

# SCIENCE TECHNOLOGY BIBLIOGRAPHY:

## TABLE OF CONTENTS:

- I. INTERNET RESEARCH STRATEGIES FOR SCIENCE
- II. SEARCH ENGINES SPECIFICALLY FOR SCIENCE
- III. FREE DATABASES
- IV. HOW TO KEEP UP WITH NEW DEVELOPMENTS
- V: FREE ONLINE JOURNALS
- VI: FREE VIDEOS
- VII. DISTANCE EDUCATION RESOURCES (MIT, UMASS BOSTON, UTAH STATE, U CAL IRVINE, ACADEMIC EARTH, etc.)
- VIII: RESOURCES BY AREA OF SPECIALTY
- IX. ACCESS TO THESES AND DISSERTATION RESEARCH
- X: OTHER RESOURCES
- XI. SCIENCE BLOGS
- XII: SCIENCE LESSON PLANS

### **I. INTERNET RESEARCH STRATEGIES:**

+ SEARCHING FOR SCIENCE! <http://searchingforscience.pbwiki.com/>  
How to Start the Research Process

+ SCIENCE RESEARCH AND TECHNOLOGY BIBLIOGRAPHIES FROM THE LIBRARY OF CONGRESS: <http://www.loc.gov/rr/scitech/SciRefGuides/>

+ SCIENCEWORLD <http://scienceworld.wolfram.com/>  
Comprehensive Free online encyclopedias of astronomy, math, physics, scientific biographies, and scientific books, with many equations and formulas.

## II. SEARCH ENGINES:

+ SCIENCE RESEARCH SEARCH ENGINE:

<http://www.scienceresearch.com/scienceresearch/>

+ VADLO: A LIFE SCIENCES SEARCH ENGINE - <http://digbig.com/4yhaq>

+10 SCIENCE SEARCH ENGINES:

<http://hwlibrary.wordpress.com/2008/09/22/science-search-engines/>

+SCIRUS: <http://www.scirus.com>

One of the first "science focused" specialty search engines on the web. Scirus is owned and operated by Elsevier and much of the Elsevier content is in the database via Science Direct

+ SCITOPIA <http://scitopia.org/scitopia> is now available for beta testing. 15 scholarly organizations are supporting it.

+ 5 DEEP WEB SCIENCE SEARCH ENGINES:

<http://www.confidentialresource.com/2009/03/25/science-searches/>

+THE GLOBAL SCIENCE GATEWAY <http://worldwidescience.org/>

is also new online resource, functioning as a gateway to 15 national Science portals. This is a partnership between US DOE, The British Library, and other countries. The U.S. Department of Energy (DOE) and the British Library, along with other participating countries, have made available an online global gateway to science information from 15 national portals. The gateway, **WorldWideScience.org**, gives citizens, researchers and anyone interested in science the capability to search science portals not easily accessible through popular search technology such as that deployed by Google, Yahoo! and many other commercial search engines.

+ SCIENCE.GOV [www.Science.gov](http://www.Science.gov) is a gateway to over 50 million pages of authoritative selected science information provided by U.S. government agencies, including research and development results. The Library of Congress has just joined the Science.gov alliance.

+ OAISTER (<http://www.oaister.org>) While not all of the content in this union catalog and search engine is "science related" it is more than worthy of scholarly attention. At last count, the OAISTER (pronounced "Oyster")

database contained over **26 million records** from close to 1600 international contributors. OAISTER harvests data from numerous sources around the globe.

+ SCIENCE VIDEOS SEARCH ENGINE <http://sciencehack.com/>

A wonderfully useful tool. It's difficult to locate resources across science's boundary lines with most search engines because they may be tagged solely by the specific discipline or narrow subject of the resource. In addition, every video included has been "screened by a scientist to verify its accuracy and quality." There aren't a lot of videos here yet, but this ongoing project aims to index every science video on the internet.

### III. FREE DATABASES:

+ THE ESCHOLARSHIP REPOSITORY AND THE CALIFORNIA DIGITAL LIBRARY <http://repositories.cdlib.org/escholarship> and <http://escholarship.cdlib.org> Many new scientific and research studies are published monthly.

+ BIOMEDCENTRAL: <http://www.biomedcentral.com/browse/bysubject>  
The research articles in all journals published by BioMed Central are 'Open Access'. They are available online without charge. A number of journals require an institutional or a personal subscription to view other content, such as reviews or reports. Free trial subscriptions to these journals are available. Access to the content is free. However, one does need to register (free) to search. A list of journals indexed in this database can be found here: <http://www.biomedcentral.com/browse/journals/>

+ THE HIGHWIRE PRESS ARCHIVE is nearing 1.7 million free, full text articles. They provide a list of titles and related info. <http://highwire.stanford.edu/lists/freeart.dtl>

+ DOAJ: DIRECTORY OF OPEN ACCESS JOURNALS (<http://www.doaj.org>)  
Over 3000 journals are covered in this free database, many of them scientific, engineering or technology journals. One can browse by journal or search by keyword for articles written on a particular concept.

+ NATIONAL SCIENCE DIGITAL LIBRARY <http://nsdl.org/>  
An essential resource for science educators and for anyone interested in science.

+ OPEN SCIENCE DIRECTORY <http://www.opensciencedirectory.org/>

A large collection of e-journals is now available for researchers in developing countries. The Open Science Directory, with the support of cooperating partners, is creating a unique access point to all these journals.

+ FREE PATENT ONLINE: A Patent Database

<http://www.freepatentsonline.com>

Searching for patents is crucial if you need to keep up to date on the innovations of a competitor, find a specialist in a research field or build your knowledgebase for a specific technology. **FreePatentsOnline** is a search engine of existing patents. You can use it to browse by keyword, by patenting companies or by topic.

+ PUBLIC LIBRARY OF SCIENCE PLoS is a nonprofit organization of scientists and physicians committed to making the world's scientific and medical literature a freely available public resource."

This resource includes access to E-Journals in all fields and to the latest research reports. <http://www.plos.org>

+PUBLIC LIBRARY OF SCIENCE: PUBLISHED ARTICLES:

<http://www.plosone.org/home.action>

+ PUBMED: A FREE DIGITAL ARCHIVE OF LIFE SCIENCES AND BIOMEDICAL JOURNALS: <http://www.pubmedcentral.nih.gov/>

From the U.S. National Institutes of Health. An Outstanding Resource.

+ PUBMEDCENTRAL <http://www.pubmedcentral.nih.gov/>

This is a free digital archive of biomedical and life science journals with new content **being added all of the time**. A **complete title list** is available

+SCIFEEDS: <http://www.scifeeds.com/> SciFeeds delivers to you the most recent life science literature as it is published direct from RSS feeds.

+SCIENCE RESEARCH.COM "Your One Stop Source for Scientific Research"

<http://www.scienceresearch.com/search/> A free, publicly available web portal allowing access to numerous scientific journals and public science databases. It allows students, teachers, professors, researchers, and the general public to access pertinent science information quickly and easily.

+ U.S. NATIONAL LIBRARY OF MEDICINE – MEDLINE PLUS

<http://www.nlm.nih.gov/medlineplus/> Medline Plus combines access to medical reference tools (encyclopedia, dictionary, directories, etc.) with pharmaceutical information, the latest research findings and links to

resources on a wide range of health topics. This resource includes Videos of Surgery Procedures.

WORLDWIDESCIENCE [MACROMEDIA FLASH PLAYER]

<http://worldwidescience.org/>

As its name implies, the WorldWideScience site is a global science gateway that is meant to help connect a worldwide audience to various national and international scientific databases. The site was developed and is maintained by the Office of Science and Technical Information (OSTI,) with the U.S. Department of Energy. Visitors to the site's homepage can click on an interactive map of the world's countries to locate participants and their websites. After clicking on a country, a list of available resources will appear in a box immediately to the right of the world map. Dozens of countries are currently represented, and visitors will find Colombia's "Scientific Electronic Library Online", India's "Indian Academy of Science", and Cameroon's "African Journals Online". The site is rounded out by an advanced search option and contact information.

+DOE EXPANDS GLOBAL SCIENCE PORTAL. Government Computer News, June 12, 2008.[http://www.gcn.com/online/vol1\\_no1/46450-1.html](http://www.gcn.com/online/vol1_no1/46450-1.html)

The article refers to <http://worldwidescience.org/> whose governance structure is provided by the Worldwide Science Alliance <http://worldwidescience.org/alliance.html>

+ OTHER FREE ONLINE RESOURCES:

<http://eprints.rclis.org/archive/00006597/01/OADeveloping.pdf>

+ OTHER OPEN ACCESS REPOSITORIES:

[http://www.ifla.org/IV/ifla72/papers/151-Oliver\\_Swain-en.pdf](http://www.ifla.org/IV/ifla72/papers/151-Oliver_Swain-en.pdf)

#### **IV. HOW TO KEEP UP WITH NEW DEVELOPMENTS IN SCIENCE AND TECHNOLOGY**

+CARNEGIE INSTITUTION FOR SCIENCE [MACROMEDIA FLASH PLAYER, PDF] <http://www.ciw.edu/>

Over the past century, the Carnegie Institution has continued to support a wide range of scientific endeavors, and researchers such as Edwin Hubble, Barbara McClintock, and Andrew Fire have been associated with this august organization. On their first-rate site, visitors can browse through sections that profile their various departments (which include embryology and global ecology), read their latest reports, and view an interactive calendar of events sponsored by the Institute. Visitors with a scholarly bent will want to browse on over to the "Publications/Archives" section. The online

offerings span the past five decades, and visitors can view everything from "Ceramics for the Archaeologist" to "How Galaxies Rotate".

+SciBYTES: WHAT'S NEW IN RESEARCH: <http://sciencewatch.com/dr/sci/>

+ALLTOP SCIENCE: <http://science.alltop.com/>

Science news from a variety of sources. Essentially, an aggregation of RSS feeds.

+LEARNINGSCIENCE <http://www.learningscience.org/index.htm>

Using the National Science Education Standards as their benchmark, the Learning Science organization has developed this site to bring hundreds of science-based learning tools to the general public. The Learning Science organization is a collaborative project created by individuals at the College of Education at Temple University, George Mehler, and teachers at the Central Bucks School District in Pennsylvania. Visitors to the site will notice that the materials are divided into seven primary sections, including "Physical Science", "Life Science", and "Science & Society". Within each section, visitors can browse through the teaching resources, which include interactive web-based lessons, pedagogical tools, and links to external resources created by organizations such as PBS and Rice University. One section is worth singling out for special attention: "Tools to Do Science". Here visitors will find printable rulers, a printable protractor, a stop watch, and printable graph paper. Finally, visitors can search the entire site via a convenient search engine and also send along their own comments.

+ LOW DOWN ON SCIENCE: <http://www.lohdown.org/> (From National Public Radio)

+ SCIENCE BOOKS ONLINE (FREE): <http://sciencebooksonline.info/>

### Science Books Online

[Science Books Online](http://sciencebooksonline.info/) is a directory of **free** ebooks for all areas of science. The books range from small PDF pamphlets to full-length texts made available in electronic form for free. Most of the materials have to be downloaded in order to be viewed but there are some materials that you can view directly within your browser.

+ SCIENCE BULLETINS

<http://www.amnh.org/sciencebulletins/>

+ SCIENCE LINKS: SCIENCE LINKS:

<http://www.freetech4teachers.com/2009/03/science-links-you-might-have-missed.html>

+ SCIFEEDS: <http://www.scifeeds.com/> SciFeeds delivers to you the most recent life science literature as it is published direct from RSS feeds.

+ SCIENCE DEVELOPMENT: latest developments in Science: [www.scidev.net](http://www.scidev.net) Can also migrate to specific regions of the world to see what is going on scientifically in a variety of countries.

+ SCIENCE UPDATE: <http://www.scienceupdate.com/index.php>  
(From the American Association for the Advancement of Science)

+ SCIENCEWATCH.COM <http://www.sciencewatch.com/>  
A free, open web resource for new trends and research in science

+SCIENCE AT NASA: Science@Nasa <http://science.hq.nasa.gov/>  
NASA's science mission directorate website with numerous science-related articles, images, and other features.

+SCIENCE IN FOCUS [MACROMEDIA FLASH PLAYER]

<http://www.sumanasinc.com/scienceinfocus/scienceinfocus.html>

Sumanas Inc.'s website offers a wide range of material, such as animations of scientific processes, for a range of scientific disciplines, but here visitors will find their "Science in Focus" section of the website. Some of the topics that are brought to life with animating technology are antibiotic resistance, stem cell research, malaria, anthrax, gene therapy, and peptic ulcers. Click on "Go to Presentation" next to your topic of choice, and you'll be taken to a page that has the animation ready to play, but also has several links to outside sources of information. When you're ready to view the animation, click on the link "Click to view animation" and you'll be shown a simple player that will allow you to listen to the narration while viewing the animation, or read the text while viewing the animation. Visitors shouldn't miss the Malaria Parasite animation for an explanation of how humans, mosquitoes, and the Plasmodium parasite all have to be involved to successfully pass on malaria.

+ AMERICAN MUSEUM OF NATURAL HISTORY: SCIENCE BULLETINS [MACROMEDIA FLASH PLAYER] <http://www.amnh.org/sciencebulletins/>

Going to the American Museum of Natural History is a pretty wonderful experience, but if you can't make it to the Upper West Side of New York on a regular basis, you can still keep in touch via their Science Bulletins. These online video features bring curious visitors the latest developments in the fields of astrophysics, human biology, biodiversity, and evolution.

+ SCIRUS TOPIC PAGES at: (Latest Scientific Discoveries explained in Detail) <http://topics.scirus.com>

LIST OF ALL TOPIC PAGE TITLES AT: <http://topics.scirus.com/topicindex.jsp>

+ SCIENCE NOW: THE LATEST NEWS HEADLINES from the Scientific World <http://sciencenow.sciencemag.org/> Keeping tabs on important developments in the world of science can be rather exhausting, especially considering the number of websites dedicated to various fields of scientific endeavor. One very helpful way to do this is through the ScienceNOW site, which features daily news items from Science magazine. Visitors can access all news items from the previous four weeks at no charge, and they may also wish to sign up to receive email alerts and RSS feeds.

+MIND MATTERS - SCIENTIFIC AMERICAN COMMUNITY

<http://science-community.sciam.com/blog/Mind-Matters/300000977>

An intriguing blog where "top researchers in neuroscience, psychology and psychiatry explain and discuss their fields." Among the topics: "Your Brain's Spam Filter," "How Stereotypes Affect Performance," and many more intriguing topics.

+ SCIENCE AT A DISTANCE: E-LEARNING MODULES [Quick Time]

[http://www.brooklyn.cuny.edu/bc/ahp/Modules/Modules\\_HP.html](http://www.brooklyn.cuny.edu/bc/ahp/Modules/Modules_HP.html)

Professor John Blamire has crafted this very fine set of online learning modules for students interested in learning about everything from the properties of proteins to Mendelian genetics. First-time visitors should take a look at the video introduction created by Professor Blamire. This introduction tells visitors about the layout of the site and the resources they will find here. Each of the twelve instructional resources on the site contains a brief overview of the topic, and then a "Research Investigation" assignment. Students can complete these investigations using the materials within each lesson, and they can also take a look at some additional readings which explain key concepts. The site also contains a "Words of Science" section, which provides concise definitions of basic terms, such as entropy and glucose

+ THE WHY FILES: SCIENCE BEHIND THE NEWS [HTTP://WHYFILES.ORG/](http://WHYFILES.ORG/)  
The mission of The Why Files is to explore the science, math and technology behind the news of the day, and to present those topics in a clear, accessible and accurate manner.

+ BBC: SCIENCE AND NATURE: <http://www.bbc.co.uk/sn/>  
The best of BBC Science and Nature, from TV and radio, to the web and beyond. Take a tour from the smallest atoms, to the largest whales and the most ferocious dinosaurs. Travel from the bottom of the ocean to the furthest stars.

+ SCIENCEDAILY: <http://www.sciencedaily.com/>  
ScienceDaily is one of the Internet's leading online magazines and Web portals devoted to science, technology, and medicine. The free, advertising-supported service brings you breaking news about the latest discoveries and hottest research projects in everything from astrophysics to zoology.

+ SCIENCE LINKS: <http://www.freetech4teachers.com/2009/03/science-links-you-might-have-missed.html>

+ POLICY RESEARCH AND ACCESS TO RESEARCH STUDIES IN SCIENCE AND TECHNOLOGY: PolicyArchive (<https://www.policyarchive.org/>) is a joint project of the Center for Governmental Studies (CGS), a nonprofit organization in California, the Indiana University Purdue University Indianapolis Library and Communications Consortium Media Center in Washington, DC. From the July, 2008 Issue of ResourcesHelf: <http://www.ResourcesHelf.com>:

**“Problem:** American philanthropic foundations spend over \$1.5 billion a year on research. Spread out across the nation among diverse libraries, institutions, databases, and websites, this valuable research can be difficult or impossible to identify and obtain once it has been published. Research organizations have no central place to distribute or archive their content, and search engines cannot easily locate much policy research. Research is not optimized to appear at the top of search engine results. Existing policy websites are focused on single issues or available only upon payment of substantial fees.

**Solution:** PolicyArchive simplifies this complex research landscape by providing a universal, easy-to-use, free, and open digital archive of foundation-funded and other public policy research. The PolicyArchive solution provides public interest organizations a low-cost electronic system

for distributing, publicizing, and archiving their research. It allows research users, policy makers, the media, and the public to quickly access the depth and breadth of research in various subject matters. It also provides a direct line of communication between research providers and end-users, thus increasing public awareness of an organization's work and adding significant value to their research investment. Ultimately, PolicyArchive will indefinitely preserve the life of public policy research, substantially increase its impact, and provide society at large with long-term access to the benefits of that important research. PolicyArchive uses a dropdown menu for browsing by topic, author, funder, or publisher. One can also search via the keyword search box next to the dropdown menu. An advanced search form offers menu-driven field searching, Boolean options, and the ability to limit your search to a particular topic or type of publication.

Topic "quick links" are available at the bottom of the home page:

- \* Agriculture, forestry and fishing
- \* Banking and finance
- \* Business
- \* Culture and religion
- \* Economics
- \* Education
- \* Energy
- \* Environment
- \* Government
- \* Health
- \* Human rights
- \* International relations
- \* Justice
- \* Labor
- \* Law and ethics
- \* Manufacturing and industry
- \* Media, telecommunications, and information
- \* Military and defense
- \* Politics
- \* Population and demographics
- \* **Science and technology**
- \* Social conditions
- \* Trade
- \* Transportation

The archive currently contains more than 15,000 documents; organizations are encouraged to register and upload their research to the site. More than 250 diverse institutions are already doing so, from Action for Children to

Women's Voices for the Earth. The entire political spectrum is represented as well - from the liberal Center for American Progress, to the libertarian Cato Institute, to the conservative Heritage Foundation. About halfway down the home page, on the right hand side, you can see the latest additions to the archive. You can subscribe to an e-mail newsletter if you're interested in keeping up with what's new."

+ RESOURCES FOR LEARNING:

**<http://www.amnh.org/education/resources/index.php>**

Resources for Learning, a site from the American Museum of Natural History, is a collection of activities, articles, evidence and analysis and more, for educators, families, students and anyone interested in teaching or learning about science. There are over 1137 resources to choose from

[NATIONAL SCIENCE FOUNDATION: DISCOVERIES:](#)

**<http://www.nsf.gov/discoveries/>**

Every day, research sponsored by the National Science Foundation (NSF) turns up a new discovery. NSF created this website to serve as a clearinghouse of information about the work they sponsor. The Discoveries site can be searched in its entirety, or visitors can just peruse the chronological list that is front and center on the homepage. NSF's public investment in science, engineering, education, and technology is prolific but most are unaware of the results. Here, visitors can learn about NSF projects that concern the "Internet, microbursts, Web browsers, extrasolar planets, and more... a panopoly of discoveries and innovations that began with NSF support."

#### **IV. FREE ONLINE JOURNALS and BOOKS:**

+ The American Journal of Science: <http://ajs.library.cmu.edu/>

Started in 1818, the American Journal of Science (originally called The American Journal of Science and Arts) is the oldest scientific journal published without interruption in the United States. Today the Journal deals only with geology and related earth science, but for many years it covered a **wider range of scientific and artistic endeavors**. Recently, staff members at Carnegie Mellon University's library decided to create an online collection, which contains over **140 volumes of the Journal**. Visitors can search the entire contents of the collection at their leisure, or they can just browse around for a bit. For historians of science and those with a curiosity about what scientists and others found of importance in the 19th century, this collection will be invaluable. **The site is rounded out by a FAQ area and a link to other digital collections created by Carnegie Mellon University.**

+ LIST OF SCIENTIFIC JOURNALS (FROM WIKIPEDIA ENTRY):

[http://en.wikipedia.org/wiki/List\\_of\\_scientific\\_journals](http://en.wikipedia.org/wiki/List_of_scientific_journals)

+ BIOMEDCENTRAL: <http://www.biomedcentral.com/browse/bysubject>

The research articles in all journals published by BioMed Central are 'Open Access'. They are available online without charge. A number of journals require an institutional or a personal subscription to view other content, such as reviews or reports. Free trial subscriptions to these journals are available.

+ COLLECTIONS OF FREE MEDICAL JOURNALS:

<http://freemedicaljournals.com> Provides free access to over 1,450 Medical Journals.

+ OPEN SCIENCE DIRECTORY: ACCESS TO ONLINE JOURNALS VIA OPEN SCIENCE DIRECTORY:

<http://atoz.ebsco.com/titles.asp?id=8623&sid=178939432&TabID=2>

<http://www.opensciencedirectory.net/>

Readers may have heard of the "digital divide", but what about the scientific "digital divide"? The Open Science Directory is attempting to bridge this gap by providing access to a wide range of journals to researchers in both developing and developed countries. Working with the support of EBSCO Information Services and Hasselt University Library, the Open Science Directory provides access to approximately 13000 scientific journals. The Directory includes collections of open access journals and also draws on a variety of other resources, including BioMed Central and PubMed Central. By clicking on the "Open Science Directory" tab, visitors will be redirected to the site's sophisticated search engine.

+ WEB BASED RESOURCES (Journals plus Web Sites): <http://ejw.i8.com/>

+ SCIENCE DAILY <http://www.sciencedaily.com/>

ScienceDaily is one of the Internet's leading online magazines and Web portals devoted to science, technology, and medicine.

+ SCIENCE MAG: <http://www.sciencemag.org/> The latest news and discoveries in all scientific fields!

+ SCIENCE NATION – an online science magazine from the National Science Foundation

[http://www.nsf.gov/news/special\\_reports/science\\_nation/index.jsp](http://www.nsf.gov/news/special_reports/science_nation/index.jsp)

+ SCIENCE BOOKS ONLINE (FREE): <http://sciencebooksonline.info/>

### Science Books Online

[Science Books Online](http://sciencebooksonline.info/) is a directory of **free** ebooks for all areas of science. The books range from small PDF pamphlets to full-length texts made available in electronic form for free. Most of the materials have to be downloaded in order to be viewed but there are some materials that you can view directly within your browser.

## VI. FREE VIDEOS:

+ BLINKX: SEARCH FOR EDUCATIONAL VIDEOS USING ONE OF THE BEST SEARCH ENGINES JUST FOR VIDEOS: <http://blinkx.com/>

Blinkx is the world's largest and most advanced video search engine. Fed by automatic spiders that crawl the web for audio video content and having content partnerships with over 200 leading media companies, blinkx uses advanced content analysis to better retrieve educational content.

+ FREE VIDEOS FOR LEARNING: <http://www.nextvista.org/>

+FREE SCIENCE AND VIDEO LECTURES ONLINE

<http://freescienceonline.blogspot.com/>

Searchable blog-based archive offers lectures and slides for introductory science and math courses, and a wide variety of more specialized topics.

+ FREE SCIENCE LECTURES ONLINE: <http://www.freesciencelectures.com/>

+ SCIENCE VIDEOS SEARCH ENGINE <http://sciencehack.com/>

A wonderfully useful tool. It's difficult to locate resources across science's boundary lines with most search engines because they may be tagged solely by the specific discipline or narrow subject of the resource. In addition, every video included has been "screened by a scientist to verify its accuracy and quality." There aren't a lot of videos here yet, but this ongoing project aims to index every science video on the internet.

+ SCITALKS VIDEOS: SMART PEOPLE ON VIDEO DISCUSS SCIENTIFIC TOPICS: <http://scitalks.com/index.php>

+ VIDEO LECTURES ON ANY TOPIC <http://videolectures.net>

+ FORCES OF NATURE ([blog review](#)) ([direct link](#))

+ LESSON PLANS FROM THE DEPARTMENT OF ENERGY ([blog review](#)) ([direct link](#))

+ SCIENCE BUDDIES ([blog review](#)) ([direct link](#))

+ UNDERSTANDING THE WATER CYCLE ([blog review](#)) ([direct link](#))

+ WHO WANTS TO BE A SCIENCE MILLIONAIRE? ([blog review](#)) ([direct link](#))

+ PERIODIC TABLE OF VIDEOS ([blog review](#)) ([direct link](#))

+ WILD SANCTUARY - HEAR THE SOUNDS OF NATURE ([blog review](#)) ([direct link](#))

+ PHUN PHYSICS SIMULATOR ([blog review](#)) ([direct link](#))

+ ATLAS OF OUR CHANGING ENVIRONMENT ([blog review](#)) ([direct link](#))

+ SCIENCE FACTS: VIDEOS ON DEMAND FROM THE ANNENBERG FOUNDATION: (access to these videos is free, but you do need to register first, registration is free however) <http://www.learner.org>  
Many documentary Science videos are included; for free viewing.

Be sure to visit the related TEACHER'S LAB

<<http://www.learner.org/redirect/january/lab56.html>> featuring a survey about common astronomy misconceptions and other related activities.

+ "PLANET EARTH" <http://www.learner.org/redirect/january/pe57.html>  
Program 3, "The Climate Puzzle," looks at the relationship between Earth's cyclical movements and periodic climate change.

+ EXPLORE THE PHYSICS OF EARTH'S rotation and its (slightly) elliptical orbit, and learn the relevant formulas with "The Mechanical Universe...and Beyond" <http://www.learner.org/redirect/january/mech58.html>

+ "THE HABITABLE PLANET: A Systems Approach to Environmental Science" (high school/college) <http://www.learner.org/redirect/january/hab40.html>

+ "LEARNING SCIENCE THROUGH INQUIRY" (K-8)  
<http://www.learner.org/redirect/january/scinq41.html>

+ "THE MECHANICAL UNIVERSE...AND BEYOND" (COLLEGE/HIGH SCHOOL)  
<http://www.learner.org/redirect/january/mech42.html>

+ "SCIENCE IN FOCUS: ENERGY" (K-6)  
<http://www.learner.org/redirect/january/ener43.html>

\_ "SCIENCE IN FOCUS: SHEDDING LIGHT ON SCIENCE" (K-5)  
<http://www.learner.org/redirect/january/light44.html>

+ "THE WORLD OF CHEMISTRY" (COLLEGE/HIGH SCHOOL)  
<http://www.learner.org/redirect/january/chem45.html>

**Other Free Videos from Annenberg Media** (<http://www.learner.org>) include these:

+ Instructional video series on **CHEMISTRY**  
<http://www.learner.org/resources/series61.html>> ,

**+ EARTH SCIENCE**

<<http://www.learner.org/resources/series78.html>>  
<<http://www.learner.org/resources/series49.html>> ,

**+ PHYSICS**

<<http://www.learner.org/resources/series42.html>> ,

**+ BIOLOGY**

<<http://www.learner.org/courses/biology/>> ,

**+ MICROBIOLOGY**

<<http://www.learner.org/resources/series121.html>> ,

**+ NEUROSCIENCE**

<<http://www.learner.org/resources/series142.html>> ,

**+ ENVIRONMENTAL SCIENCE**

<<http://www.learner.org/courses/envsci/>> ,

plus series specifically designed for teacher professional development  
<[http://www.learner.org/channel/chnnl\\_workshops.html](http://www.learner.org/channel/chnnl_workshops.html)>.

Also see Annenberg Media ([www.learner.org](http://www.learner.org)) Science interactives  
<<http://www.learner.org/interactives/>> for unique learning experiences.

## **VII. DISTANCE EDUCATION RESOURCES:**

+ Science Education: A Recently Updated Science Tracer Bullet from the Library of Congress <http://digbig.com/5bahya>

+ Academic Earth: Free Educational Videos and Resources on numerous scientific disciplines: <http://www.academicearth.org> (Voted one of the best academic websites for 2009 from a consortium of teachers.)

+CHEMISTRY COURSES AND LABS: <http://usefulchem.wikispaces.com/>

+ OPEN EDUCATIONAL COMMONS: FREE COURSES IN SCIENCE AND TECHNOLOGY:  
[http://www.oercommons.org/browse/general\\_subject/science-and-technology](http://www.oercommons.org/browse/general_subject/science-and-technology)

+ VIRTUAL COURSEWARE FOR SCIENCE EDUCATION:  
<http://nemo.sciencecourseware.org/eecindex.php>

The Virtual Courseware Project produces interactive, online simulations for the life science laboratory or for earth science field studies. The activities are designed to enhance an existing curriculum and include online assessments. They can be used by students ranging from middle school, high school, or college classrooms.

+ Also check out the OCW CONSORTIUM at <http://ocwconsortium.org> (CLICK ON THE **MEMBERS** TAB) for a listing of other universities offering free lecture notes, syllabi, student projects, and audio and video of classes. Most prominent among these are MIT (<http://ocw.mit.edu>), Yale (<http://open.yale.edu/courses/>) and Videos of UC Berkeley classes, many of which are the Sciences and technology areas (<http://youtube.com/ucberkeley>)

+LABS AND COURSES FROM AROUND THE WORLD:  
[http://www.openwetware.org/wiki/Main\\_Page](http://www.openwetware.org/wiki/Main_Page)

+ DISTANCE EDUCATION RESOURCES FROM MIT [MASSACHUSETTS INSTITUTE OF TECHNOLOGY]: <http://ocw.mit.edu> Includes an extensive Engineering Curriculum.

+ OTHER UNIVERSITIES OFFERING DISTANCE EDUCATION COURSES: <http://ocwconsortium.org> (**Click on MEMBERS**)

+SCIENCE PODCAST COLLECTION:  
[http://www.openculture.com/2007/02/science\\_podcast-2.html](http://www.openculture.com/2007/02/science_podcast-2.html)

### **VIII.RESOURCES BY AREA OF SPECIALTY:**

+ ANATOMY AND PHYSIOLOGY TUTORIALS:  
<http://www.freetech4teachers.com/2008/09/interactive-anatomy-and-physiology.html>

+ ASTRONOMY RESEARCH CENTER:  
<http://www.astronomycenter.org/index.cfm>

+ BIODIRECTORY: [http://mybio.net/biowiki/Main\\_Page](http://mybio.net/biowiki/Main_Page)  
Free Online Resources in Biology, Chemistry, Genetic Sequencing, Proteins, and Medicine.

+ THE BIOLOGY CORNER <http://www.biologycorner.com/>  
On the site, visitors will find labs,worksheets, and various classroom activities. The "webquests" feature on the site is particularly interesting; this type of exercise requires students to peruse several websites that address a certain theme or topic. Some of the themes covered include bioethics, evolution, and genetics. Additionally, the site also contains a section of online quizzes and links to other science education resource websites of note.

+ BIOLOGY EDUCATION ONLINE: INCLUDES LESSON PLANS:  
<http://www.bioedonline.org/>

+ BIOTECHNOLOGY INFORMATION DIRECTORY:  
<http://biotech.cato.com/>

+ BIOPORTAL [pdf] <http://www.bioportal.gc.ca/>  
A clearinghouse of information both about biotechnology in general and about the various governmental strategies they have adopted in order to encourage development in this area. The materials on the site are divided into five sections: "BioGateway", "BioBasics", "BioStrategy", "BioRegulations", and "BioGov".

+ CHEMISTRY: FREE RESOURCES FOR TEACHING CHEMISTRY:  
<http://www.freetech4teachers.com/2009/03/open-chemistry-free-content-for.html>

+CHEMISTRY: THE ROYAL SOCIETY OF CHEMISTRY BUILDS A VIRTUAL LIBRARY: <http://web.fumsi.com/go/article/share/2818>

+CHEMISTRY WORLD  
<http://www.rsc.org/chemistryworld/CWLatestNews.xml>

+COMPUTATIONAL BIOLOGY - BIOINFORMATICS BLOGS  
<http://wiki.nodalpoint.org/blogs>

+ **ECOLOGY**: Teaching Issues and Experiments in Ecology [pdf]  
<http://tiee.ecoed.net/index.html>

Teaching Issues and Experiments in Ecology (TIEE) is a "peer-reviewed webbased collection of ecological educational materials." TIEE relies on high-quality submissions from college educators across the United States and Canada. The materials here are divided into several sections, including "Research", "Issues to Teach Ecology", and "Experiments to Teach Ecology".

These sections feature full-length articles like "Insect Predation Game: Evolving Prey Defenses and Predator Responses" and "The Ecology of Disturbance". The site is rounded out by a superb "Teaching" area. Here one can read essays on guiding class discussion and other related topics.

+ ENGINEERING: THE WORLD WIDE WEB VIRTUAL LIBRARY FOR ENGINEERING: <http://vlib.org/Engineering>

+ GLOBAL BIOMEDICAL RESEARCH COMMUNITY: BioWizard:  
<http://www.biowizard.com/> A free subject portal with many interesting features, including select free full text articles in subject areas encompassed by the Biomedical Sciences.

+ METEOROLOGY EDUCATION:  
<http://www.meted.ucar.edu/>

+SCIENCE PODCAST COLLECTION:  
[http://www.openculture.com/2007/02/science\\_podcast-2.html](http://www.openculture.com/2007/02/science_podcast-2.html)

## **IX. ACCESS TO THESIS AND DISSERTATION RESEARCH:**

+Access to the complete, full text of Scientific and Engineering Dissertations may be found in two sites:

+**MIT: Massachusetts Institute of Technology:** Over 20,000 theses and dissertations are included: <http://dspace.mit.edu>

+ University of Maryland: <http://www.lib.umd.edu/drum>  
(Includes the School of Engineering:  
<http://www.lib.umd.edu/drum/handle/1903/1654>

## **X. OTHER RESOURCES:**

+BEST SCIENCE SITES FOR KIDS:

[http://onlinenursepractitionerschools.com/?page\\_id=41](http://onlinenursepractitionerschools.com/?page_id=41)

+ SCIENCE CAREERS

<http://sciencecareers.sciencemag.org/>

Let's say you're looking for a job in biotechnology someplace south of Monterey, but north of Santa Barbara. The Science Careers website can help, and it also features high-quality commentary on the state of the science workplace environment. The site is dedicated to "furthering careers in science and technology" and the heart and soul of this site is the science job database..

+ SCIENCE BOOKS ONLINE (FREE): <http://sciencebooksonline.info/>

### **Science Books Online**

[Science Books Online](http://sciencebooksonline.info/) is a directory of **free** ebooks for all areas of science. The books range from small PDF pamphlets to full-length texts made available in electronic form for free. Most of the materials have to be downloaded in order to be viewed but there are some materials that you can view directly within your browser.

+ NEW SCIENCE TRACER BULLET FROM LC: E-SCIENCE

<http://digbig.com/4yhap>

+SCIENCE PODCAST COLLECTION:

[http://www.openculture.com/2007/02/science\\_podcast-2.html](http://www.openculture.com/2007/02/science_podcast-2.html)

- + SCIENCE TRACER BULLETS FROM THE LIBRARY OF CONGRESS:  
COMPLETE LIST: <http://www.loc.gov/rr/scitech/tracer-bullets/tbs.html>
  
- + SCIENCE INTERNET RESOURCES FROM THE LIBRARY OF CONGRESS:  
SELECT LIST: <http://www.loc.gov/rr/scitech/resources.html>
  
- + SCIENCE REFERENCE GUIDES FROM THE LIBRARY OF CONGRESS:  
COMPLETE LIST: <http://www.loc.gov/rr/scitech/sci-ref-guides.html>
  
- + SCIENCE TECHNOLOGY GUIDES FROM THE LIBRARY OF CONGRESS:  
<http://www.loc.gov/rr/scitech/>
  
- + LIBRARY OF CONGRESS: A to Z index of Science Reference Sites:  
<http://www.loc.gov/rr/scitech/azindex.html>
  
- + NANOTECHNOLOGY: A POLICY PRIMER. CRS report, May 20, 2008  
<http://fpc.state.gov/documents/organization/106154.pdf>
  
- + NANOTECHNOLOGY AND U.S. COMPETITIVENESS: ISSUES AND OPTIONS.  
CRS report, May 15, 2008  
<http://fpc.state.gov/documents/organization/106153.pdf>
  
- + **NEW** COMPLETE WORKS OF **CHARLES DARWIN** ONLINE:  
<http://darwin-online.org.uk/>
  
- + SCIENCE FAIR PROJECTS: A BIBLIOGRAPHY FROM THE LIBRARY OF  
CONGRESS: <http://www.loc.gov/rr/scitech/tracer-bullets/scifairtb.html>
  
- + THE PRESIDENT'S OFFICE OF SCIENCE AND TECHNOLOGY POLICY:  
ISSUES FOR CONGRESS. CONGRESSIONAL RESEARCH SERVICE, February  
6, 2009 <http://fpc.state.gov/documents/organization/120584.pdf>
  
- + SCIENCE AND TECHNOLOGY POLICYMAKING: A PRIMER. CONGRESSIONAL  
RESEARCH SERVICE, updated May 27 2009  
<http://fpc.state.gov/documents/organization/125966.pdf>
  
- + SCIENCE, TECHNOLOGY, AND AMERICAN DIPLOMACY: BACKGROUND AND  
ISSUES FOR CONGRESS. CONGRESSIONAL RESEARCH SERVICE REPORT,  
updated February 3, 2009  
<http://fpc.state.gov/documents/organization/120579.pdf>
  
- + THE INTERNET AS A RESOURCE FOR NEWS AND INFORMATION ABOUT  
SCIENCE: PEW INTERNET AND AMERICAN LIFE PROJECT:

[http://www.pewinternet.org/ppf/r/191/report\\_display.asp](http://www.pewinternet.org/ppf/r/191/report_display.asp)

+ KNIGHT SCIENCE JOURNALISM TRACKER: HOW JOURNALISTS COVER SCIENTIFIC DEVELOPMENTS: <http://ksjtracker.mit.edu/>

+ UCSB SCIENCE LINE: ASK A QUESTION AND GET ANSWERS: <http://www.scienceline.ucsb.edu/index.html>

+ LIST OF SCIENTIFIC TOPICS COVERED IN THE PAST AT: <http://www.scienceline.ucsb.edu/search/DB/search.php>

+ SCIENCE 2.0: GREAT NEW TOOL, OR GREAT RISK? Scientific American: **Wikis, blogs and other collaborative web technologies could usher in a new era of science.** By M. Mitchell Waldrop: "The explosively growing World Wide Web has rapidly transformed retailing, publishing, personal communication and much more. Innovations such as ecommerce, blogging, downloading and open-source software have forced old-line institutions to adopt whole new ways of thinking, working and doing business. Science could be next. A small but growing number of researchers--and not just the younger ones—have begun to carry out their work via the wide-open blogs, wikis and social networks of Web 2.0. And although their efforts are still too scattered to be called a movement--yet—their experiences to date suggest that this kind of Web-based "Science 2.0" is not only more collegial than the traditional variety, but considerably more productive."

SITE AT: <http://www.sciam.com/article.cfm?id=science-2-point-0-great-new-tool-or-greatrisk&print=true>

+ SCIENCE AND TECHNOLOGY POLICYMAKING: A PRIMER. CRS report, updated April 22, 2008 <http://www.fas.org/sgp/crs/misc/RL34454.pdf>

+ ENHANCED CAPACITY FOR WHITE HOUSE SCIENCE AND TECHNOLOGY POLICYMAKING: RECOMMENDATIONS FOR THE NEXT PRESIDENT.

<http://wilsoncenter.org/news/docs/OSTP%20Paper1.pdf>

From the Woodrow Wilson International Center for Scholars, June 2008 (29 pages)

+ SCIENCE, TECHNOLOGY, AND FOREIGN POLICY: BACKGROUND AND ISSUES FOR CONGRESS. CRS report

<http://www.fas.org/sgp/crs/misc/RL34503.pdf>

+ SUMMARY OF MAJOR ORGANIZATIONS' REPORTS AND RECOMMENDATIONS ON NATIONAL SCIENCE, TECHNOLOGY AND INNOVATION POLICIES AND INVESTMENTS, 2006-2008. BY DEBORAH D. STINE. NATIONAL CENTER FOR THE STUDY OF THE PRESIDENCY AND

CONGRESS, JANUARY 2009 (96 PAGES)

[http://www.thepresidency.org/pubs/Issue\\_Paper\\_14\\_Stine.pdf](http://www.thepresidency.org/pubs/Issue_Paper_14_Stine.pdf)

+ U.S. CIVILIAN SPACE POLICY PRIORITIES: REFLECTIONS 50 YEARS AFTER SPUTNIK. CRS report, updated February 2, 2009

<http://fpc.state.gov/documents/organization/120577.pdf>

## **SCIENCE BLOGS:**

### + **U.S. Government Science and Technology Blogs**

[http://www.usa.gov/Topics/Reference\\_Shelf/News/Blog/science.shtml](http://www.usa.gov/Topics/Reference_Shelf/News/Blog/science.shtml)

+ **Bad Astronomy**: Bad Astronomy is a popular blog written by Phil Plait, a former worker on the Hubble Space Telescope, an astronomer, author and lecturer.

+ **Cosmic Ray**: Ray Villard is the news director for the Hubble Space Telescope and blogs for the Discovery Channel.

+ **Prometheus**: This blog comes from the University of Colorado at Boulder and covers science policy news.

+ **Science and Reason**: Charles Daney simply calls himself a science writer, but his blog covers everything from DNA to cancer to cosmology.

+ **Science Base**: David Bradley is a former technical editor at the Royal Society of Chemistry, has written for the New Scientist, The Economist, American Chemical Society journal and more.

+ **Science Planet**: Science Planet offers profiles of some of the leading scientists from around the world. Along the way we'll cover the latest findings in the scientific literature and the policy decisions that influence how science is practiced. No jargon, just discovery. We'll clear up misconceptions and answer your questions about the science, and scientists, behind the breakthroughs. <http://blogs.america.gov/science/>

+ **Wired Science**: Wired Science is Wired.com's science blog and was nominated for a 2009 Webby Award.

+ **Greg Laden's Blog**: Greg Laden's evolution and life science blog appears on ScienceBlogs.com. Laden has two Masters degrees and a PhD in Archeology and Biological Anthropology from Harvard.

- + **[Inside NGC Blog](#)**: The team at National Geographic interviews scientists, documents travels around the world, and more.
- + **[60-Second Science](#)**: This blog appears on the Scientific American website and is maintained by a team of editors who have worked at U.S. News and World Report, Newsweek, The Nation, and more.
- + **[Neurologica](#)**: Neurologica is written by Dr. Steven Novella, an academic clinical neurologist at Yale University School of Medicine, and the president and co-founder of the New England Skeptical Society.

### **SCIENCE LESSON PLANS:**

- +BioSciEdNet: <http://www.bioscienednet.org/portal/>  
A DIGITAL LIBRARY PORTAL FOR TEACHING AND LEARNING IN THE BIOLOGICAL and MEDICAL SCIENCES  
This impressive portal (referred to in the shorthand as "BEN"), was created by the National Science Digital Library (NSDL) in order to bring high-quality educational resources to science educators everywhere. The entire project is managed by the American Association for the Advancement of Science (AAAS), and the resources here total over 14,000, and they cover 77 discrete biological sciences topics. First-time visitors to the site will note that will they are not required to register to access these resources, however they may wish to do so in order to maintain a thorough list of the resources they find most useful here. The homepage is simple and to the point, and it features a "New Resources" area, and a collection of browsing options that allow users to pick out resources by type, audience, or subject. Persons who haven't used BEN before may wish to look at the "Using BEN" area for a bit of guidance
- + **[Awesome Science Visualizations Videos](#)**  
The [Best Science Visualization Videos of 2009](#) is a collection of videos depicting visualizations of some really interesting science concepts. One of the videos that I found particularly interesting was a "breaking waves" simulation. **Applications for Education** The [videos in this collection](#) demonstrate concepts in biology, physics, and chemistry.
- +Expert Voices Gateway: <http://expertvoices.nsdl.org/>  
Expert Voices is a "science teaching information exchange" sponsored by theNational Science Digital Library (NSDL). The topics covered are

science, technology, engineering, and mathematics, and it's geared towards teachers of all levels, as well as students. The blogs are divided up into three sections: "Recent Posts", "Who Says", and "Hot Topics". "Recent Posts" are, as they sound, the most recent entries added to blogs, with a description of the entry, as well as the blog to which it was posted. "Who Says" lists the names of active blogs, sorted by audience level including "K12 Teachers", "University Faculty", "Librarians", "NSDL Community", and "Informal Learners". Some of the blogs fall into more than one of the aforementioned audience categories. Helpfully, there a "Larger Text" option is provided on the top of the far right hand side of every page.

+ World Academy of Science, Engineering and Technology [pdf] <http://www.waset.org/> With academic partners located within universities from Tehran to Lamar, Texas, the World Academy of Science, Engineering and Technology (WASET) sponsors a journal and numerous conferences. On their homepage, visitors can look through six primary sections, including "Notices", "Events", "Programs", "Journals", and "FAQs". Scholars and others with a similar bent will want to take a close look at the "Journals" section. All told, the WASET publishes journals that range across the social, natural, and physical sciences, and visitors have access to various issues here. In the "Partners" area, visitors can learn about WASET's member institutions. Moving on, the "Indexes" area features an annotated selection of links to other relevant abstracting sources, like Creative Commons and the Electronic Journals Library.

+ BEST WEB SITES FOR SPACE AND ASTRONOMY FANS:

<http://www.makeuseof.com/tag/5-best-websites-for-space-and-astronomy-fans/>

+ PLANET SCIENCE: GAMES AND LESSON PLANS:

<http://www.freetech4teachers.com/2009/05/planet-science-science-games-and-lesson.html>

+ FREE SCIENCE E-BOOKS:

FREE SCIENCE BOOKS ONLINE: <http://sciencebooksonline.info/>

Science Books Online is a directory of free ebooks for all areas of science. The books range from small PDF pamphlets to full-length texts made available in electronic form for free. Most of the materials have to

be downloaded in order to be viewed but there are some materials that you can view directly within your browser.



+ [Science Netlinks](#). Science Netlinks offers dozens of lesson plans and online learning activities. The lessons and activities are cover a wide variety of science topics. All of the lesson plans are sorted by grade level, but you can also sort the lesson plans by science benchmark standards. A series of icons also indicates if each lesson plan has a printable worksheet, e-worksheet, or is an interactive experience. **Applications for Education** Science Netlinks provides science teachers with a good collection of lesson plans aligned to the benchmarks for Science Literacy. In addition to lesson plans, Science Netlinks offers a selection of [reviewed resource websites](#) for K-12 science teachers.

+ SCIENCE PROJECTS AND POSTERS FOR ELEMENTARY SCHOOLS:

<http://www.freetech4teachers.com/2008/11/science-projects-and-posters-for.html>

+ Valuable Collection of Science Lesson Plans:

<http://ehrweb03.aaas.org/portal/search/browse.php?step=2&nav=main&by=resourceType&filter=&value=Lesson+plan&freeResourcesOnly=no>

(From the Digital Library Portal for Teaching and Learning in the Biological and Medical Sciences)

+ American Museum of Natural History: Science:

<http://www.amnh.org/science/?src=toolbar>

The website of the Science department at the American Museum of Natural History in New York has some great interactive features, including a video, entitled "Scientific Expeditions 2008". Visitors should click on "See the Video", which is located front and center on the Science homepage. To "download the transcript" click the link above the video. Also, the video is captioned for those who are hearing impaired. The section entitled Science at the Museum: Exploration and Discovery gives a good overview of the Science department at the museum, and the changes it has made over time.

The department consists of the following sections, accessible by clicking on the menu on the right hand side of the page: "Anthropology", "Invertebrate Zoology", "Vertebrate Zoology", "Paleontology", and "Physical Sciences". Those persons interested in hearing talks at the museum, will want to click on "AMNH Podcasts", on the right hand side of the page, below the menu. The latest podcast, from May 2009, features author Michael Pollan. There are a number of ways to subscribe to the podcasts, including RSS and iTunes.

Compiled by Stephen Perry, ,  
Thoroughly updated OCTOBER 29, 2009

OTHER RESOURCES AVAILABLE AT:

<http://tinyurl.com/6dfaxn>

Comments/Additions/Corrections to [perrystephen@fastmail.fm](mailto:perrystephen@fastmail.fm)