AMSER QUARTERLY
NEWSLETTER OF THE APPLIED MATH AND SCIENCE EDUCATION REPOSITORY

Spring 2011

Visit http://amser.org

AMSER Spotlight: VESTA

AMSER frequently teams up with other digital collections so that we can bring the excellent materials from these collections directly to AMSER users. In each issue of our Quarterly we highlight one of these collections, and in this issue we are highlighting the Viticulture and Enology Science and Technology Alliance (VESTA). The goal of VESTA is to "establish programs of study in viticulture and enology through collaborations with educational institutions, government, and industry. A unique partnership of universities and community colleges across the nation provide students access to course work that is delivered online thereby enabling learning to occur anytime, anywhere." Funded by the National Science Foundation, VESTA is currently a partnership between the Missouri State University system, two year schools throughout the U.S., state agriculture agencies, as well as many vineyards and wineries throughout the country. In addition to online curriculum, VESTA also provides students with opportunities to participate in hands-on field experiences through partnerships with vineyards and wineries, which gives students valuable laboratory experience.

VESTA has put together a fantastic resource collection of online courses and AMSER is lucky enough to have them in our collection. The courses

cover everything from Wines of the World, Introduction to Enology, and Midwest Vineyard Management. AMSER is pleased to have partnered with VESTA and believes AMSER users will find this addition exceptionally useful. Some examples from this impressive collection include:

VESTA Viticulture and Enology Student Profiles

http://www.vesta-usa.org/main/index.php/prospective-students/student-profiles

These vignettes, from the Viticulture and Enology Science and Technology Alliance, showcase students' experiences as they learn the science and skills required for the grape and wine industry and begin their careers in this exciting and exploding field. Students from Iowa, Missouri, Illinois, and Oklahoma are represented. Each experience is documented on a one- or two-page PDF.

VESTA Viticulture Course: Winery Sanitation Workshop Spring 2011

http://www.amser.org/index.php?P=GoTo&ID=17530&MF=4

This site, from the Viticulture and Enology Science and Technology Alliance, offers presentations and slides from the lectures from the Winery

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Sanitation Workshop that took place in the spring of 2011. The lectures include information on barrel technology and care, the causes of aromas and flavors in wine, wine fermentation tanks and winery cleaning equipment and ozone. Each topic includes a multimedia presentation of the lecture, with slides. Users must have Microsoft's Silverlight installed to view the presentations, which vary in length from about 46 minutes to over an hour.

Enology – Grape Chemistry at Virginia Tech

http://www.vtwines.info/

The Wine / Enology - Grape Chemistry Group at Virginia Tech "exists to support the growth and development of the wine industry" through "teaching, extension and research." On their site, visitors will find a number

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of helpful resources to help them as they create, plan, or improve their own enology degree or certification programs. To the left, there are a number of links to teaching materials, including Enology Notes with a subject index that covers everything from corks to yield, online publications useful to both wine professionals and students, and further information about the Virginia Tech program itself.

VESTA Viticulture Course: Introduction to Enology

http://amser.org/index.php?P=AMSER--ResourceFrame&resourceId=15645

This site, from the Viticulture and Enology Science and Technology Alliance, offers presentations and slides from the lectures of VIN 146: Introduction to Enology. From the presenter, Domenic Carisetti, the lectures cover such topics as general winemaking, blending and aging, bottling, and fermentation. Each topic includes a multimedia presentation of the lecture, with slides. Users must have Microsoft's Silverlight installed to view the presentations, which vary in length from about 7 minutes to 15 minutes.

Find the Viticulture and Enology Science and Technology Alliance(VESTA) at: *http://www.vesta-usa.org/*

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.*

AMSER Featured Folder: Digestion

Within the AMSER Collection, the AMSER staff has created a series of Featured Folders. These Featured Folders are sets of resources aimed at illustrating a given topic by combining six to eight resources on a related topic in a single shared folder. The individual resources in each folder were selected from AMSER's extensive collection and were chosen because each resource helps to demonstrate various aspects of the specific folder's topic. For more details on how to use and find AMSER's Featured Folders, see the Summer 2008 issue of the *AMSER Quarterly* at *http://amser.org/ AQSummer08.pdf*.

In this issue of the *AMSER Quarterly*, we highlight our Featured Folder on Digestion, one of over 50 Featured Folders in AMSER. Digestion is a complex and miraculous process fundamental to our daily living. However, the complex nature of our digestive system can also contribute to a variety of disorders. This Featured Folder provides links to websites and resources that offer information, curriculum, and more – all pertaining to the digestive system and digestive disorders. Resources in this Featured Folder include:

Digestion and Enzymes: A Case-Based Biology Lesson Plan

http://cstl-csm.semo.edu/waterman/ll2001finalprojects/htm2001modules/As%20the%20Stomach%20Turns_files/frame.htm

In this activity, students will: (1) Label a diagram of the digestive system with major parts; (2) define digestion, both mechanical and chemical, and indicate where these types occur; (3)define operationally acid, base and indicator; (4) construct graph depicting the effects of pH on enzyme activity and comparison of amylases from different sources (pills vs. natural); (5) describe operationally how an enzyme works and why it is needed in the digestive process; (6) locate and identify the components of digestive enzymes commonly sold; (7) identify enzymes by looking at names of ingredients (-ase rule); (8)compare the structure of the same enzyme from different sources using computer modeling programs; and (9)identify sources as either objective or biased and provide a rationale for the decision. Requires Internet Explorer.

Gastroenterology

http://ocw.mit.edu/courses/health-sciences-and-technology/hst-121-gastroenterology-fall-2005/

This MIT OpenCourseWare Gastroenterology course was offered by the Health Sciences and Technology department in the fall of 2005, and contains downloadable lecture notes, lab assignments, and exam reviews, as well as a 14-page downloadable Recommended Reading Material list.

Visit *http://amser.org/amser/topicindepthdigestion* to see all the resources from this Featured Folder, or visit *http://amser.org/index.php?P=AMSER--FeaturedFolders* to see all the AMSER Featured Folders.

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.

AMSER User's Corner

AMSER staff members spend quite a bit of time scouring the Internet for high quality 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 finds.

Extreme Planet Makeover

http://planetquest.jpl.nasa.gov/planetMakeover/planetMakeover.html

You may have heard of those elaborate makeover television shows where some individual wishes to have various body enhancements performed or a new and incredible house is built in seven days. This fascinating extreme makeover website, from NASA and the Jet Propulsion Laboratory at the California Institute of Technology, is much more edifying than reality television. Here, visitors will have the opportunity to make their own planet via a series of customizable bells and whistles. Visitors can use the controls on the site to adjust key planetary attributes such as distance from a star, planet size, and planet age. After making these adjustments, visitors can learn about the planet they have created, and also compare it with other existing planets and outer-space bodies.

Physics for the 21st Century

http://www.learner.org/resources/series213.html

The Annenberg Media organization has created this wonderful new resource for physics teachers, students, and anyone else who would care to learn more about dark matter, string theory, and other "big topics in modern physics". Produced by the Harvard-Smithsonian Center for Astrophysics Science Media group along with the Harvard University Department of Physics, this 11-part course features 22 case studies of researchers from leading research labs and universities who are working on exciting new projects in their respective fields. The site includes program descriptions, along with direct links to the full episodes. The series website also contains transcripts of each program, along with teacher's guides, glossary, and several interactive features. All in all, this is a tremendous resource, and one that is worth sharing.

American Experience: Panama Canal

http://www.pbs.org/wgbh/americanexperience/films/panama/player/

The Panama Canal was quite an undertaking of labor and engineering, and by the time it was completed on August 15th, 1914 the project had been underway (in some form) for well over two decades. Along the way, over 55,000 workers had been involved, 5,000 people had died during the project's duration, and over 350 million dollars had been spent. This riveting documentary looks at the history of this project, and visitors can watch the entire program here. The extra features provided here are real treats, and they can be found on the left-hand side of the page. Here visitors will find an interactive map of the Panama Canal region, along with a timeline, and an interview with the program's producer, Amanda Pollak. Also, the site includes articles on yellow fever, the workers, and the chief engineers of the Canal. Primary resources such as part of the canal record of 1907, suggestions for further reading, and teacher resources round out the site.

Windows to the Universe: Myths, Stories and Art

http://www.windows2universe.org/mythology/myths_stories_art.html

The Windows to the Universe website was created by the National Earth Science Teachers Association (NESTA) and it is an exploration of all matters in "Earth and Space sciences and the historical and cultural ties between science, exploration, and the human experience. " The Culture section of their website is really quite a find as it allows visitors to browse their collection of myths, folk tales, and stories about the Earth and sky. The "Clouds in Art" link under the "Culture" tab, offers several fun activities related to clouds, including the "Clouds in Art Interactive". This interactive is a fun way to learn about cloud types while looking at famous artworks, for example Pissarro painted cumulus clouds in "La Route de Louveciennes", Monet painted altocumulus clouds in the "Beach at Sainte-Adresse", and John Constable painted Cumulonimbus in his dramatic "Seascape Study with Rain Cloud". Visitors who are interested in writing a poem about the featured weather image should go to the "Poetry and Pictures" link. The winning poem from May 2011 is by a 67-year-old English woman, who wrote about a painting of the Lackawanna Valley in 1850s Pennsylvania, which features stratus clouds and the staging area of a local railroad company. Finally, visitors

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Focus on AMSER Resources

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should be sure to check out the site's archive of other poems composed for this section of the site.

Genes, Health and Society

http://www.bioedonline.org/courses/

The BioEd Online initiative at the Baylor College of Medicine has distinguished itself over the past few years by offering up lesson plans, slide sets, presentations, and other classroom materials for biology teachers and the generally curious. One of the recent additions to the site is "Genes, Health and Society," an online course designed for undergraduate students, classroom educators, and other life-long learners. The course is divided into three sections: "Transmission Genetics," "The Nature of Genetic Material," and "Medical Genetics." Each section offers a variety of active learning experiences, including self-assessment questions and problems. Visitors are welcome to take one or two of the sections, and all they need to do is complete a free registration for access to all materials.

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:

May

NISOD Annual Conference
May 29-June 1, 2011
Austin, Texas

July

HI-TEC Conference
July 25-28, 2011
San Francisco, California

August

Annual Conference on Distance Teaching and Learning
August 2-5, 2011
Madison, Wisconsin

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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