

AMSER Spotlight: Bio-Link

In addition to collecting individual web resources, AMSER often partners with existing digital collections to bring their excellent materials to AMSER users. One of these AMSER partners is Bio-Link, a National Advanced Technological Education (ATE) Center for Biotechnology, created to "improve and expand educational programs that prepare skilled technicians to work in the high-tech fields that drive the U.S. economy." The Bio-Link National Center is located at City College of San Francisco and regional Bio-Link Centers can be found across the country in Seattle, WA, San Diego, CA, San Francisco, CA, Austin, TX, Madison, WI, Graham, NC, and Portsmouth, NH. These regional centers "develop relations with local industry and educational institutions including community colleges, baccalaureate institutions, and high schools."



Bio-Link goals include enhancing and expanding biotechnology education programs by "providing cutting edge professional development for instructors, by improving curriculum, by making use of technologies and by creating a system that promotes the sharing of information." Bio-Link also enriches biotechnology education programs by expanding professional development for both students and instructors. Their resources include: advice on course curricula, descriptions of new technologies pertinent to the



industry at large, and a network of industrial and educational centers that is searchable by region. On their website, both students and teachers will find "discussion forums on biotechnology and related issues, descriptions of job scenarios, and a plethora of multi-media teaching resources for small laboratory and lecture classes alike."

Included in their collection is a clearinghouse of curriculum resource materials and AMSER has partnered with Bio-Link to integrate these high quality materials into AMSER's own library. Some examples from this impressive collection include:

Introduction to Biotechnology: Laboratory Manual [doc]

<http://bio-link.org/GMP/LabBook.doc>

By Linnea Fletcher, Evelyn Goss, Patricia Phelps, and Angela Wheeler, this is the laboratory manual for an introductory biotechnology course. This 134-page Word document describes the basic skills necessary for the biotechnology laboratory, such as safety, mathematics, documentation, calibration, and equipment. Each chapter contains objectives for students to accomplish, some practice lessons and questions, and laboratory activities. Students

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will also learn some basic processes, such as Restriction Enzyme Mapping of DNA, DNA Fingerprinting, and Southern Blot Analysis. There is also a section on bioinformatics.

Detection of Genetically Modified Food

<http://www.bio-link.org/GMP/DetectionGMFcover.htm>

Genetically modified foods are often in the news and widely grown in the United States. Three US government agencies (USDA, FDA, and EPA) work to regulate the introduction and production of genetically modified foods. These crops can provide agricultural, ecological and nutritional benefits, but there are also potential risks to the environment and consumers. As consumers and public interest groups around the world have

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become aware of these risks, there has been a call for more explicit product labeling and reliable methods for the detection of genetic modification in the foods we eat. This lab activity explores these issues by taking students through a three-part process to detect the presence of genetic modification in corn (maize) or soy food products. This lab uses PCR analysis, one of the two methods for detection of genetic modification currently approved by the European Union. For convenience, the resource is divided into 5 sections, all pdf files, including background, wet lab, paper lab, assessment and further reading.

Users can find all of the Bio-Link resources within the AMSER collection by clicking on the Advanced Search option, found at the top of any page on AMSER. Once on the Advanced Search page, click on "Show Limits" and select "Bio-Link" from within the Source field to see all of the available resources in AMSER. Many AMSER users study or teach in subjects where these resources could be readily utilized and the AMSER staff expects that the Bio-Link resources will prove useful in a full range of educational settings – from laboratories to libraries to the classroom.

You can find Bio-Link at:
<http://www.bio-link.org/>

New from AMSER: Science Reader Montly



AMSER is pleased to announce the monthly publication of the AMSER Science Reader Monthly (AMSER SRM). The AMSER SRM provides STEM educators with a useful online collection of information about a particular topic related to applied math and science, by combining freely available articles from popular periodicals with curriculum, learning objects, and web sites from AMSER. Like all the resources and tools within AMSER, the AMSER Science Reader Monthly is free to use and although it is designed for faculty and staff at community and technical colleges, the Science Reader Monthly can be used in a variety of educational settings. The SRM is being created in collaboration with the NSDL Resource Center and is freely available on the AMSER site.

This month's AMSER Science Reader Monthly discusses the topic of Carbon Trading. Using Jennifer Barone's article from Discover Magazine the AMSER SRM discusses the basic concepts and issues surrounding carbon trading including: the Kyoto Protocol, U.S. Clean Air Act, emissions testing, and economic ramifications. After a brief introduction to the topic and article,

the AMSER SRM then provides links to several resources from within the AMSER collection that will supplement the information found in the article. Some of these resources include a carbon dioxide calculator, a guide to business and sustainable development, and the European Union's climate change initiative.

Upcoming topics covered in the AMSER SRM will include Climate Change, Environmental Sciences, Nanotechnology, Biotechnology, Engineering, Manufacturing, Applied Math, Astronomy and Space Sciences, Chemistry, Agriculture, Computer Science and Technology, Physics, and Geology.

Please contact us if you have ideas for useful content for the AMSER SRM, either recent online articles from popular journals or groups of resources that you think would work well when joined to an appropriate article. Suggestions for future issues of the AMSER SRM are encouraged, as well as any comments or concerns, and should be sent to info@amser.org.

We hope that you enjoy this new resource from the AMSER staff. The AMSER Science Reader Monthly can currently be found at: <http://amser.org/AMSER--ScienceReader.php>.

Do you know of a great collection of resources that you'd like to see integrated into AMSER? Do you have a learning object that helps students truly understand a specific concept? If so, e-mail us at resources@amser.org, or follow the link at the bottom of the AMSER home page to submit a resource suggestion.

Don't forget to become a fan of AMSER on Facebook - we can be found by searching for The Applied Math and Science Education Repository - or check out our tweets on Twitter at AmserDotOrg. We'll keep you connected with updates on AMSER resources, AMSER events, and all things new in AMSER.

Focus on AMSER Resources: Staff Picks

AMSER staff members spend quite a bit of time scouring the Internet for great resources to include in the AMSER portal. Sometimes we are looking for a specific subject suggested to us by an AMSER user and sometimes we just happen upon something great. Here are some of our favorite and most recent finds.

BioSciEdNet

<http://www.bioscienet.org/portal>

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 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.

<http://amser.org>

Sixty Symbols

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

Have you ever wondered about the symbols used by scientists? You’re probably not alone, and this website created by a team at the University of Nottingham demystifies sixty prominent physics symbols via informative video segments. The videos are not meant to be lessons or lectures on the symbols, rather “The films are just fun chats with men and women who live their subject and know a lot about it!” The videos are quite fun, and all of the videos can be accessed via the homepage, and visitors should plan on making several visits to check out all of the clips. At the bottom of the homepage, visitors can view earlier videos created as part of the project, learn more about their scientists, and take a look at a list of other related sites.

Nature Milestones

<http://www.nature.com/milestones/index.html>

What were the most important advances in cutaneous biology of the past 100 years? The Nature Milestones website provides detailed answers to that question, along with similar responses regarding light microscopy, cancer, and gene expression. All told there are ten special features on the site, and each feature includes an interactive timeline, scientific commentaries, and a selection of articles from Nature magazine and other peer-reviewed publications. Each feature also includes a list of academic advisors, sponsors, and links to external resources. Visitors may wish to use these resources in the classroom setting, as they provide basic and advanced materials that can be used by a number of introductory courses.

Expert Voices Gateway

<http://expertvoices.nsd.org/>



Expert Voices is a “science teaching information exchange” sponsored by the National 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.

The Mathematical Association of America: Podcast Center

<http://www.maa.org/audio%20clips/podcast/podcast.html>

The Mathematical Association of America (MAA) has done an excellent service by placing this collection of podcasts online. This diverse set of podcasts consists of talks and presentations given at MAA-sponsored events, and visitors are welcome to use them in the classroom or for their own

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Focus on AMSER Resources

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personal edification. The podcasts here extend back to the Spring of 2007, and the presentations include “Why Do Golf Balls have Dimples?” and “The Joy of Solving Equations”. The speakers include experts from Brandeis University, the University of Montreal, and Macalester College. It’s also worth noting that for many of the lectures, an accompanying article is also available for consultation.

The Literature of Prescription: Charlotte Perkins Gilman and “The Yellow Wall-Paper”

<http://www.nlm.nih.gov/exhibition/literatureofprescription/>

Those unfamiliar with the short story, “The Yellow Wall-Paper”, by Charlotte Perkins Gilman, are fortunate that this National Library of Medicine website provides a PDF of the story in its original form. At the bottom of the homepage, visitors can click on the image underneath the heading Digital Documents, to read the 12 page story. The story shed light on the treatment of women by the medical establishment, especially in regard to mental health. The “Education” tab at the top of the page, offers high school lesson plans and a higher education module, for use with the exhibition. The high school lesson plans are for an English class and a Health Education class. The higher education module takes a look at “The Troubled Mind in Medicine and Society”.

Would you like to be featured in a future AMSER Quarterly? We'd love to hear from you and learn about your favorite AMSER resources and how you've been using them in an educational setting. Please e-mail us at amser@amser.org for details.

Calendar of AMSER Events

Where in the world is AMSER?

We'll be at various conferences and meetings this year and we'd love to talk to you about what you're doing with digital resources and how we can make AMSER more useful to you and your students. Here's where we'll be and when:

November

American Mathematical Association for Two-Year Colleges (AMATYC) Annual Conference

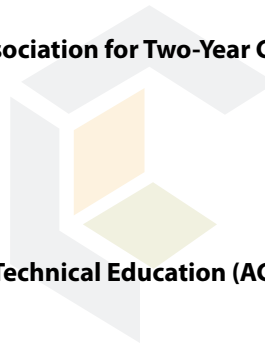
November 12-15, 2009
Las Vegas, Nevada

NSDL Annual Meeting

November 17-19, 2009
Washington, DC

Association for Career and Technical Education (ACTE)

November 19-21, 2009
Nashville, Tennessee



For more AMSER events and links go to <http://www.amser.org/events>

Contact Information

Have a question? Want to share information about how you're using AMSER or other digital materials in your classroom? Please contact us!

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