

DOMAIN: Digital Preservation

ARTICLE: “To Stand the Test of Time: Long-term Stewardship of Digital Data Sets in Science & Engineering,” National Science Foundation (NSF) from the Association of Research Libraries (ARL) Workshop on “New Collaborative Relationships,” September, 2006 : 150+ pages

Digital data stewardship is fundamental to the future of scientific and engineering research and the education enterprise, and hence to innovation and competitiveness. It is necessary to examine the role of research and academic libraries in collaboration with new partners in the stewardship of scientific and engineering digital data. This recent report urges the need for collaboration with domain and data scientists to better manage digital data collections; provide the necessary infrastructure development to support digital data; and the need for sustainable economic models to support long-term stewardship of scientific and engineering digital data for the nation’s growing cyberinfrastructure.

- **Ecology of digital data reflects a distributed array of stakeholders, institutional arrangements, and repositories, with a variety of policies and practices**
- **Scale of challenge requires that responsibilities be distributed across multiple entities and partnerships that engage institutions, disciplines, and interdisciplinary domains**
- **Responsibility for the stewardship of digital information should be vested in distributed collections and repositories that recognize the heterogeneity of data while ensuring federation and interoperability**
- **Stewardship and preservation require standards-based, active management practices that guide data throughout the research life cycle and to ensure the long-term usability of these digital resources**
- **Need for a close linking between digital data archives, scholarly publications, and associated communication**
- **Promote collaboration between a variety of stakeholders, including research and academic libraries, scholarly societies, commercial partners, science, engineering, and research domains, evolving information technologies, and institutions.**
- **Support the development of useful tools, including automated metadata creation, data registration, and rights management and other access control considerations**

The rapid adoption of information technology and widespread networking is transforming the research and education landscape. Central to this transformation are scientific and engineering digital data collections. In general, an ecology of institutional arrangements among individuals and organizations sharing an infrastructure will be required to address the particularities of heterogeneous digital data and diverse scholarly and professional cultures.