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Web Reviews: e-Science Tools for Librarians

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Web Reviews

Lisa R. Johnston



Reviews of web resources of interest to *SciTech News* readers.

e-Science Tools for Librarians: Highlights from 2010 IATUL Conference

The International Association of Scientific and Technological University Libraries (IATUL) met this summer at Purdue University (Indiana, USA) to discuss "The Evolving World of e-Science." The role of libraries in e-science, or the changing way that scientific research is done in the digital information age, has been slowly becoming clearer, as Tony Hey reminded us, nearly a decade after his 2003 article "**The Data Deluge: An e-Science Perspective**" first outlined the roles of university libraries. Also, Rick Luce (Emory University) highlighted a key need that libraries could support: tools and applications for data during the research phases of the data life-cycle. He explained that somewhere between creating and archiving researchers are looking for better applications for managing data, enabling collaborations and supporting cross-institutional access to research.

Here are some IATUL conference highlights of tools and web resources that libraries are creating and using to support e-science. For more on the conference and the full text of the papers presented, see <http://docs.lib.purdue.edu/iatul2010/>.

EDUCATION AND TRAINING

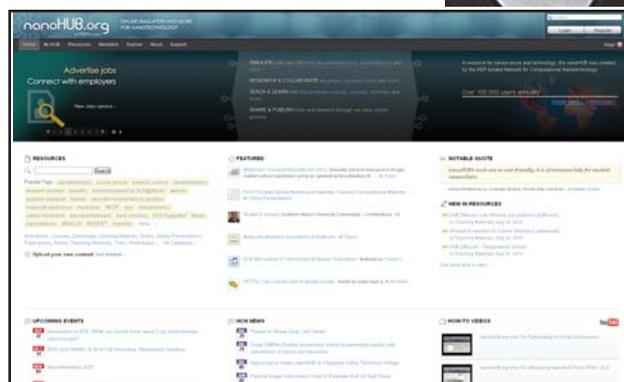
MIT's Data Management Guide

<http://libraries.mit.edu/guides/subjects/data-management>

MIT Libraries web page on Data Management offers advice, resources, and support for best practices managing research data, including a checklist for creating a Data Management Plan - a useful template considering the NSF will require a two-page plan with all new proposal starting this fall. In addition, the Libraries offer workshops on practical tools and methods for better digital data management.

Nanohub

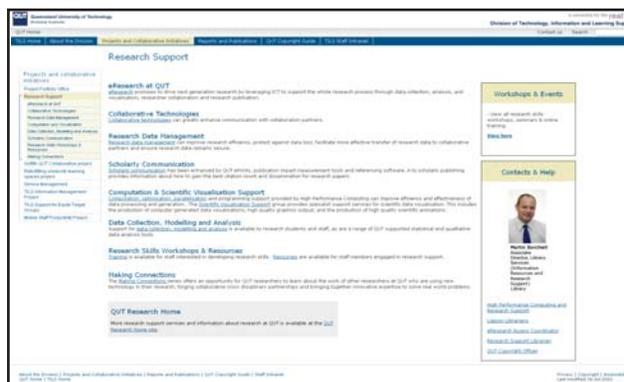
<http://nanohub.org/>



Nanohub is a virtual community for researchers in nanoscience fields. The site brings together bibliographic indexing tools, software, and education/training opportunities, including over 170 tools and 43 courses. This NSF grant funded project created at Purdue University also pioneered the newly open source HUBzero technology (<https://hubzero.org/>), which enables desktop-based software for remote use over the web.

Queensland University of Technology's "Research Support"

<http://www.tils.qut.edu.au/initiatives/researchsupport/>



Very nice example of what is possible when the Libraries partner with other research support units on campus. In this case, a unified directory of services that is oriented around the user rather than the providers of those services. The e-science tools include: collaborative technologies, research data management, scholarly communication and

impact measurement tools, and computation, visualization, and data modeling applications. Also, take a look at their impressive research-skills workshop list including high performance computing courses and data management workshops.

DATA ARCHIVES

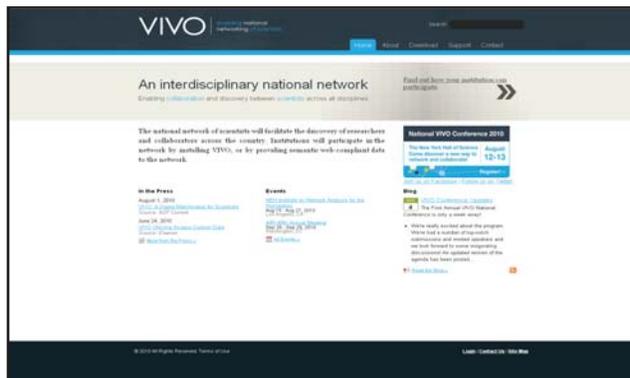
DataStaR

<http://datastar.mannlib.cornell.edu/>

Cornell's Data Staging Repository, DataStaR, manages data collections as well as supports collaboration and data sharing throughout the research process. In addition, researchers at the university get assistance with publishing or archiving data and high-quality metadata to discipline-specific data archives and Cornell's institutional repository. See all **Cornell's Research Management and Publishing Support Directory** at <https://confluence.cornell.edu/display/datasupp/Home>.

VIVO: Support tool for E-science and Translational Research

<http://vivoweb.org/>



Cornell's VIVO recently received a grant to expand its open source platform for converting university personal data into a slick Researcher Profile interface for a broader national network for interdisciplinary research. In this environment, researchers will be profiled and linked to others in their subject and related fields' thereby increasing collaboration. See Cornell's installation of VIVO in action at <http://vivo.cornell.edu/>.

3TU.Datacentre

<http://data.3tu.nl/repository/>

3TU.Datacentre is a Dutch initiative to make data sets more broadly available to researchers worldwide. With 3605 datasets from three countries since it began in 2008, it is growing

at an exceptional rate. The repository recently has been approved to expand its network to a European level.

Data Registry in Melbourne

<http://vitrofe.esrc.unimelb.edu.au:8333>

Interesting collaboration with Faculty Research Profiles and exposing data sets to the Australian National Data Service (ANDS) using VITRO, the backend system of Cornell's VIVO (www.vivo.cornell.edu/). This is interesting because it allows researchers to manage their data throughout the research process, from grant application to data archiving in the national repository. It also allows user to view data sets that will become available in the future- after the research project is complete.

DATA AUTHORING

DataCite

<http://www.tib-hannover.de/fileadmin/datacite/index.html>

Why cite data? According to the European-based DataCite, giving appropriate attribution to research data sources allows for easier access to research data on the internet, increased acceptance of research data as legitimate, citable contributions to the scholarly record, and supports data archiving that will permit results to be verified and re-purposed for future study. To accomplish this, DataCite provides DOI names and a persistent URL to identify data sets on the web for long-term use.

The Dataverse Network Project

<http://thedata.org>

DataVerse Network project is an open source



environment that allows for data archiving and preservation in addition to persistent URLs. This standard-based tool is used by Harvard University's social science data collection IQSS

(<http://dvn.iq.harvard.edu>). The archive provides custom citation information for each dataset and can organize information by author, research group or institution.

Science Commons

<http://sciencecommons.org>



Like creative commons, Science Commons provides advice and a community of resources for content producers to help safeguard their work and ensure proper attribution by those who wish to reuse it. This is a valuable resource for those new to the data copyright field. Also take a look at Creative Commons Zero (CC0) for a no-rights license appropriate for data sets at <http://creativecommons.org/choose/zero/> and Open Data Commons <http://www.opendatacommons.org/licenses/pddl/> for information on Public Domain Dedication and License (PDDL).

E-SCHOLARSHIP: BEYOND E-SCIENCE

Although this year's IATUL conference focused on e-science for science and technology libraries, I frequently observed that many libraries are turning to their Sci-Tech divisions to support e-scholarship, or computationally intensive and virtually collaborative research in all disciplines. These two web sites will supplement the science-focused tools above.

Digital Humanities Gateway

<http://www.arts-humanities.net/>

The arts-humanities.net is a UK-based site that brings together useful tools for the digital humanities and related social sciences, as well as events and ongoing projects. Best of all, you can browse tools by subject, platform and data life-cycle stage. An example tool found in the arts-humanities.net is OpendTect, an analysis software for analyzing seismic data. This tool is used in archeological fields to visualize landscapes once inhabited by humans.

DiRT: Digital Research Tools wiki

<http://digitalresearchtools.pbworks.com/>

Launched in 2008, the Digital Research Tools wiki, DiRT, is still going strong. It offers a cornucopia of web-based tools such as virtual collaboration environments and web-based databases. Also, they frequently update their delicious bookmarks with valuable finds at <http://delicious.com/tag/tools4research>.

READINGS MENTIONED AT THE CONFERENCE

National Academy of Sciences' Ensuring the Integrity, Accessibility, and Stewardship of Research Data in the Digital Age (2009) http://www.nap.edu/catalog.php?record_id=12615

OCLC's Slice of Research Life, <http://www.oclc.org/research/news/2010-06-16.htm>

The Fourth Paradigm, by Tony Hey, <http://research.microsoft.com/en-us/collaboration/fourthparadigm>

Paton Principles: Principles for Open Data in Science, <http://pantonprinciples.org/> ❖

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