Pathways status report

The focus of Pathways project coordination from January 2006 has been on understanding the full complexity of the current nine projects, their partners, issues, and audiences, and on establishing a coordinated method of tracking their status, progress, common issues, unique challenges, and key points in their development cycle and the corresponding support for integration provided by NSDL CI. Brief descriptions of the projects and their partners are attached.

NSDL CI has adopted a team approach to managing the many interrelated interactions required to planning, managing, and coordinating the integration of Pathways project work with NSDL CI. Regular monthly telecons are conducted with Pathways PIs and with CI staff participation on the second Wednesday of each month. Status reports are provided prior to the calls, and meeting notes are distributed after the calls. CI staff have attended two Pathways project partner meetings (BEN, Math Gateway) since January, and will participate in a number of Pathways workshops being coordinated by Outreach Director Susan Van Gundy. Personal contacts continue to be made and maintained by Eileen McIlvain, Pathways Project Coordinator, as well as other CI PIs and staff, and this information contributes to overall Pathways tracking and the creation of a knowledge base for each project.

The 'touchpoints' for Pathways integration with NSDL CI are numerous; to facilitate a snapshot view of status at any given point, a matrix of key technical and social functions is being developed that enables CI to better integrate with Pathways development cycles, and will be augmented with new elements as necessary. These include functions that are key elements in the Memorandums of Understanding between NSDL CI and Pathways, as well as other key points of interaction and coordination:

1) Community sign-on
    a. Pathways existing login structure
    b. User attribute information collection (identity provider)
    c. Shibboleth software coordination and setup

2) Collection development
    a. Policies collection
    b. Review practices and processes
    c. Vocabularies/taxonomies in use

3) Integration with other NSDL services:
    a. Dialogues between Pathways and Cornell re: Fedora Data Repository integration
    b. Instructional Architect (Utah State)
    c. Content Alignment Tool (CAT) (Syracuse University)
    d. Achievement Standards Network (ASN) (Jes&Co. Washington, Syracuse Univ)

4) Modification of resources
    a. Rights management
    b. Intellectual property
    c. Granularity issues

5) Web portal development tracking
    a. Search capabilities

b. Browse capabilities
c. Unique site features: MyLibrary services,
d. Usability
e. Accessibility
f. Co-branding NSDL
g. Documentation
h. User help
i. Privacy policies
j. Uptime statements

6) Metadata and NDR integration
   a. Metadata generation methods – CWIS, etc.
   b. Sharing of metadata frameworks/schemas with CI
   c. Ingest of metadata with NSDL – OAI or other
   d. CRS access
   e. iVia expert guided crawl participation
   f. Annotations - integration
   g. Resource recommendation services - integration
   h. Email groups - integration
   i. API testing participation
   j. Restricted metadata issues (sharing among Pathways)
   k. User testing
   l. Coordination with nsdl.org for content and contributions
   m. Search enhancements on nsdl.org

7) Outreach and Communications
   a. Co-branding of promotional materials
   b. Partners meetings
   c. Pathways workshops
   d. Annual Meeting planning and participation
   e. Other Pathways outreach activities
   f. OnRamp
   g. Expert Voices participation
   h. Annual report contributions
   i. Monthly Pathways calls

8) Evaluation activities
   a. Web metrics/Omniture software participation
   b. Determining yearly benchmarks
   c. User surveys – both Pathways-specific and NSDL-sponsored
   d. Report backs to community and NSF

This matrix of activities contributes to the creation of an architecture of technological and social integration points for which documentation, how-to's, and best practice documents can be created across multiple dimensions: background information and collection, resource and collection creation, infrastructure and integration, services development, and community participation. Ultimately, these products themselves will be integrated into nsdl.org and the Fedora architecture as NSDL resources, and link to related content such as workshops, online tutorials, case studies, annotations, email lists, etc. These practices will also result in guidelines and ease of integration for new Pathways projects that will be awarded in 2006.

NSDL Pathways:

Applied Math and Science Education Repository (AMSER), PI Rachael Bower, University of Wisconsin. Awarded 2004. Primary community: community and technical colleges. Partners: Internet Scout Project (Univ of Wisconsin), MERLOT (Multimedia Educational Resource for Learning and Online Teaching), the NSF Advanced Technological Education (ATE) projects; the American Association of Community Colleges (AACC), and the American Mathematical Association of Two-Year Colleges (AMATYC).

Bio Sciences Ed Net (BEN), PI Yolanda George, American Association for the Advancement of Science (AAAS). Awarded 2005. Primary community: biological sciences professional societies and organizations, research community, graduate and undergraduate institutions and professional schools. BEN is A partnership of 32 professional societies and coalitions for biology education.

ComPADRE –Resources for Physics and Astonomy Education. PI Bruce Mason. ComPADRE is a partnership of the American Association of Physics Teachers (AAPT), the American Astronomical Society (AAS), the American Institute of Physics and the Society of Physics Students (AIP/SPS), the American Physical Society (APS). Awarded 2005. Its primary community are physics and astronomy educators and students.

Computational Science Education Reference Desk (CSERD), PI Bob Panoff, Shodor Educational Foundation. Partners include the National Computational Science Alliance, and EOT-PACI. Awarded 2004. Primary community: computational science educators; resources consist of models, activities, tutorials, courses, code libraries, applications, algorithms, and architectures.

Engineering Pathway – NEEDS and TeachEngineering. PIs Alice Agogino, and Jacqueline Sullivan. The Engineering Pathway is a partnership between the National Engineering Education Delivery System (NEEDS), a digital library of learning resources for undergraduate and graduate engineering education, and TeachEngineering, a digital library providing standards-based resources and curricula suitable for K-12 education, located at the University of Colorado. Awarded 2005. Their goal is to merge NEEDS and TeachEngineering into a unified portal for K-gray engineering education.

Materials Science Pathway – MatDL at Kent State University, PI Laura Bartolo. MatDL is a partnership among the Materials Science and Engineering Laboratory at the National Institute of Standards and Technology (NIST), Kent State University, Massachusetts Institute of Technology (MIT), the University of Michigan, and the University of Colorado. Awarded Their goal is to provide materials scientific content to students, educators, and researchers. MatDL collaborates closely with the NSF's Materials Research Science and Engineering Centers (MRSECs).

Mathematical Sciences Pathway – Math Gateway is a project of the Mathematical Association of America (MAA). PI Lawrence Moore, Duke University, and Don Albers, MAA. Math Gateway is a partnership bringing together collections/projects of significant mathematical content and services. These include MathDL, Math Forum, MAA Reviews, MathWorld, the National Curve Bank, Connected Curriculum Project, to name a few. Awarded 2004. Math Gateway will release their portal site in early summer 2006.

Middle School Portal – PI Kim Lightle, University of Ohio. Awarded 2003. The NSDL Middle School Portal provides access to selected resources from NSDL appropriate for middle school instruction and professional development. Subject pathways in mathematics, science, and technology present topic lists that take an in-depth look at teachable concepts in science, math, or technology. Features include lively text and graphics along with background for teachers, interactive online activities, data analyses, and links to related topics.

Pathway for Multimedia Resources for the Classroom and Professional Development – Teachers' Domain. PI Ted Sicker, WGBH. Teachers' Domain provides classroom-ready multimedia resources for use in lessons or independent study and a suite of professional development courses for educators. Resource collections are from NOVA, American Experience, and other public television productions and partners. Awarded 2004.

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