RECOMMENDED SCIENCE AND SOCIETY EDUCATIONAL RESOURCES

1. ***Your World: Biotechnology & You***, the Biotechnology Institute, <http://www.biotechinstitute.org/resources/your_world_magazine.html>.

This biotechnology magazine for students in grades 7-12, is published twice a year as a curriculum supplement for teachers who want to bring biotechnology to life in the classroom. The current issue focuses on biotech-derived animals, plants, and microbes. Each issue of the full-color magazine combines balanced, in-depth information on a single biotechnology topic by looking at the science of biotechnology and its practical applications in health care, agriculture, the environment, and industry. Issues also come with an online teacher's guide that links to the National Science Education Standards and provides tips on how to use the magazine and additional labs and exercises. ***Your World*** is one of several initiatives of the Biotechnology Institute that support its mission to engage and excite teachers and students about the promise and challenges of biotechnology. The Biotechnology Institute is an independent, national nonprofit organization dedicated to education about the present and future impact of biotechnology. For more information, visit (from the 29 June 2006 issue of the ***Triangle Coalition Electronic Bulletin***, with permission).

2. George Wolfe, Michael Occhino, Sean Garner, and Ethan Minot, "Atomic Force Microscopy," Center for Nanoscale Systems Institute for Physics Teachers, Cornell University, available at <http://www.cns.cornell.edu/cipt/>.

In this activity designed for two to three 40-minute class periods, students use a simulated topographic scanner with a platform mounted laser probe to attempt to discern the structure of an unknown block of Legos built by another team, then apply this experience to develop an understanding of the atomic force microscope.

3. Mary Kent and Sandra Yin, "Controlling Infectious Diseases," Population Reference Bureau, available as an on-line purchase or downloadable 24-page PDF from <http://www.prb.org>.

This booklet identifies high-risk groups, geographic disparities, and the impact of infectious diseases on global health. Special sections on diarrheal diseases, malaria, and tuberculosis examine the scope of the problem, populations most at risk, proven preventions, and recommended treatments. Also available at this website are many articles about various population-related topics.

4. Rowena Douglas, Michael P. Klentschy, and Karen Worth (eds.), with Wendy Binder, ***Linking Science & Literacy in the K-8 Classroom*** (NSTA, Arlington, 2006). ISBN 1-933531-01-0. $31.95. xv + 500 pp.

This book is based on two NSF-funded conferences at NSTA conventions based on the assumption "that the link between science and literacy is an authentic characteristic of science and that appropriate use of literacy in science is needed to achieve deeper understanding of science and the ability to reason scientifically." It consists of 16 chapters and nine case stories divided among sections headed "Linking Science and Literacy in the Classroom," "Science and Oral Discourse," "Science and Writing," "Science and Reading," "Science, Literacy, and Culture," and "Implementation and Policy Issues."

5. Charles H. Holbrow, "Scientists, security, and lessons from the cold war," *Phys. Today*, **59**(7), 39-44 (July 2006).

One important way in which scientific input was brought to bear on security issues brought about by the Cold War was "Summer Studies" of the 1950s. This article surveys the contributions of these studies and their effectiveness. Highlighted in particular is MIT physicist Jerrold Zacharias' list of ingredients for an effective Summer Study: 1) "Focus on a large problem"; 2) "Look at the problem broadly"; 3) "Involve the best people from a variety of disciplines"; and 4) "Bring them together for a long enough time to become well acquainted with each other and master the problem."

6. Terry L. Hunt, "Rethinking the Fall of Easter Island," *Am. Sci.*, **94**(5), 412-419 (Sep-Oct 2006).

A revised database of radiocarbon dating and evidence for the impact of rats on deforestation have led an anthropologist at the University of Hawaii to revise the chronology of events on Easter Island. For more details see "Clearinghouse Update" in this issue.

7. Project 2061, *Evolution on the Front Line*, available online at <www.project2061.org/evolutionguide>.

This guide was prepared for a special event for St. Louis-area teachers at the 2006 AAAS Meeting in that city. According to *2061 today*, this "'Evolution on the Front Line' event brought together several hundred teachers, scientists, students, and others to discuss the challenges confronting science teachers and the resources that teachers can tap as they seek to preserve scientific integrity in the classroom."

8. Martin Rees, "The G8 on Energy: Too Little," *Science*, **313**, 591 (4 Aug 06).

The President of the Royal Society of London is worried that "investments in major energy R&D program areas dropped by 53% between 1990 and 2003" at a time that expects global energy demand to increase by more than 50% in the next 25 years. Meeting this energy demand with a fuel mix that will still be 80% fossil fuels by 2030 will increase carbon dioxide emissions

then by 52% over those in 2003. Rees wonders whether G8 leaders next year will announce an initiative to deal with this next year.

9. Elizabeth Royte, "Corn Plastic to the Rescue?" *Smithsonian*, **37**(5), 84-88 (Aug 2006).

Polylactic acid, a polymer made from corn that requires 65% less energy and emits 68% less greenhouse gas emissions than conventional plastic, would seem to be environmentally attractive, especially in an era of higher oil prices and dwindling oil supplies. But while it degrades to water and carbon dioxide in a "controlled composting environment" in less than 90 days, it will linger forever in a backyard compost pile and acts as a contaminant to polyethylene terephthallate in today's recycling stream. Earth Policy Institute President Lester Brown questions diverting corn to nonfood uses, given its heavy consumption of nitrogen fertilizer and biocides.

10. David L. Clark, David R. Hanecky, and Leonard J. Lane, "Science-based cleanup of Rocky Flats," *Physics Today*, **59**(9), 34-40 (Sep 2006).

Unlike many nuclear cleanup projects, this one finished before deadline and under budget. This article attributes it to good science, particularly that advocated by the Actinide Migration Evaluation advisory group. Among that science was determining the chemical state of plutonium in the soil, done by matching x-ray absorption spectra from samples with known spectra for different oxidation states of the 94th element.