Background and History of the National Science Foundation’s National SMETE Digital Library Program
Vision...

“... a network of learning environments and resources for Science, Mathematics, Engineering and Technology education, will ultimately meet the needs of students and teachers at all levels—K-12, undergraduate, graduate, and lifelong learning—in both individual and collaborative settings.”

National Science Foundation
Towards A National SMETE Digital Library...

NSF should establish and fund a National Science, Mathematics, Engineering and Technology Education Digital Library

- **April 1996 - NSF Committee Meeting (LIBUSE)**
  - “Towards a National Library for Undergraduate Science Education Resources in Science, Mathematics, Engineering and Technology”

- **August 1997 National Research Council**
  - Digital National Library for SME&T Education Workshop

- **July 1998 National Science Foundation**
  - SMETE-Lib Workshop

- **January 1999 National Science Foundation**
  - Digital Libraries and Education Workshop
The National SMET Education Digital Library (NSDL) Program: Past, Present, and Future

Adapted from Lee Zia
NSDL Program Manager
National Science Foundation

Presentation from the NSDL Program Grantees Conference
September 23, 2000, Arlington, VA
Programmatic History

Digital Libraries Initiative (DLI 1) - NSF/NASA/ARPA, FY 94-97

DLI 2 - NSF, et al., initiated in FY 98, continuing

DLs & UG Earth Systems Education initiated FY 99, continuing

NSDL Program
NSF: FY 00-02

DL Operational
Fall, 2002

Digital Libraries Initiative (DLI 1) - NSF/NASA/ARPA, FY 94-97
Background Reports

- Information Technology: Its Impact on Undergraduate Education in Science, Mathematics, Engineering, and Technology (NSF 98-82), April 18-20, 1996
- Developing a Digital National Library for Undergraduate Science, Mathematics, Engineering, and Technology Education, NRC Workshop, August 7-8, 1997
- Serving the Needs of Pre-College Science and Mathematics Education: Impact of a Digital National Library on Teacher Education and Practice, NRC workshop, September 24-25, 1998
- Digital Libraries and Education Working Meeting, January 4-6, 1999
- Portal to the Future: A Digital Library for Earth System Education, Workshop Report, August 8-11, 1999
- The Digital Libraries Initiative: Update and Discussion, ASIS Bulletin, October, 1999
Vision

A Learning Environment and Resource Network for SMET Education (LEARNS)

• Designed to meet the needs of learners, in both individual and collaborative settings
• Constructed to enable dynamic use of a broad array of materials for learning, primarily in digital format
• Managed actively to promote reliable anytime - anywhere access to quality collections and services, available both within and without the network
The NSDL Connects:

Users: students, educators, life-long learners

Content: structured learning materials; large real-time or archived datasets; audio, images, animations; primary sources; digital learning objects (e.g. applets); interactive (virtual, remote) laboratories; ...

Tools: search; refer; validate; integrate; create; customize; publish; share; notify; collaborate; ...
The NSDL Enables

Environments for
- Communication
- Collaboration
- Creation
- Validation
- Evaluation
- Recognition
- ...

AND

- Discovery
- Stability
- Reliability
- Reusability
- Interoperability
- Customizability
- ...

of Resources
The NSDL Program

Core Integration Track
Collections Track
Services Track
Targeted Research Track

NSDL operational by 2002
Expectation of Tracks:

- **Core Integration:** to coordinate a distributed alliance of resource collection and service providers, and to ensure reliable and extensible access to and usability of the resulting network of learning environments and resources

- **Collections:** to aggregate and actively manage a subset of the digital library’s content within a coherent theme or specialty

- **Services:** to increase the impact, reach, efficiency, and value of the digital library in its fully operational form

- **Targeted Research:** to have immediate impact on one or more of the other three tracks
Overview of FY2000 Projects

- 90 proposals requesting ~ $59 M
- 29 projects ~ $14 M
  - 6 Core Integration pilot projects
  - 13 Collections track projects
  - 9 Services track projects
  - 1 Targeted Research track project
Overview, continued

• Several formal collaborative projects
• All feature multiple PIs
• 11 with explicit K-12 linkages
• 6 with strong potential K-12 links
• Heading towards Pre-K to gray

• Current domains: engineering, life sciences, geosciences, mathematics