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Web Reviews: The State of the Nation's Science and Technology Web

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Web Reviews

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

The State of the Nation's Science and Technology Web

In July the Pew Research Center announced (1) survey results indicating that Americans undervalue our nation's scientific progress. Only 17% of the public surveyed agree that US scientific discoveries are the "best in the world" (an assumption that citation patterns would support). In turn, a majority of scientists surveyed from the American Association for the Advancement of Science (AAAS) feel that their research is inadequately covered by the media and that the "public does not know very much about science."

So what is the solution? In the digital age the burden cannot fall on the media alone to report scientific achievements. Instead we can rely on the fast exchange of information that the web provides and makes publically funded research available to all. Scientific government agencies do this and more by providing reports, articles, and raw data to anyone savvy enough to navigate the myriad interfaces and numerous .gov's available. Here is a concise list of a few that are attempting to help the public find the scientific information they need…understanding those reports can still be a problem for the media.

(1) Pew Research Center for the People and the Press. (2009). "Public Praises Science; Scientists Fault Public, Media Scientific Achievements Less Prominent Than a Decade Ago" Accessed July 29, 2009 at http://people-press.org/report/528/

Data.gov

http://www.data.gov/

Data.gov was launched earlier this year under President Obama's "open government" theme. Using web 2.0 principles, the site grows not only from federally funded agencies depositing their data sets, but from user suggestions and feedback. Newly developed, data.gov is rich with GIS data sets; however, sci-tech data is all but absent. What's nice about this site is the inventory of web-based data analysis tools. One example, Research.gov, searches information on federally-funded science & engineering research grants and their discoveries achieved.

Office of Scientific and Technical Information (OSTI)

http://www.osti.gov/

The Department of Energy (DOE) houses the Office of Scientific and Technical Information (OSTI) which provides the majority of physical science information produced in the government today.

- http://www.scienceaccelerator.gov/

This metasearch engine has numerous publication and data resources and navigates through sources such as: DOE R&D Accomplishments, patents, energy citations database, conference proceedings, Energy Software Center, and the now retired GrayLIT Network. Science Accelerator also searches the E-print Network, a metasearch engine linking to e-prints based in the applied sciences, and Energy Files, a maintained list of over 500 energy related websites,.

- http://www.osti.gov/dataexplorer/

One resource not included in DOE's metasearch is the Data Explorer. More accurately, this DOE site lists numerous resources and funded projects that present their data to the public. None of the data or the analysis tools resides on the site. Still, there are many interesting assets listed such as Human Genome Images or Ocean Carbon Cycle Models.

National Library of Medicine (NLM)

http://www.nlm.nih.gov

The National Library of Medicine (NLM) is taking on the huge responsibility of informing the public not only of science achievements, but of potentially vital, life-saving information. Their services provide access to health information in a variety of ways. Here are just a few:

- http://www.pubmedcentral.nih.gov

Scientific reports produced by federally funded research are mandated by NIH to be placed in the open access full-text PubMed Central repository. Through PubMed anyone can discover articles on non-NIH funded research as well.

- http://www.nlm.nih.gov/medlineplus

MedlinePlus provides the public with a rich

inventory of medial topics and resources, including local health provider resources.

• http://www.ncbi.nlm.nih.gov
Tools like GenBank, TOXNET, and ChemIDPlus are included in this metasearch engine, named Entrez, a user-friendly interface which covers the gamut of life science related information.

National Technical Information Service (NTIS)
http://www.ntis.gov
The National Technical Information Service (NTIS) is a subscription-based index of government information from 1964 onward and housed under the US Department of Commerce. A newly released product, the National Technical Reports Library, promotes access to the full-text of 500,000 technical reports held in the NTIS.

NASA's Scientific and Technical Information (STI)
http://www.sti.nasa.gov
NASA's Scientific and Technical Information (STI) site is a useful portal to aeronautical and astronomical Information. It logically links to resources such as:

• http://nedwww.ipac.caltech.edu/
NASA/IPAC Extragalactic Database (NED) holds a wealth of astronomical data while continuing to silently argue the point that you don't need 21st century web design to present useful information.

• http://nix.larc.nasa.gov
NASA Image eXchange contains a searchable image and video database with open access resources.

• http://ntrs.nasa.gov/
NASA's research database, NASA Technical Reports Server (NTRS) is a full-text article index of NASA technical reports, conference papers, images, movies, and patents dating from 1900 to the present.

• VideoCat: A new PDF order form of digitized NASA videos from the pre-digital era (many for purchase).

•http://www.nasa.gov/missions
NASA's main site, nasa.gov, has recently undergone a redesign: mostly outward public relations news coverage with very little attempt to reconcile the fact that finding information on this site is overwhelming. NASA centers are autonomous and their websites follow suit. Therefore information is scattered across countless domains. However this attempt, a "Mission Finder" buried below press coverage and 2.0 tools, might be helpful to direct you to the right domain.

National Institute of Standards and Technology (NIST)
http://www.nist.gov
The National Institute of Standards and Technology (NIST) provides the measurements and standards for the US's scientific industry. Their numerous programs and laboratories are searchable through the NIST Data Gateway, which indexes most of their free and subscription-based resources. In addition, the site organizes dozens of NIST resources by subject area and publishes reference data guides and handbooks both online and in print.

U.S. Geological Survey (USGS)
http://www.usgs.gov/pubprod
The publications warehouse of the U.S. Geological Survey (USGS) offers a searchable index to publications dating back to the 1880's. Full-text reports are available for many citations. In addition to reports, the USGS offers downloadable aerial photos and geologic maps. For example, the Topographic map series is searchable through a Google map interface allowing users to search and download current and historic topo quadrangles.

Science.gov
http://www.science.gov
The US Office of Scientific and Technical Information launched Science.gov in 2002 and since then this federated search portal has grown to include access to 38 science databases and searches nearly 2000 government websites. Included in the Science.gov metasearch are many databases already mentioned in this article like NTIS, Science Accelerator, NTRS, PubMed, USGS Publications Warehouse, and NSCEP.

World Wide Science
http://WorldWideScience.org
A world-wide equivalent to USA's Science.gov, and created by the same organization, this federated search engine includes government scientific agencies from around the world and includes dozens of publication and data repositories from every continent.

Other sci-tech government agencies:

Defense Technical Information Center, http://www.dtic.mil

Department of Agriculture (USDA), http://www.usda.gov

Department of Homeland Security Research, http://www.dhs.gov/xres

Environmental Protection Agency, http://www.epa.gov/nscep

Federal Communications Commission, http://www.fcc.gov

National Agricultural Library, http://www.nalusda.gov

National Oceanic and Atmospheric Administration, http://www.noaa.gov

National Science Foundation, http://www.nsf.gov

US Patent and Trademark Office, http://www.uspto.gov

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