

AIBS *news*

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Explore, Empower, and Engage! Science's Greatest Challenge

AIBS member organizations and other scientific groups are invited to participate in Year of Science 2009 and become part of the Coalition on the Public Understanding of Science, a nationwide effort to engage the American public in activities that will stimulate their interest in, and appreciation of, the process of science.

Progress in science has been so great that it is taken for granted, and even breeds a widespread complacency. The biggest challenge to the scientific enterprise today is not to achieve deeper understanding of genomes or ecosystems or black holes—that understanding is coming along just fine. The challenge that matters now is to make sure that science is taken seriously. Scientists need to convince people that we have developed honest procedures for understanding how the world works, that we can put confidence limits around most of our conclusions, and that our track record shows we have achieved reliable, if still incomplete, knowledge.

A general public with an understanding and appreciation of the nature of science is a prerequisite for a skilled workforce that can compete in a knowledge-based global economy, make informed decisions about relative risks such as medical treatments and other quality-of-life issues, and engage in public policy discussions involving science and technology.

Year of Science 2009 activities will include

- A national year-long celebration of science to engage the public in science and improve public understanding about the nature and processes of science.
- Integration of efforts with the Coalition on the Public Understanding of

Science (COPUS; www.copusproject.org), a grassroots effort linking universities, scientific societies, science advocacy groups, science media, science educators, businesses, and industry in a peer network having as its goal a greater public understanding of the nature of science and its value to society.

- Creation of a Year of Science 2009 Web site and resource center to coordinate and promote 2009 activities. The Web site will include suggested activities and kits, a searchable database of events, an interactive map of events, a blog, a press room, and links to content in the Understanding Science Web site currently under development at www.understandingscience.org.
- Opportunities to mark 2009 as the anniversary of seminal events in the history of science: the 200th anniversary of the birth of Charles Darwin and of Abraham Lincoln, founder of the National Academy of Sciences, and the 150th anniversary of the publication of Darwin's *On the Origin of Species*.
- Collaborations with communications experts on framing scientific communications to promote understanding by the general public and by particular public constituencies.
- Summary reports, other deliverables, and follow-up plans after the end of 2009; opportunities to continue collaborating on public understanding of science projects through the COPUS network.

Participating organizations in Year of Science 2009 will automatically become part of the COPUS network and will have access to the brands, logos, media coverage, other publicity materials and databases that are developed for this and related projects. They will be updated regularly on organizations' plans for this year-long celebration, and they will receive assistance in planning their own events to conform to the overall themes for 2009.

To learn more about Year of Science 2009 and how to participate, visit www.yearofscience2009.org.

Register Now, Submit Posters, for 2007 AIBS Annual Meeting

AIBS will mark its 60th anniversary at its 2007 annual meeting, to be held 14–15 May 2007 at the Capital Hilton Hotel in Washington, DC. The theme of the meeting is “Evolutionary Biology and Human Health,” and the program chair is 2007 AIBS president Douglas Futuyma, of the State University of New York at Stony Brook.

Plenary speakers and discussion groups will approach the meeting's topic from a variety of cross-cutting themes involving science, education, and public policy. Principles and methods of evolutionary biology are becoming increasingly important in many aspects of health science, among them understanding the human genome, the normal functions

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and malfunctions of human genes, and the origin and evolution of infectious diseases. These are among the topics addressed in sessions on infectious diseases; genes and genomics; and human adaptation and malfunction. The rest of the meeting's program will be rounded out by events such as a contributed poster session, a diversity lunch, and AIBS awards.

Speakers include Eric Green, National Human Genome Research Institute, National Institutes of Health; Edward Holmes, Center for Infectious Disease Dynamics, The Pennsylvania State University; Rustom Antia, Emory University; Carlos Bustamante, Cornell University; Douglas C. Wallace, Center for Molecular and Mitochondrial Medicine and Genetics, Biological Chemistry, University of California; Sarah Tishkoff, University of Maryland; Martin Nowak, Program for Evolutionary Dynamics, Harvard University; and Randolph Nesse, Evolution and Human Adaptation Program, University of Michigan.

The AIBS meeting will be held in conjunction with the annual meeting of the Natural Science Collections (NSC) Alliance. The AIBS and NSC Alliance meetings take place immediately after the International Union of Biological Sciences Conference and General Assembly, 9–12 May, also at the Capital Hilton.

Following the annual meeting, the AIBS Council of member societies and organizations will meet at the Capital Hilton, 15–16 May (contact: rogrady@aibs.org).

For information about the meeting program and registration, including poster submissions, please visit www.aibs.org/annual-meeting/annual_meeting_2007.html.

2007 AIBS Council Meeting to Be Held 15–16 May

The 2007 AIBS Council Meeting will be held 15 May (2 p.m.–5 p.m.) and 16 May (9 a.m.–12 p.m.) 2007 at the Capital Hilton Hotel, 1001 16th Street, NW, Washington, DC 20036. This meeting takes place immediately after the 2007 AIBS annual meeting, held in the same hotel (theme: “Evolutionary Biology

How to Contact Us

BioScience

Advertising:
jrasanen@aibs.org
703-379-2480, ext. 224

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www.aibs.org/bioscienceonline

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permissions@aibs.org

Publisher:
rogrady@aibs.org
202-628-1500

Submission Inquiries:
tbeardsley@aibs.org
202-628-1500

Subscriptions:
admin@aibs.org
703-790-1745

AIBS

ActionBioscience.org:
editor@actionbioscience.org

Education Office:
skatz@aibs.org
202-628-1500

Executive Director:
rogrady@aibs.org
202-628-1500

Meetings and Conference Services:
sburk@aibs.org
703-790-1745

Membership Records:
admin@aibs.org
703-790-1745

Membership Services and Benefits:
spotter@aibs.org
202-628-1500

Public Policy Office:
rgropp@aibs.org
202-628-1500

Science Office/NEON:
bwee@aibs.org
202-628-1500

Scientific Peer-Review Services:
sglisson@aibs.org
703-674-2500

Web/IT Services:
jwagener@aibs.org
703-674-2500



and Human Health”; see www.aibs.org/annual-meeting/annual_meeting_2007.html).

Contact: rogrady@aibs.org; URL: www.aibs.org/council-news/.

Public Policy Office Conducts Training Session at WSSA Annual Meeting

At the request of the Weed Science Society of America (WSSA), an AIBS member society, public policy associate Holly Menninger traveled to San Antonio, Texas, to participate in the WSSA annual meeting. Menninger presented “Techniques and Tips for Communicating Your Science to the Media” during a special symposium entitled “Employment Opportunities for Weed Scientists and How to Make Yourself More Marketable.” The session was sponsored by the WSSA’s graduate student section. Menninger discussed the benefits of participating in media outreach, strategies for engaging the media’s interest in scientific research, and helpful tips for crafting and communicating an effective message.

AIBS Public Policy Office staff members welcome the opportunity to provide these forms of special presentations at member society meetings, whenever resources allow. For more information, please contact Robert Gropp, AIBS director of public policy (telephone: 202-628-1500, ext. 250; e-mail: rgropp@aibs.org).

Debra Peters to Lead NEON Site Visits

Debra Peters, an ecologist with the USDA Agricultural Research Service, Jornada Experimental Range, and adjunct associate professor at New Mexico State University, has been named chair of the NEON Site Visit Committee. Her initial focus will be to select team members with the range of expertise needed to evaluate the scientific and logistical characteristics of potential NEON research sites in varied landscapes across the United States. Each team will consist of specialists who have experience with towers, flux measurements, biota, and research logistics. The other members of the committee are Alan Knapp (Col-



On-site evaluation: Debra Peters, an ecologist from Las Cruces, New Mexico, is assembling site-visit teams to evaluate the scientific and logistical characteristics of potential NEON research sites.

orado State University) and Beverly Law (Oregon State University).

Several site-visit teams will be needed to evaluate a subset of sites by the end of March 2007. These sites represent the range of geographical extremes and challenges for NEON infrastructure in locations proposed by the ecological research community in their responses to the NEON RFI (request for information). The teams will evaluate proposed tower locations and logistical considerations, such as distance to roads, power supplies, and communications lines, as well as the availability of housing and laboratories for NEON staff. All of these factors could affect the cost of doing research. Information from the initial site visits will help the NEON design team prepare for its NSF preliminary design review, scheduled for 30 April–4 May 2007.

Peters is a principal investigator for the NSF-supported Jornada Basin Long Term Ecological Research program in Las Cruces, New Mexico. She received her BS from Iowa State University, an MS from San Diego State University, and a PhD from Colorado State University. Her research interests focus on global change effects on ecosystem interactions across spatial scales, ecotone dynamics, and spatially explicit simulation modeling of arid and semiarid ecosystems.

Peters is particularly interested in issues associated with extrapolating information across scales, cross-scale interactions, and the nonlinear propagation of catastrophic events under varying climatic and disturbance regimes. In 2005, she served as cochair of the Climate Change Subcommittee during the three meetings of the NEON Design Consortium.

Tiger Team Profile: The Fundamental Instrument Unit

The NEON Fundamental Instrument Unit (FIU) is a suite of instruments designed to collect continuous measurements of abiotic variables, including temperature, precipitation, and soil conditions. These data will be used to derive near real-time ecosystem properties, such as spatial variability of below-canopy light and temperature, and trace gas pulse events after a rain. A permanent FIU will be deployed at a core wildland site within each of the 20 NEON climate domains, sampling abiotic and response variables at the continental scale over many decades, and providing valuable information on the within-ecosystem controls for ecological studies.

Each FIU consists of one advanced BioMesoNet tower; four basic BioMesoNet towers; and soil, aquatic, and canopy microclimate sensor arrays deployed around each tower. All of the towers will support a basic suite of meteorological sensors, while advanced towers will add a host of trace gas and vertical profile measurements, including eddy covariance sensors that can reveal how a whole ecosystem “breathes” (in terms of heat, water vapor, carbon dioxide, and other trace gases). The aquatic array will include sensors to measure stream discharge, water quality, biogeochemical cycles, and whole-ecosystem metabolism. All of the sensors and measurement systems are designed to help quantify the controls on specific ecological functions, and to measure variations in these controls, locally and between domains. These measurements will enable researchers to scale ecological questions to larger spatial areas and to access ecologically significant temporal patterns.



Hank Loescher, research associate in the Department of Forest Science at Oregon State University, chairs a “tiger team” of experts reviewing the NEON Fundamental Instrument Unit.

A “tiger team” of experts has been reviewing each component of the FIU in advance of the NSF preliminary design review of NEON. Hank Loescher, with the Department of Forest Science at Oregon State University, chairs the FIU team of 8 core members and 10 additional contributing scientists. The reviewers are evaluating how best to measure each specified environmental variable and how the instruments can dovetail with NEON science questions and the responses to the NEON RFI. The RFIs contain suggestions from the ecological community for the deployment of NEON sensors across the United States. The FIU review team is using the RFI responses, together with the NEON Integrated Science and Education Plan, to help guide decisions about what instruments to include in NEON. The FIU report will contain recommendations of specific sensors, their cost, and how they can mesh with data acquisition systems and maintain high data quality assurance and control (QA/QC) procedures.

“The whole team meets by telephone once a week to address general topics,” says Loescher, “and I coordinate specific tasks with each team member that best utilize their individual skills.” Those skills include expertise in theoretical and applied ecology, hydrology, soil and atmospheric science, biogeochemistry, and cyberinfrastructure design. “We had

to define different types of data products for public use, based on different levels of complexity and uncertainty, and directly link the science questions to the proposed data products,” says Loescher, who manages the network-level QA/QC lab for tower-based systems in the US Department of Energy’s AmeriFlux network.

The tiger team reviewers have provided valuable scientific input to the evolving observatory design. NEON is grateful for the service of its colleagues, many of whom have contributed to the advancement of the project in more than one capacity. Hank Loescher, for example, was a panelist on the NSF conceptual design review of NEON and participated in the technical evaluation of candidate NEON sites, held 12–16 February 2007 in Boulder, Colorado.

Executive Director’s Recent Blog Entries Online at <http://blogs.aibs.org/richardogrady>

- Outreach and Education in Evolution Journal Launches; AIBS Member Comments Welcome
- AIBS Annual Meetings 2007–2009 Forge Partnerships

Recent AIBS Education Reports Online at www.aibs.org

- AIBS Annual Meeting 2007: Evolutionary Biology and Human Health
- AIBS Education and Outreach Office expands in 2007 under new leadership
- Year of Science 2009 and COPUS initiatives
- AIBS Emerging Public Policy Leader Award
- NSF Robert Noyce Scholarship Program
- NSF Advanced Technological Education Program

- AFS summer internships for high school students interested in fisheries science
- NABT professional development regional workshops
- US Department of Education teacher awards and workshops
- Programs that work: A workshop on understanding interventions that encourage minorities to pursue biomedical, behavioral, and STEM research careers

Recent Articles Online at www.actionbioscience.org

Lesson for classroom activities

- “Bioinformatics” lesson, by Brendan Kelley, CSIP graduate fellow, Cornell University, and Irka Elsevier, AP biology teacher, Penn Yan High School, to accompany the article by T. Ryan Gregory, “Genomic Puzzles Old and New”

Spanish translations of previously posted articles

- “Las Montañas Foja de Indonesia: Explorando al Mundo Perdido” [The Foja Mountains of Indonesia: Exploring the Lost World], by Bruce Beehler, vice president for Pacific Island Programs at Conservation International, Washington, DC
- “Haciendo frente al Cambio Climático” [Coping with Climate Change], by Tony Prato, University of Missouri–Columbia, and Dan Fagre, Northern Rocky Mountain Science Center, West Glacier, Montana



Recent AIBS Public Policy Reports Online at www.aibs.org

Public Policy Report for 6 February 2007

- An early look at the FY 2008 budget for biology
- Attention graduate students: 2007 AIBS EPPLA application deadline nears
- Politicization of science has an ear in new Congress
- New in *BioScience*: “Declining Amphibian Populations: What Is the Next Step?”
- From the *Federal Register*

Public Policy Report for 22 January 2007

- Science community asks new Congress to support federal research funding
- Pelosi calls for increased federal funding for R&D
- Congress revisits stem cell research
- Scientists and evangelicals unite to protect the environment
- Climate change takes Congress by storm
- Year of Science 2009 and COPUS to promote public understanding of science
- Congress update
- GAO report recommends improvements for USDA management of key conservation programs
- New in *BioScience*: “Post Postdoc: Are New Scientists Prepared for the Real World?”
- Graduate student opportunity: Applications for the 2007 AIBS Emerging Public Policy Leader Award available
- From the *Federal Register*

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