

PROJECT SUMMARY

Intellectual Merit

The National Science Digital Library (NSDL) is a tremendous, but underutilized resource. NSDL relies on users knowing about (and remembering) its component collections or portals that lead to these, somebody directing users to them, or stumbling across them within the many hits of popular search engines. Furthermore, related resources within NSDL collections, like traditional library resources, rarely are interconnected, which frustrates users in their library tasks. This research facilitates users both within and external to the NSDL to quickly find (“select”) relevant documents and services across (and beyond) the spectrum of NSDL resources.

The IntegraL (Integrating Libraries) project will bring the potentially huge user population of traditional libraries to the NSDL through their libraries’ on-line resources (article databases, on-line catalogs and special collections). Users will interact with these systems as before. In addition, IntegraL automatically will add customized sets of context-sensitive links within their displays to related NSDL resources and appropriate services. Further links will lead to related resources and appropriate services within the traditional library systems. IntegraL will add links to the digital library screens as well, leading NSDL users to related collections and appropriate services both within digital library systems and (with authentication) traditional library resources at their local libraries, as well as to publicly-accessible special collections.

IntegraL will make further contributions to traditional libraries. Its integration will ameliorate the separate “silos of information” problem endemic to libraries that own a myriad of independent systems. This should result in more effective resource utilization, especially for a library’s lesser-known assets (such as special collections), as IntegraL will lead users directly to appropriate resources.

IntegraL proposes several major advances over our prior NSDL digital library integration project. These include extension to the traditional library domain; the next generation of collaborative filtering to customize the links generated; the next generation of federated search, clustered by concepts, over all known traditional and digital library resources; and a rigorous evaluation targeted towards a fundamental understanding of the effectiveness different integration aspects provide (in part to encourage library developers to adopt these techniques).

IntegraL will provide a sustainable technical and community infrastructure. Code will be open source. The project will maintain a free repository of integration modules. Developer support will remain available after the grant period concludes. The research team will foster a developer community, starting with this proposal’s multiple collaborating test beds in NSDL and other digital libraries, public libraries and university libraries. Development will take advantage of the NSDL’s Core Integration features.

Broader Impact

IntegraL will bring direct NSDL access to many thousand users during the grant period through the largest public library in New Jersey, on-line accessibility to all New Jersey public library users, and four college and university libraries. Our broad vision encompasses participation by all public, university and school libraries, as well as all NSDL collections and sharable services.

Future research includes the logical extensions of incorporating secondary school library resources (some school students will be among the experimental subjects); linking on-line bookstores (a pilot is included); and providing access to “knowledge-sharing services” over all resources (which integrating the Core Infrastructure’s annotation service will demonstrate).

The project will involve many school-age, undergraduate and graduate students, both in the evaluation and software development, thus exposing them to and increasing their understanding of research.