric Research - David Fulker
- Cornell University - William Arms
- Columbia University - Kate Wittenberg

With additional partners

- Eastern Michigan U - Ellen Hoffmann
- Syracuse University - R David Lankes
- U Colorado-Boulder - Tamara Sumner
- U Massachusetts-Amherst - James Allan
- U California-Santa Barbara - Terence Smith
- U California-San Diego - Reagan Moore
Why is UCAR involved?

The UCAR and NSDL missions are consistent
Progress on DLESE positions UCAR to help lead NSDL
An NSDL role positions UCAR to better lead DLESE
Digital-library methods & UCAR data-management interests are converging
  - Common to both is the use of metadata constructs
  - Good DLs will include map rooms & data rooms with GIS...
    • NSDL-funded THREDDS project, awarded to Domenico in Unidata
    • Alexandria Digital Library at UC-Santa Barbara

I stumbled into the role of team leader
How will NSDL be constructed?

A Spectrum of Interoperability
- Unite ALL collections into a single coherent library
- Create an open framework for new collections and services
- Embrace highly varied and rich collections
- Support both open access & restricted access to materials

One Library, Many Portals
- Run the main NSDL portal
- Support different portals for different groups of users
- Provide selected basic services (e.g., searching, user profiles)

Software Engineering
- Technical tools for NSDL developers and contributors
The Metadata Repository

The metadata repository is the primary basis for service provision. It provides information about every collection & item in NSDL, including certain relationships among them, such as:

- Item A is contained in Collection B
- Item C annotates or elaborates item D
CI Management Structure (proposed)

Executive Director of NSDL — Dave Fulker (UCAR)

Director of Educational Impact — Kaye Howe (UCAR)
  ➢ Fostering NSDL usage across the educational spectrum

Director of Library Services — Diane Hillmann (Cornell)
  ➢ Ensuring end-user satisfaction & reliable operation of NSDL

Director of Project Relations — Susan Jesuroga (UCAR)
  ➢ Guiding interaction between the CI team & other NSDL builders

Director of Publisher Relations — Kate Wittenberg (Columbia)
  ➢ Developing a business model that engages publishers in NSDL

Director of Technology — Carl Lagoze (Cornell)
  ➢ Designing & developing a leading-edge NSDL technical framework
What progress has been achieved?

Collection Development
- Contact with 120 collections → metadata in repository:
  - ~15 collections / ~20,000 records; 20% NSDL funded / 80% non-NSDL funded
  - Provided in “Dublin Core” format (less descriptive than DLESE)

User Interfaces & Portals
- Communications portal working; library portal under design
  - Web-site for builders (SourceForge) + newsletter (WhiteBoard Report)
  - Open-source approach to generalized portal building (uPortal)

Information Retrieval
- Engine (InQuery) allows metadata- & content-based query

Access Management
- Using Internet2 method for distributed authentication...

On track for initial rollout (targeted audience) in December