

Teachers' Domain Pathway

August 2007

Accomplishments:

Our major Pathways development activity this year has been to update and expand the Life and Physical Sciences collection in collaboration with BSCS and the Harvard-Smithsonian Center for Astrophysics. Our goal was to identify 100 resources from the NSDL to add to Teachers' Domain and to contextualize them with resource metadata including background essays and lesson plans.

We analyzed gaps in the existing collections, based on K-12 standards, significant findings in the field, and the expertise of advisors from these partnering organizations. WGBH selected resources in batches of 10-20 and submitted them to advisors, who reviewed them for accuracy and appropriateness of content and presentation for our audience and accepted or rejected them. We jointly evaluated resources based on their technical durability, visual and interactive presentation, usability, and reliability for persistence, making recommendations for adaptation where appropriate and possible. We continued to find that our reviewers requested that a large percentage of the NSDL resources integrated into Teachers' Domain (approximately 50%) undergo major adaptation to provide a better learning focus for a K-12 audience, to correct online presentation problems, or to correct errors in science content or other information. We then developed background essays and lesson plans, which also went through the review cycle. As a result of this process, we added a total of 100 media assets to the Pathway, including 45 video segments and 55 interactives, adapted from a range of sources including universities, museums, governmental agencies, non-profit organizations, and public television programming, and originally catalogued by a range of NSDL pathways and other projects. The expanded collection is now nearing completion and will be made available to the public by fall, 2007.

In addition to this curation and production activity, we have also been actively involved in evaluation, outreach, and sustainability for Teachers' Domain as an NSDL Pathway.

During this period, EDC/CTT has begun its evaluation of the project in earnest. They conducted an online survey for middle school teachers who teach Earth and Space Science; conducted teacher interviews with a sample of respondents to examine the impact of the materials on their knowledge of Earth and Space Science concepts; conducted pre-surveys with a cohort of middle school teachers enrolled in a Teachers' Domain Professional Development course; conducted interviews with individual scientists and organizations responsible for the original iteration of each reworked ESS resource to document the

effectiveness of adaptations; and began to analyze data on usage of the Earth and Space science materials by the cohort and the general user population of TD. EDC/CCT will deliver an interim report on their efforts by the end of the summer.

Over the course of the year, Teachers' Domain has also collaborated with the CI and other Pathways and NSDL projects in a number of ways:

- We continued to participate in the CI's Omniture user statistics project, which led to the Annual Meeting presentation;
- Through supplementary grant funding, we have been collaborating with Syracuse Univ, DLESE, Jes&Co, the Univ. of Washington, and the NSDL CI on educational standards correlation validity, interoperability, and development of APIs for other NSDL projects to use.
- We participated in monthly Pathways PI phone meetings
- We attended (with funding from non-NSDL projects) meetings held by the Hewlett Foundation on Open Educational Resources, as well as a conference on Digital Libraries in Florence, Italy, together with others from the NSDL.

We have worked actively to ensure the sustainability of the Teachers' Domain pathway. This has included submission of a wide range of grants to private foundations and governmental foundations. Two of these proposals have received funding to date (from the Hewlett Foundation and the NSF Geosciences directorate).

We are now developing a prototype of 20 resources on polar studies under IPY program funding, and have submitted a follow-up proposal to expand the collection and provide professional development modules. We have collaborated with groups working with indigenous populations in Alaska and Hawaii under US Department of Education funding to add indigenous perspectives to Teachers' Domain (our ECHO special collection). We continue working with funding from the Corporation for Public Broadcasting to add resources produced by KQED in San Francisco and WPSU at Penn State University to Teachers' Domain. The Hewlett Foundation funded WGBH to add 20 additional resources across the sciences to help fill in gaps, and most significantly, to determine intellectual property protocols that have allowed us to offer about 1/3 of content presented on Teachers' Domain as open educational resources. These protocols enable users to download, download and share, or download, share, and remix eligible media assets and contextual materials. Grants from the MacArthur and Dreyfus Foundations have enabled us to add resources derived from a NOVA program on the life and work of the African American chemist Percy Julian. The Lowenstein Foundation funded WGBH to focus marketing and outreach efforts on Internet-based channels, helping to increase the reach of Teachers' Domain, and thus the NSDL, into K-12 schools. A newly received grant from the Geosciences directorate will use Teachers' Domain to engage Alaska natives in the geosciences. And a newly received Hewlett Foundation will enable us to continue to work with the public

television system, using Teachers' Domain as a catalyst to build and expand the use of open educational content.

We recently hosted an "NSDL/WGBH Summer Science Forum". This workshop brought together representatives from 13 PBS stations around the country, each of whom also invited a local educational partner. The Forum provided an opportunity for WGBH to present our work as a Pathway to the attendees and explore with them the value of presenting Teachers' Domain and other NSDL resources and features to their audiences nationwide.

This year, we again presented Teachers' Domain at the NSDL booth at the National Science Teachers Association national conference in St. Louis in addition to having our own booth across the exhibit floor. We were able to direct attendees to the NSDL booth and vice versa. At the conference, we ran a presentation using Teachers' Domain collections and the NSDL entitled "Using Multimedia in Teaching Science Concepts."

The conferences we presented at this year included the Maine Science Teachers Association annual conference, the Iowa Public Television Symposium, the Massachusetts Superintendent Leadership Conference, the Penn State Fall Fest, the Connecticut Educators Computer Association, the NSTA Eastern Regional conference in Baltimore, the Association of Educational Service Agencies, the Florida Educational Technology Conference (FETC), the National Educational Telecommunications Association conference, the Texas Instruments T3 conference, Celebration of Learning and Teaching (at WNET New York), and the NSTA Annual Conference in St. Louis.

Teachers' Domain Professional Development Courses are now marketed by PBS TeacherLine, expanding their reach and impact and exposing a larger group of stations and teachers to the NSDL.

We have increased our efforts this year (initially through a grant from the Lowenstein Foundation) to use Internet as a means for outreach. Specifically, we have purchased Google ad words, sent e-blasts, and strategically circulated information about Teachers' Domain through blogs and newswire services. We have also entered into partnerships with a number of organizations, including netTrekker and Ohio Digital Classroom, to integrate Teachers' Domain and thus the NSDL into their offerings. netTrekker has used metadata we provided to integrate our collections into their searches, and several public television stations now or will shortly provide portal sign-ins into Teachers' Domain. As a result of these and other outreach efforts, TD now has over 150,000 registered users in over 40% of US K-12 schools, and has attracted 400,000 users a month early this spring.

Challenges:

As we move forward with Teachers' Domain, with its many different funding sources and partnerships, we are grappling with the fact that it is now as much a "product" as a "project." Unfortunately, most grant-funding opportunities still are tied to deliverables that relate to the "project" aspects of this effort, and only a few (the NSDL one of these notable exceptions) includes a stewardship component that allows us to think in broader terms. So we are looking carefully at strategies to sustain Teachers' Domain as a product. These include:

- Staffing to market to and provide service to clients and end-users
- Improved and more distributed infrastructure and access for publication
- New feature sets to further involve our audience and partners
- Improved coordination across potentially competing project needs and deadlines
- Formal strategic planning for expansion and sustainability of the service