



<http://www.matdl.org/>

## Materials Digital Library Pathway

**Ed Level: Undergraduate & above      Discipline: Materials Science**

In this project a consortium of organizations is building an information infrastructure on the foundation of the current [Materials Science Digital Library](#) collection (MatDL) and assuming stewardship of significant content and services to support the integration of education and research in materials science (MS). This Pathways project is facilitating the dissemination of resources generated by government-funded MS collaborations. Start date: October 1, 2005.

**Project Goals:** Integrate MS as a domain and community into NSDL, expand existing collaborations and multiply impact of NSF-supported materials efforts by inclusion of the research from related NSF initiatives: Nanoscale Interdisciplinary Research Teams (NIRTs); Materials Research Science and Engineering Centers (MRSECs), and International Materials Institutes (IMIs). Stewardship activities include support for discovery, access, interoperability, reusability by offering: 1) tools to describe, manage, exchange, archive, and disseminate data among materials teams and centers; 2) workspace for open access development of modeling and simulation tools, 3) services and content for virtual labs in large undergrad intro science courses, and 4) workspace for collaborative development of core undergrad MS teaching materials and ontological tools for enhanced resource discovery.

**Partners:** Kent State University: Laura Bartolo – PI; Cathy Lowe – Project Manager. | National Institute of Standards (NIST): James Warren, Vinod Tewary – Co-PIs | MIT: Adam Powell, Donald Sadoway – Co-PIs | U-Michigan: Sharon Glotzer – Co-PI | Purdue University: Matt Krane – Co-PI | Iowa State University: Krishna Rajan – Co-PI



**Collection size and development:** ~ 500 objects before new site opens (1<sup>st</sup> yr focus on setting up Fedora-based architecture) Peer review based on Merlot model & other review models (e.g. NIST for scientific accuracy).

**Web portal:** Interim initial site. Registration system required for setting up MyDSpace. New Fedora based MatDL portal release scheduled for September 2006.

**Search and browse:** Currently employing DSpace implementation to access published research provided by Massachusetts Institute of Technology, University of Michigan, NIST, and NSF Undergraduate Materials Research. Search by keyword, author, title, subject, abstract, series, sponsor, and identifier. Browse: keyword, title, author, date.

**Special features:** Email updates

**Community sign on:** Identity provider implemented and actively testing Shibboleth software.

**Cataloging/metadata generation/ NSDL MR:** Actively testing iVia software as metadata generation method. Collection and item level metadata in NSDL MR. Supports OAI harvesting.

**Web 2.0 technologies such as blogging, tagging/bookmarking systems (e.g. del.icio.us); RSS feeds; gaming technologies:** Have established a Soft Matter Wiki as well as a Collaborative Code Development portal – both support distributed developers to generate content, add to a web service, or access data.

**Evaluation activities:** PI is Chair of the Educational Impact and Evaluation Committee (EIESC) and is working with NSDL evaluator and EIESC to gather and make available significant NSDL evaluation resources: how they are used, information about approaches that such resources represent, and developing access to evaluation instruments at NSDL.org. Evaluation workshop participation in August 2006. Omniture not implemented on current site, contacts underway. Have developed and begun Evaluation Plan with outside evaluator.

**Outreach activities:** Pathways and Annual Meeting participation. MatDL has two project meetings/year – 1<sup>st</sup> Yr: Sept 2005 (MIT), June 2006 (KSU). Planned Pathways workshop with MRSECs at NSF in September 2006. Active & continuing outreach to MRSECs, IMIs, and wider materials science community, potential for MRSECs to use NSDL as content source as well as to contribute to NSDL. Ongoing participation (presentations, symposium organizers) with three main MS societies: MRS, TMS, ASM. Invited participant in NSF Workshop on Cyberinfrastructure for Materials Science (August 2006).

**Privacy policy posted and accessible:** Yes, from home page (*Terms of Use* link).

**Unique assets / synergies:** Potential for valuable and mutually advantageous partnerships/collaborations with MRSECs, IMIs, and other government-funded research programs to provide potential access to research output. Building ties and pilot projects with the three main MS societies: MRS, TMS, ASM with potential for greater collaborations in content & outreach.