

**Background and History of  
the National Science Foundation's  
National SMETE Digital Library  
Program**

# Vision...

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*“... 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...

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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

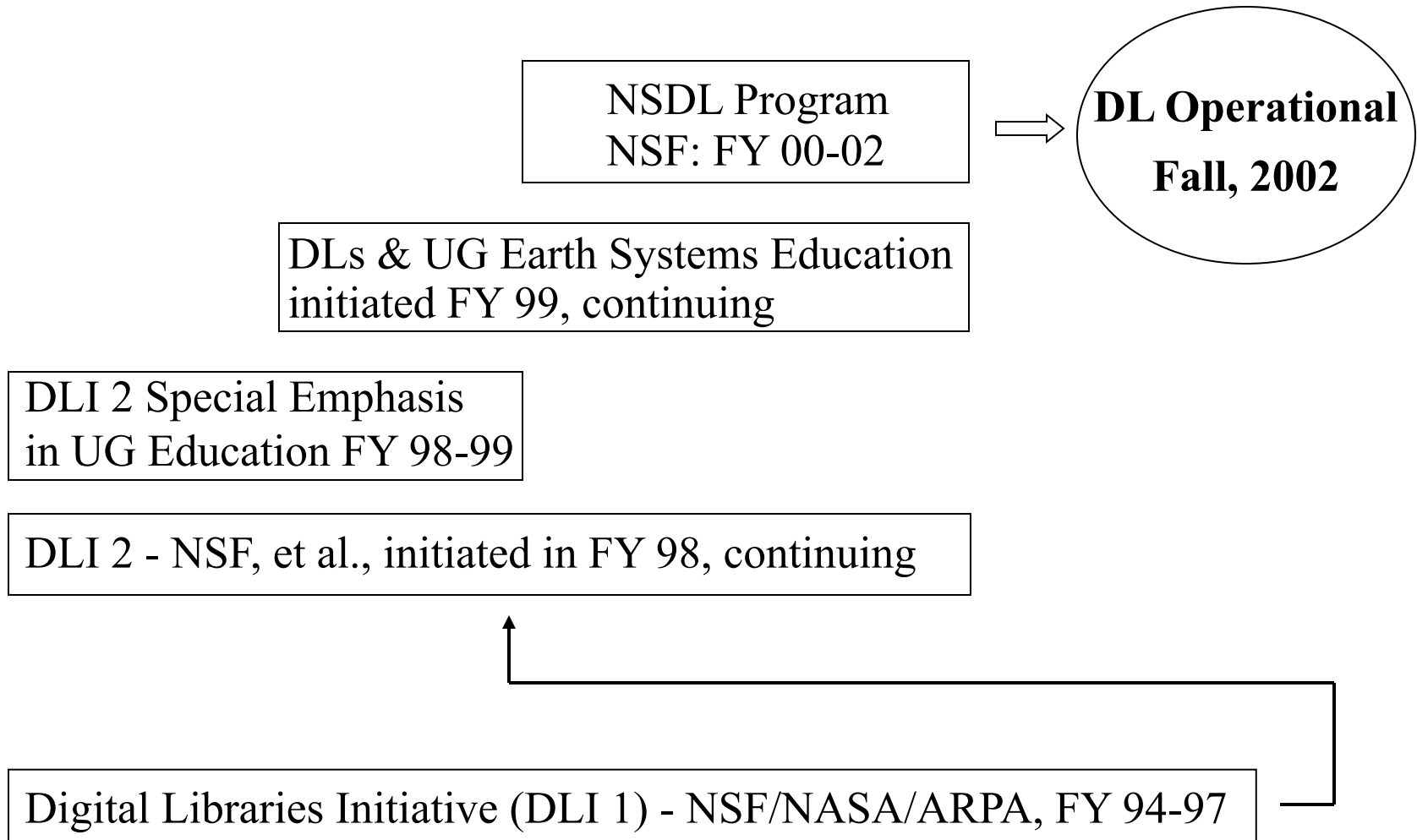
**Adapted from Lee Zia  
NSDL Program Manager  
National Science Foundation**

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





# Programmatic History





## 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
- *Report of the SMETE Library Workshop* (NSF 99-112), July 21-23, 1998
- *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**

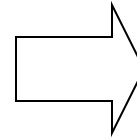
- Discovery
- Stability
- Reliability
- Reusability
- Interoperability
- Customizability
- ...

*of Resources*



# The NSDL Program

**Core Integration  
Track**  
**Collections Track**  
**Services Track**  
**Targeted Research  
Track**





## 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**