# AIBS news

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# AIBS*news*

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## AIBS 2007 Board Elections Under Way; Polls Close 9 November

*Ballots for the AIBS Board elections have been mailed; members can also vote online at* www.aibs.org/vote.

At the end of 2007, the following positions become vacant on the 13-person AIBS Board of Directors for individual members to vote on (a) president-elect, (b) secretary, and (c) two board members at large. (Board elections by the AIBS Council of Member Societies and Organizations are also under way through a separate online ballot.) All terms start January 2008. The president-elect serves a one-year term and automatically succeeds to a one-year term as president, then a one-year term as immediate past-president. Board members serve a three-year term, as does the secretary.

To cast your vote, please go to the online ballot at *www.aibs.org/vote* and sign in with your last name and six-digit AIBS membership number (as it appears on your AIBS membership card and *BioScience* mailing label; for assistance, contact AIBS at admin@aibs.org, 703-790-1745, or 800-992-2427). A paper ballot was mailed to all members; if you prefer to use that ballot, please complete it and mail it to AIBS. The polls close on 9 November 2007.

AIBS thanks all of the candidates for their dedication and willingness to run for these voluntary positions. Biographical sketches and election statements are presented below.

### Candidates for President-Elect

The two candidates are listed alphabetically; vote for one.

#### May Berenbaum

Born in Trenton, New Jersey, in 1953, May Berenbaum graduated with a degree in biology from Yale University in 1975 and received a PhD in ecology and evolutionary biology from Cornell University in 1980. Since August 1980, she has been on the faculty of the Department of Entomology at the University of Illinois at Urbana-Champaign and has served as head since 1992. She is interested in interactions between phytophagous insects and their host plants and the function of these interactions in the organization and structure of natural communities. On the physiological level, she investigates mechanisms of toxicity of plant chemicals as well as molecular and biochemical adaptations of insects to these toxins; on the ecological level, she examines patterns of insect host plant use as a function of the distribution and interaction of plant chemicals. In addition, she is concerned with the practical application of ecological and evolutionary principles and has examined impacts of genetic engineering, global climate change, and invasive species on natural and agricultural ecosystems. In recognition of her work, Berenbaum has received the George Mercer Award and the Robert MacArthur Award from the Ecological Society of America and the Founder's Award from the Entomological Society of America. She was elected to the National Academy of Sciences in 1994 and is also a fellow of the American Association for the Advancement of Science, a fellow of the American Academy of Arts and Sciences, and a member of the American Philosophical Society.

In addition to her research, Berenbaum is devoted to teaching and fostering scientific literacy. She has written many magazine articles, as well as four books, about insects for the general public. She has had public speaking engagements at over 100 schools, service organizations, museums, science and nature centers, and special interest organizations and has been interviewed by media hundreds of times about insect-related news stories. She also founded the UIUC Insect Fear Film Festival, a celebration of Hollywood's misperceptions of insect biology, an outreach activity now entering its 25th year. In recognition of her efforts in teaching and outreach, she has been granted the Edward O. Wilson Naturalist Award from the American Society of Naturalists in 1999 and the Entomological Society of America Award for Distinguished Teaching in 2006.

Recent service to her profession includes membership on the editorial boards of four journals and terms on the National Academy of Sciences Council and Governing Board, the National Research Council Board on Agriculture and Natural Resources, the National Academy of Sciences Committee on Science and Creationism, and the Advisory Board of the Koshland Museum of the

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National Academy of Sciences. She has chaired two National Research Council study committees, including most recently the Committee on the Status of Pollinators in North America. At present she is on the Board of Directors of the Xerces Society for the Preservation of Endangered Invertebrates and the Board of Directors of Conservation through Poverty Alleviation International (wild silk project).

**Berenbaum's statement:** *The year 2007 marks the 60th anniversary of the founding of the American Institute of Biological Sciences. The biological sciences have changed substantially since its founding; spectacular advances have presented new opportunities to the community of biological scientists. The rise of genomics, proteomics, metabolomics and computational biology has provided tools for investigating biological phenomena with hitherto unimaginable precision. At the same time and on an entirely different scale, globalization of trade and information technology has created new challenges to our community; among the most conspicuous are global climate change, emerging and re-emerging infectious diseases, invasive species, bioterrorism, and accelerating losses in biodiversity. The exponential growth of the life sciences has resulted in an explosion of literature, a proliferation of programs, and a tremendous expansion of the field, blurring disciplinary boundaries and affecting the development of allied physical and mathematical sciences. One perhaps inevitable consequence of this remarkable expansion has been a balkanization of the life sciences—progressive evolution of more specialized units that at times, due to perceived competition for funds, students, or attention, may be hostile to one another. The great strength of AIBS is that it can summon the disparate life sciences together again for greater impact and authority. Due to the comprehensive nature of its aggregate membership, AIBS is best equipped of all biological science organizations to advocate for the life sciences as a whole, provide guidance for their advancement, and rally to meet the challenges of the 21st century global community.*

*Chief among the missions of AIBS is improving informal bioscience education, aimed at both providing a sound foundation of knowledge and communicating cutting edge developments to a general audience. The need for outreach and public engagement has, I believe, reached a critical juncture. Although I am completely enthusiastic about the upcoming Year of Public Understanding of Science, in 2009, at the same time I'm dismayed that there is a need for such a special, designated "year." Digital communication of all sorts has made virtually every kind of scientific information available to the general public to an unprecedented extent. Innovations in open access publishing have made elements of the primary scientific literature universally accessible online; websites, podcasts, blogs, cable shows, and videos complement the more traditional radio, magazine and book sources of scientific information for the general public. Every year in theory should further public understanding of science, without any assistance from AIBS or any other science organization. Unfortunately, the increased accessibility of information through the Internet and in other new (and even traditional) media has been accompanied with a veritable explosion of misinformation, pseudoscience, and at times inflammatory rhetoric. Outreach efforts by scientists were in the not-too-distant past generally regarded as déclassé or undignified or the responsibility of individuals incapable of doing anything else in science. The bioscience community can no longer afford such attitudes; the entire science enterprise in the United States depends on the good will and support of the general public, and that support is contingent upon a clear understanding and appreciation of the value of science to public welfare. AIBS must lead by example in this enterprise.*

*Insuring accurate and comprehensible communication of biological science is also essential in fulfilling the AIBS mission of advancing biological research in service to society and in promoting informed decision-making by policy-makers on issues relating to biological science. The complexities of interacting living systems have made science policy-making more difficult; access to objective information to inform policy is thus critical at all levels of government. American competitiveness in life sciences worldwide is at risk, in part because policy decisions at times have been unduly influenced by politics rather than sound science. AIBS has both a responsibility and an opportunity to contribute an articulate, rational, and objective voice to national and international discussions. Complex problems often require complex solutions and AIBS should contribute to promoting multidisciplinary systems approaches to addressing these problems. At the same time, the history of the biosciences, including many of its most spectacular recent advances, owes a great deal to investigator-driven basic research; in the midst of the fervor for developing new team-based multi-institution collective efforts, the importance of curiosity-motivated individual investigators should be recognized and nurtured, to insure a creative, competitive future.*

*Finally (but no less importantly), I hope AIBS can insure the future of biosciences in the United States by articulating the fascination of the natural world and the adventure, excitement, and rewards of bioscience research to all facets of American society. Attracting and helping to train the next generation of biologists, by reinvigorating and enhancing K–12 education and broadening impacts in college and beyond, are the surest ways to brighten prospects for everyone's future. It's my fervent hope that the relevance of AIBS will continue to increase over the next 60 years.*

### Deborah E. Goldberg

Deborah E. Goldberg is the Elzada U. Clover Collegiate Professor and chair of the Department of Ecology and Evolutionary Biology at the University of Michigan (UM). Her research explores the processes that control the structure and function of ecological communities over a variety of spatial and temporal scales, and how these processes are affected by changes in climate, nitrogen enrichment, and by invasion of exotic species. Her work includes syntheses of diverse aspects of species interactions and their contribution to community dynamics. She collaborates broadly both within ecology and across disciplines, including projects with hydrologists, remote sensing specialists, and molecu-

lar epidemiologists, and has conducted fieldwork in deserts, wetlands, and forests.

Goldberg has also held appointments as a visiting faculty member at the Hebrew University of Jerusalem, the University of New Mexico, Ben Gurion University, and Charles University in Prague. She has served or is serving on the editorial boards of *Ecology and Ecological Monographs; American Naturalist; Journal of Vegetation Science; Conservation Ecology; American Midland Naturalist; Perspectives in Plant Ecology, Evolution, and Systematics;* and *Israel Journal of Ecology and Evolution;* she is also on the Advisory Council of the International Association of Vegetation Science and the Science Advisory Board of the National Center for Ecological Analysis and Synthesis. She has served as chair or member of numerous committees for the Ecological Society of America and the American Society of Naturalists, as well as for the University of Michigan, where she was on the Steering Committee for the UM theme semester "Explore Evolution."

Born in Brooklyn, New York, Goldberg received her BA from Barnard College in 1975, and her PhD from the University of Arizona in 1980. She was a postdoctoral fellow at the Kellogg Biological Station of Michigan State University from 1980 to 1983, and has been on the faculty at the University of Michigan since 1983.

**Goldberg's statement:** *Perhaps it is now pedestrian to note that the 21st century is the century of the life sciences, or what we used to call biosciences. Yet in the public imagination, Life Sciences seems to have taken on a far more narrow meaning, "how will biotech allow me to live forever." That is, the traditions that emerged from Wallace and Darwin and Mendel and Watson and Franklin and Carson and McClintock, to name a few, have been collapsed in the public mind into the narrow category of "biomedical." It is imperative that we reinsert bioscience, with its original inclusive intent, into the discourse.*

*In this context, I would argue that we have now entered the century of the integrative life sciences or, as AIBS has long had it, the biosciences. Scientists increasingly understand the complexity of feedbacks between the biosphere and all aspects of human society and the global environment. This complexity means we must ultimately view all levels of organization, from molecules and genes to organisms and ecosystems, as interacting with an ever-changing environment that includes other organisms, rather than as isolated in time or space. Such a dynamic and interactive perspective is essential not only for understanding the world around us, but for meeting the societal challenges in health, energy, food production, and natural resources that are the result of our gross mismanagement of the environment.*

*Given this framework, AIBS has the unique responsibility to put forward a coherent and compelling message of the importance of this organismal and environmental focus of the biosciences through formal education, outreach, new research initiatives, and policy development. We have all bemoaned the declining state of scientific literacy in the United States and this declining state is undoubtedly connected with the complacency that has met the many government attempts to discredit or ignore scientific consensus in recent years. The upcoming Year of Public Understanding of Science in 2009 is a tremendous opportunity to do something about these related dangers, with some recent signals suggesting cause for optimism. We should be capitalizing on the remarkable sea change in public, corporate, and political attitudes towards the reality of global climate change over the last year to expand the dialogue between environmental and organismal biologists and the public. Similarly, the consequences of invasive species and biodiversity loss for ecological services are now often major items in the popular press. The move towards biofuels, with all their promise yet potential problems, has already had major impacts on world economies, with the price of tortillas in Mexico reflecting the speculations of corn farmers in Iowa. If AIBS does not take the lead on educating the current and future generations on these topics, who will?*

*If elected president of AIBS, I would focus my efforts on two particular challenges in education and research in the biosciences:*

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*(1) Research in science pedagogy has made enormous advances in recent years, with expanded federal funding and many agencies and nonprofit groups involved. Indeed, AIBS has been the center of outstanding efforts to develop and distribute effective curricula and teaching materials for biology, including initiating the Biological Sciences Curriculum Study and coordination with the National Association of Biology Teachers. However, communicating what works and doesn't work to those "in the trenches" is still an enormous challenge. We need new and creative approaches for dissemination and communication to greatly expand use of successful strategies and reduce time spent in local reinvention.*

*(2) Diversifying the work force in biology is both a moral imperative and a necessity to develop the next generations of researchers and educators in the biosciences. AIBS has several projects ongoing, including a coalition to disseminate ideas about what works and doesn't in increasing diversity in student and professional populations, but again, the communication of effective strategies must be broadened to have maximum impact. If we are to solve the major problems we face in the biosciences today, we must take advantage of all the talent available to us, and not restrict ourselves to dip into the same pool from which our professionals have emerged since the nineteenth century.*

## Candidates for Secretary

The two candidates are listed alphabetically below; vote for one.

### John R. Jungck

John R. Jungck is the Mead Chair of the Sciences, professor of biology, and chair of the Science Division at Beloit College. He specializes in mathematical molecular evolution and bioinformatics, history and philosophy of biology, and science education reform. In 1986, he cofounded the BioQUEST Curriculum Consortium, a national consortium of college and university biology educators devoted to curricular reform across the nation. It promotes quantitative, open-ended problem solving, collaborative learning, peer review, research, and civic engagement and social responsibility. He teaches courses in evolution, genetics, cellular and developmental biology, bioinformatics, mathematical biology, finite mathematics, and the history and philosophy of biology, as well as liberal arts courses team-taught with a poet, such as East/West; Gödel, Escher, Bach; Two Cultures/Four Epochs; and Victorian Studies. He has also held many editorial positions at the BioQUEST Library, *Bioscene: Journal of College Biology Teaching, American Biology Teacher, Bulletin of Mathematical Biology, BioScience,* and *Journal of Computers in College Mathematics and Science Teaching,* and has served on the editorial boards of several journals, including *Evolutionary Bioinformatics Online, Numeracy, BioSystems: Journal of Molecular, Cellular and Behavioral Origins and Evolution, American Journal of Undergraduate Research,* and *Cell Biology (Life Science) Education.* He is the chair of the National Academies' US National Committee to the International Union of Biological Sciences, on the council of AAAS, a member of the Executive Committee of the International Union of Biological Sciences, chair of the Education Committee of the Society for Mathematical Biology, Vice President of the Commission on Biological Education of the International Union of Biological Sciences, on the Governing Board of the National Numeracy Network, and chair of the Awards Committee of AIBS. He formerly served as president of the Association of College and University Biology Educators (*www.ACUBE.org*). He served on two National Research Council committees: the Board on Science Education and the Information Technology committee. He has received significant grant support from the Howard Hughes Medical Institute, the National Science Foundation, the US Department of Education, the Annenberg Fund/Corporation for Public Broadcasting, and numerous private foundations. His awards include the 2004 AIBS Education Award, an honorary doctorate from the University of Minnesota, two EDUCOM awards for software and curricula, a National Science Teachers Association O'Haus Award for Outstanding Innovations in College Science Teaching, and Teacher of the Year at Beloit College. He has traveled to more than forty countries and presented professionally at many of them. He serves on boards in both New Zealand and Thailand. He is a Fulbright Scholar (Thailand), a Mina Shaughnessy Scholar, a fellow of the National Institute of Science Education, and a fellow of the American Association for the Advancement of Science.

**Jungck's statement:** *I first presented at an AIBS annual meeting in 1967, as part of a panel on the future of American undergraduate education, and cosponsored by the then Commission on Undergraduate Education in the Biological Sciences (CUEBS) and chaired by Ed Kormondy. AIBS became the home of CUEBS and, later, of CELS (the Coalition for Education in the Life Sciences), while I served on its executive board. While much has changed in these past forty years, several things remain the same: first, AIBS still is one of the major voices standing behind the need for reform of teaching and learning in the biological sciences; second, AIBS has maintained a consistent policy of promoting the participation, recruitment, retention, and advancement of minorities and other historically underrepresented groups; and, third, AIBS has been a significant partner in establishing federal policies on environmental and health issues. These three aspects of AIBS attracted me to AIBS and have kept me involved in projects associated with these agendas ever since. Unfortunately, each of these issues is as pressing today as it was then.*

*I have been delighted that AIBS is currently involved with two national initiatives: NESCent (the National Evolutionary Synthesis Center at Duke University, University of North Carolina, and North Carolina State University) and NEON (the National Ecological Observatory Network). I am chair of the education initiative at NESCent entitled the SELECTION Working Group; we are dedicated to the production of evolution education materials that stress the benefits of understanding and applying evolutionary science to everyday societal problems: resistance to cancer chemotherapy, antibiotics, pesticides, her-*

*bicides, etc.; design of vaccines and pharmaceuticals (especially for emerging infectious diseases and pandemic diseases of people in developing countries); strategies for biocontrol of invasive species; breeding programs for maintaining endangered species; phylogenetics in forensics; development of engineering designs by Darwinian programming and/or genetic algorithms; and the use of quantitative genetics in agricultural and silvicultural breeding. We are trying to engage the community in collaborative curriculum development, better peer review of learning materials after actual classroom and laboratory use, and the construction of collaboratories that allow us to engage students in original investigation with access to professional tools, complex data bases, and remote real time data acquisition. With respect to NEON, I believe that their efforts will surpass the Human Genome Initiative in terms of production of a data stream. How will we deal with the challenges of terabytes of data per day, nonlinear complexity, multiscale phenomena, and multidimensional visualization associated with the NEON project?*

*As an education reformer, I actively communicate with multiple professional societies such as the Botanical Society of America, the American Society for Microbiology, the Society for Mathematical Biology, the Society for the Study of Evolution, the Society of Systematic Biologists, and the American Society for Cell Biology (all of which are actively engaged with biology education). I believe that AIBS plays an important role in its power to convene heterogeneous players and to promote and celebrate their innovations. I believe that synergies are possible when we bring the constituent societies within AIBS and with other major professional societies with shared interests together to focus on topics. Particularly, I celebrate the work of AIBS's ActionBioscience.org Web site's successes in intelligently informing the public and policymakers with personal and professional journalism. As someone who travels extensively internationally and locally, I believe that face-to-face exchanges are crucial to the work of AIBS. We live in a heavily networked world that has become intensified by the pressures of instantaneous communication: cell phones, e-mail, faxes, express mail, wireless mobile technologies, etc. With such pressures, I believe that quality personal communication has become more important and that we need to develop new strategies for meaningful interaction.*

*Finally, I believe that nearly every professional journal is struggling with more pressures on our ability to sustain quality peer review and vetting of professional work as well as negotiating the waters of open source, copyright, and open access. I believe that AIBS can help lead the way to sensible solutions for multiple professional societies.*

*Thus, I would be pleased to serve AIBS as an officer committed to civil rights, social responsibility, public policy, internationalism, and education.*

## Gordon E. Uno

Gordon E. Uno is currently chair (since 2000) of the Department of Botany and Microbiology at the University of Oklahoma–Norman. A faculty member at Oklahoma University since 1979, he became a David Ross Boyd Professor of Botany in 1997, with interests focusing on plant reproductive biology and science education. He has served as a program officer in the Division of Undergraduate Education at the National Science Foundation (1998–2000), was president of the National Association of Biology Teachers (NABT) in 1995, and was awarded Honorary Membership to NABT in 2001. He currently serves on the Board of Directors of the AIBS and is the chair of the Education Committee of both AIBS and the Botanical Society of America. He became part of the AAAS Organizing Committee for the Bioscience Education Network (BEN) collaborative (2000), is on the BEN Pathways Advisory Board, and was elected an AAAS Fellow in 2000. He has served on the National Science Foundation's Advisory Committee for GPRA Performance Assessment for two years and is an editorial board member for the *International Journal of Science Education* and *BioScience*. He received his BA in Biology with Education from the University of Colorado–Boulder in 1973 and his PhD in Botany from the University of California–Berkeley in 1979. During his tenure at Oklahoma University, Uno has taught nearly 8000 undergraduate students, mostly in his inquiry-based Introductory Botany course. Among his publications, he has been author or coauthor of 25 different textbooks, workbooks, and study guides, including the Biological Sciences Curriculum Study's Green Version textbook for high-school biology students; two college-level botany texts, *Principles of Botany* (with Randy Moore and Richard Storey) and *Introductory Plant Biology* (10th edition with Kingsley Stern); *Developing Biological Literacy: A Guide to Developing Secondary and Post-secondary Biology Curricula* (with the BSCS); and the *Handbook on Teaching Undergraduate Science Courses: A Survival Training Manual,* originally developed to help graduate students entering the job market and young faculty members starting their first academic position. He has been awarded four teaching awards from the University of Oklahoma, one award from the Oklahoma Foundation for Excellence (Teacher of the Year at the College/University level, 1998), and two national awards from the Botanical Society of America: the Charles E. Bessey Award for contributions to Botanical Education (1991) and a Centennial Award for contributions to the advancement of plant sciences and to the BSA organization itself (2006).

Uno, having just completed a Howard Hughes grant to support teacher training, is currently investigating new approaches to the professional development of in-service biology teachers focusing on teacher-conducted biological research, funded through two NSF grants. He has spent the bulk of his career dealing with issues related to the scientific literacy of college students and the general public, as well as the preparation of future biology teachers at both precollege and college levels. He is currently working with the new National Evolutionary Synthesis Center on a project about evolution across the biology curriculum, as well as the Botanical Society of America on its "Planting Science" project.

**Uno's statement:** *The work of AIBS continues to benefit biologists in many*

*different ways because of the efforts of Executive Director Richard O'Grady, and the staff he has assembled. While AIBS Board members establish policy issues and have fiscal responsibilities for the organization, I feel we must also support the efforts of the AIBS staff, to "step back" and let them do their work, and to provide suggestions and guidance to them when appropriate. Through the efforts of Robert Gropp and the Public Policy office of AIBS, congressional members and their staff are regularly contacted about upcoming legislation and issues that may affect biologists and biological research. These meetings are essential because they help key lawmakers understand the critical importance of research being conducted by AIBS biologists who are not usually funded by NIH. Through recent activities of the Education Committee and Samantha Katz, the Director of Education and Outreach, AIBS has dramatically increased its leadership role in biology education at the undergraduate level and its impact on the quality of biology teaching at both the college and precollege levels. The influence of AIBS also continues to grow because of the fine editorial work of Timothy Beardsley and the expanding use of the AIBS journal,* BioScience*, in classrooms as well as by biological researchers. All these efforts are related to the importance of communicating biology to biologists and to different constituencies of the general public. AIBS must continue to be proactive in its communication to those who study the discipline and to those who affect and are affected by the work of biologists.*

*One issue of major concern to me is quality science education, and AIBS is helping to develop relationships between precollege instructors and postsecondary members of AIBS. Among these efforts are collaborative activities between AIBS and the National Research Council, the participation of AIBS in the AAAS National Digital Library (BEN) project, and the well-attended Evolution symposium (now in its fourth year) sponsored by AIBS at the annual convention of the National Association of Biology Teachers (NABT). There are many more educational opportunities for AIBS on the horizon, including organizing an Educational Summit of key science education leaders from all the AIBS constituent societies; addressing concerns of biologists about the future funding of nonmedical research and biology education; and helping to keep intelligent design and pseudoscience from the biology classroom. In addition, 2009 has been designated the "Year of Science," during which a wide variety of science activities will be presented to the general public in an effort to increase their interest in and information about science. AIBS is leading the way for COPUS (the Coalition for the Public Understanding of Science), which is a group of "like-minded" organizations that will celebrate science and scientists during 2009, inform the public about science through a variety of events, and build a long-term communication network to promote science.*

*As a Board member of AIBS and chair of its Education Committee, I have helped to initiate and promote such educational efforts mentioned above. I have also worked to increase additional collaborations between AIBS and the NABT because the missions and main issues important to both organizations are highly complementary. More and more high-school biology teachers, college and university faculty, and their students are using* BioScience *as an important learning resource. The annual AIBS meetings and publications have become important conduits for cutting-edge research to enter biology curricula at all levels, as well as for informing policymakers. We must redouble our efforts to help quality students enter the pipeline to our undergraduate and graduate programs, to improve the scientific literacy of the general public, and to ensure that future voters receive contemporary instruction and training in biology. Scientific literacy is important to the future funding of basic and applied research as well as funding of educational efforts; we can certainly see the importance of scientific literacy for our elected officials and of increased vigilance by AIBS members when it comes to such issues as the teaching of evolution. But it is not just scientific and biological information that instructors need; instructors need greater communication between those who practice science and those who teach it, as well as political, financial, and material support for teaching quality science courses. I think it is critical that AIBS members focus on what is happening in our own classrooms as well as what is happening in our field sites and laboratories because, whether we like it or not, we are models for future teachers as well as future scientists. Thus, I think it is important to advance both the scholarship of teaching as well as the scholarship of research.*

*It is my intention to see that AIBS remains at the forefront of science education efforts at both the undergraduate and precollege levels. I also will promote those activities that increase the pipeline of students into our research laboratories and classrooms, including the diverse population of American students who may be considering careers in business and other non-science disciplines. I will work to maintain the financial health of AIBS so that its important efforts in public policy issues may continue, and support and promote all COPUS events—even beyond 2009. The AIBS needs to continue to respond to the concerns and needs of AIBS members and to recognize and assist those who conduct biology research, those who make important scientific contributions to society, and those who educate future scientists and informed citizens. We must also effectively engage those who affect the work of biologists, including lawmakers, campus administrators, and funding agencies. While much progress is being made on all these fronts, there is still much that AIBS, and we, can do.*

## Candidates for Board Member Elected by the Membership at Large

The three candidates are listed alphabetically below; vote for two.

### Carol Brewer

Carol Brewer, now associate dean of the College of Arts and Sciences and professor of biology, joined the University of Montana faculty in 1993. She received a BA in biology from California State University–Fullerton in 1981, and went on to complete a BS in Science Education (1985), MS in Zoology and Physiology (1986), and PhD in Botany (1993) at the University of Wyoming. She has active research programs and mentors graduate students in both plant physiological ecol-

ogy and science education (*www.bioed.org*). The core philosophy of her research program is that knowledge alone is not sufficient for improving scientific literacy unless such knowledge is shared and applied effectively; scientists must communicate about science in a way that captures the imagination and understanding of the communities in which they live. Recent areas of research and publications have included topics such as the functional morphology and conservation biology of plants in the Patagonian Andes of Argentina, exploring how film influences science literacy, and training teachers to use their schoolyards for leading ecological investigations to ensure no child is left indoors (*www.bioed.org/ecos*). She is now collaborating on a national ecological literacy initiative through the Ecological Society of America as well as on the creation a national citizen science program (Project Budburst) to monitor plant phenology as a tool for tracking the influence of global warming. Brewer is on the editorial boards of *Conservation Biology* (associate editor) and *Frontiers in Ecology and the Environment,* and was the vice president for Education and Human Resources of the Ecological Society of America from 2000 to 2006. She led the education planning for the National Ecological Observatory Network (NEON) and for the National Phenology Network. She serves on the Boards of Directors of NEON and the Biomimicry Institute, and the National Advisory Boards of Earth and Sky Radio, the Long Term Ecological Research Network, and the Global Lakes Environmental Observatory Network. In May, she received the 2007 Education Award from the American Institute of Biological Sciences, and in August 2007, she received the Eugene P. Odum Award for Ecological Education from the Ecological Society of America.

**Brewer's statement:** *This is an exciting time to be a biologist. Many of the pressing challenges of this century will be informed by the discoveries of biological scientists across the many fields championed by AIBS. But beyond our pursuit of new discoveries, we must make this the century of communicating about our science more effectively with the public. This is one of many areas where the mission of AIBS converges with my interests and experience. The serious challenges we face in the 21st century, especially related to the environment, cannot be solved by narrowing our focus to collecting more and more data—results that may never make it into the hands of decisionmakers. What does this mean for scientists? We must take more responsibility for translating the results and significance of our research in a way that captures the imagination and understanding of the communities in which we live. More than ever before, attention to science education, and scientific and environmental literacy specifically, is essential if we hope that the general public, business people, and decisionmakers will be responsive to scientific information as one of many lenses that are needed to understand the world around us. As an umbrella organization for nearly 200 societies and organizations focused on the life sciences, AIBS is ideally situated to help biologists communicate their discoveries in venues from the K–12 classroom to local city council meetings, and into business boardrooms and the halls of Congress.*

*AIBS was one of the first professional societies I joined back in the 1980s as a graduate student. One reason I was drawn to AIBS, and have been a longtime member, is that this organization has long been a leader in supporting the synergy between biological research, policy, and education. In fact, AIBS was one of the first biological research societies to open the pages of its flagship journal,* BioScience, *to contributions in education and policy. As a candidate for the AIBS Board, I look forward to the opportunity to play a larger role in linking the biological sciences with the public. And there are hopeful signs today that the public is eager to learn more about biological and other scientific discoveries that help us understand the world we live in. Who could have imagined just a few years ago that there would be a popular weekly program on television about the influence of climate change on the environment and human health? Yet along with these promising signs there is still an insidious antiscience current (e.g., efforts to ban the teaching of evolution; censorship of scientists working in some agencies) that requires continued vigilance and action by the member organizations and individuals in the AIBS umbrella.*

*In 1941, John Steinbeck commented in* Log from the Sea of Cortez *that he had never met a single great scientist who could not converse as easily with a child as with another scientist about what they do and what they know. And today more than ever before, sharing the results of our science beyond our scientific community is a critical part of the researcher's role in promoting scientific literacy because scientists engaged in creative research endeavors can bring the excitement of discovery and up-to-date scientific advances to the diverse venues in which they work. And we can model science as a human endeavor conducted by a diversity of people. Clearly there are many specific approaches to cultivate science literacy and create opportunities for learning about science and the environment, but most of the best ones have the same core principles—we learn best through experience, meaningful collaborations, and partnerships. So what better time can there be to volunteer to serve this organization! AIBS is a leading partner in the Coalition on the Public Understanding of Science and in planning for the "Year of Science in 2009," the national yearlong celebration of science. As a member of the AIBS Board, I will lend my experience and energy to the good work already underway to communicate about our science, promote collaboration between AIBS and other societies and organizations with similar interests and important new constituencies, and work with the AIBS leaders, staff, and members to make sure the organization continues to be an effective champion for all of the biological sciences.*

## Louis J. Gross

Louis J. Gross is a professor of ecology and evolutionary biology and mathematics at the University of Tennessee at Knoxville (UTK), and director of the Institute for Environmental Modeling. He received his BS in mathematics from Drexel University in 1974 and his PhD in applied mathematics, with a minor in ecology and systematics, from Cornell University in 1979. His dissertation at

Cornell involved laboratory experiments, field studies, and models for the dynamic response of photosynthesis in strawberry to light variations. Since leaving Cornell, he has been on the faculty at Tennessee. His research focuses on computational and mathematical ecology, with applications to plant physiological ecology, conservation biology, natural resource management, and landscape ecology. As director of the Institute for Environmental Modeling, he leads researchers working on an array of environmental problems from the biotic impacts of Everglades restoration planning, to invasive species control, infectious disease management, and risk assessment of environmental contaminants.

Gross has coedited four books, including *Individual-based Models and Approaches in Ecology,* which motivated the tremendous expansion of these models in ecology over the past decade. He has led numerous research projects, having been lead principal investigator on over $7,000,000 in externally funded projects over the past two decades. He has been a leader in the development of the ATLSS (Across Trophic Level System Simulation) project, one of the largest ecological modeling projects ever constructed, which has provided a critical tool in the ongoing complex restoration planning for the Everglades. The National Science Foundation has funded his research in parallel and grid computing for ecological models, ecological multimodeling and spatial control of natural systems. He was the recipient of the 2006 Distinguished Scientist Award from AIBS.

Among his many leadership positions, Gross has been president of the Society for Mathematical Biology, chair of the Board of Governors of the Mathematical Biosciences Institute, president of the Faculty Senate at UTK, and chair of the National Research Council Committee on Education in Biocomplexity Research. He is program chair for the 2008 annual meeting of the Ecological Society of America. He has devoted extensive effort to education at many levels. He was codirector for 20 years of a series of courses and workshops on mathematical aspects of ecology and environmental science at the International Centre for Theoretical Physics in Italy. These involved participants from over 60 countries, with an objective of building the scholarly infrastructure in the Third World to address environmental problems using their own talent. Participants in these courses are now leading research groups all over the world, educating their own students in environmental problem solving. At the undergraduate level, he has devoted considerable effort to quantitative training in the life sciences, and was involved in several capacities in the National Academy of Sciences Bio2010 report (*Transforming Undergraduate Education for Future Research Biologists*). He developed the entry-level course on mathematics for life science at Tennessee, using a hypothesis-driven format, with a focus on data and models, which he teaches regularly to large groups of biology majors.

**Gross's statement**: *I recently moved offices for the first time in over a dozen years, and in doing so had to decide what to recycle and what to keep. As I did this, I was reminded how much biology I have learned from reading the two decades of* BioScience *that I had accumulated. In a field as broad as biology, there is little hope of keeping up with every area, but especially for someone with a mostly quantitative background, the clarity and simple joy in biology that exudes from each issue of* BioScience *makes it possible that at least some of the glorious expansion which occurred over the past two decades has seeped into my consciousness. I kept all the issues, with the hope that some of the students using the small conference room where these are stored will peruse an issue occasionally and discover a bit of the pleasure that I have had from these pages over the years.*

*One of the disappointing states of affairs in biology is the fact that unlike other major scientific fields in the United States, biology doesn't have a single or small number of major scientific organizations to speak on its behalf. In math there are three main societies, with yearly joint gatherings, chemistry and physics each have single large societies with real clout. What we have in biology is a multitude of sub-disciplinary organizations, some small, some immense—and AIBS. For this reason alone, AIBS plays a truly critical role in the life sciences in the United States—while it may be only a single voice crying out amongst the cacophony of Washington, at least it has the capacity to speak with some unanimity regarding ALL of biology.*

*The more effective we can make AIBS in expressing the combined wishes of its member organizations, the more effectively we can enhance the likelihood that this will be the century of biology in terms of public and governmental support and not just in verbiage. One of my goals as a Board member for AIBS will be to foster a unified view of biology as an integrated discipline with major challenges that cut across scales and sub-disciplines. If we are successful in this, it should enhance our ability to present a unified front on matters of public and political support that will allow us to move our science along more rapidly. This requires careful collaboration amongst the many public affairs and government relations offices of the members of AIBS, building cohesive teams capable of utilizing the diversity of expertise available through our members to build consensus on public policy issues. While difficult to attain, AIBS is the natural organization to lead this endeavor.*

*Challenges facing biology are those facing AIBS: (1) How do we build a cohesive view of biology amidst the long-standing trends towards reductionism? (2) How do we effectively foster the diverse education required for biologists of the future, including connections to numerous other disciplines, while ensuring the development of biological intuition that is so critical to finding pattern from complexity in biological systems? (3) How do we assist the general public in comprehending the promise and challenges, scientific and ethical, of biological advances that are already here and those expected in the near future? (4) How can we proceed to develop an integrated view of natural systems that accounts for human activities, economics, social and cultural factors and capable of providing guidance to address major issues of global concern?*

*No one person or organization can feasibly address all of these challenges, but I believe AIBS has an obligation to choose a major issue such as one of the above, and devote its energies to addressing it. As may*

*be evident from this list, my experience leads me to focus on the hope for a more integrative science developing from our blossoming knowledge at the many temporal and spatial scales on which biological systems act. While there may be quite different interpretations of the meaning of "systems biology," in the broadest sense this means elaborating the connections between biological processes operating at different scales and how they interface to chemical, physical and human systems. Effectively building such a view will enable us to better address questions of whole-organism function (with numerous applications to human health), evolutionary questions that require accounting for the historical consequences of multiple scales of interactions, and questions associated with global change that incorporate multiple levels of interacting biological systems. AIBS can foster the interactions needed amongst our members to develop such a systems view, publicize these efforts, and encourage collaborative efforts to garner public support for such initiatives. If you concur that these are attainable goals for AIBS, I encourage you to support my candidacy for election to the Board.*

### Paula Mabee

Paula Mabee is a professor in the biology department at the University of South Dakota. She was awarded her PhD in zoology from Duke in 1987, continued with two postdoctoral fellowships (National Museum of Natural History and a National Science Foundation [NSF] postdoc at Dalhousie University), and she accepted her first position at San Diego State University (1991–1997). Her interdisciplinary research and teaching involve "devo-evo" biology with a focus on fish skeletal development, evolution, phylogenetic systematics. She now leads the morphological data collection for an NSF Tree of Life grant for cypriniform fishes, and heads a major informatics effort to integrate model organism genetics databases with comparative anatomical evolutionary databases. She has served as president of the Society of Systematic Biologists (1996–1997), divisional chair (Systematics) in the Society of Integrative and Comparative Biology (1998–2000), and on many other committees and editorial boards in various capacities.

**Mabee's statement:** *A central part of the AIBS mission is to facilitate interdisciplinary communication and interactions among biologists, professional biological societies, and the public. I am enthusiastic in my support of this integrative mission, and as a board member of AIBS I would be particularly interested in working on the new AIBS effort to build the Coalition on the Public Understanding of Science (COPUS). The COPUS goal is to achieve a greater public understanding of science and its value to society by linking universities, scientific societies, science centers and museums, educators, and industry in a peer network. This is a critical and worthy goal that all scientists support, and one that is particularly fitting for AIBS support. Some of the difficulties in bridging groups with diverse goals, terminologies, and interests (e.g., business and universities) can be overcome by carefully defining some basic common goals and putting into place the cyber-infrastructure to support it. I am particularly interested in helping put such structure in place and in supporting other data sharing efforts that AIBS may spearhead. My previous work with businesses, citizen science programs, and universities (which led to development of a handheld bird identification program;* www.handheldbirds.com*) and my current informatics effort* (https://www.nescent.org/phenomap/informatics*), whose goal is to tie the genetic data from the zebrafish model organism community (*www.zfin.org*), to the comparative phenotypic data from systematic evolutionary biologists (with the support of the National Evolutionary Synthesis Center (*www.nescent.org*), provides me with some vital experiences in working with diverse groups.*

*I am also interested in actively working with AIBS member societies for more effective communication and coordination of activities encompassing comparative organismal biology, environmental biology, and evolution. I would like to work with the AIBS Council to seek out effective ways of working together to achieve our goals as scientists, educators, and concerned citizens. AIBS presents science to policy makers on the spectrum of issues influencing people and nature, and these include in particular problems involving the environment, biodiversity, evolution, and education. Particularly in this time in which we need a massive infusion of science education to the public, we need a strong voice in Washington—and AIBS is our lobby group.*

*As scientific knowledge has rapidly expanded, the need for integrative and interdisciplinary thinking has become critical. As working biologists, however, the increasingly complexity and demands of our jobs has actually led to a narrowing of focus. AIBS is the ultimate interdisciplinary body that serves our interests, and it can achieve for us as a group, environmental and educational "big-picture" goals that as individuals we simply cannot. If elected, I would bring to AIBS, experience in several member societies, experience in serving as a book review editor for* BioScience *and thus familiarity with many of the broader needs of the organization, and finally, my very strong desire to work persistently and effectively on behalf of AIBS.*

## Candidates for AIBS Board Elected from the AIBS Council of Member Societies and Organizations

The four candidates are listed alphabetically. This election is under way with the Council through a separate online ballot.

### Charles Berry

Charles Berry is an adjunct professor in the Department of Wildlife and Fisheries Science at South Dakota State University, and leader of the South Dakota Cooperative Fish and Wildlife Research Unit (Biological Resources Discipline, US Geological Survey). He received degrees from Randolph-Macon College (BS, 1967), Fordham University (MS, 1970) and Virginia Polytechnic Institute and State University (PhD, 1975). He was the assistant leader of the Utah Cooperative Fisheries Research Unit (Utah State University, 1975–1985) before moving to South Dakota. He was recently recognized for 30 years of service in the Department of the Interior. His river research emphasizes fishes. He has super-

vised 40 graduate students and published 80 journal articles and several book chapters, and is editor of a new book on the history of fisheries and fishing in South Dakota. He is a Berg Fellow (Soil and Water Conservation Society) and serves all levels of the American Fisheries Society (AFS), including AIBS Council Representative (2001 to present). He has received the AFS Dakota Chapter Distinguished Service Award, and the education and communication awards from the South Dakota Wildlife Federation. He has served as an AIBS Board member (elected from Council) since 2005.

**Berry's statement:** *AIBS serves as a unified voice for biological science in many ways and in many venues. I fully support AIBS efforts to facilitate interdisciplinary communication, publish* BioScience*, offer a user friendly Web page (the AIBS Media Library is a great teaching tool), influence federal policy, improve education (*ActionBioscience.org *is a wonderful source), grow* BioOne *(Web access to bioscience research journals, most published by small societies and other not-for-profit publishers; offered free to scientists from poor countries), champion small science (student research) and big science (NEON), and organize other activities to promote biology. For example, I am excited about a new AIBS initiative to promote the 2009 program about public understanding of science. I have encouraged AIBS member societies and organizations to be involved in the year of science. There is much top-down action (e.g., National Academies of Science and other groups) on the Year of Science, and the thousands of subunits of AIBS member societies and organizations can be a great force with grassroots, bottom-up actions.*

*AIBS can act as biology's primary advocate and lobby group because AIBS delivers broad environmental and educational views that synthesize views of member societies. As advocates for biological sciences, AIBS must propose solutions to problems not just list the problems. AIBS has the power and influence to do just that! The need is great for biological information about contemporary issues, but in the last few years a different need has emerged—the need to remind the public and policy makers about the process of science (how we know what we know), and how science, especially biological science, benefits society (e.g., the recent AIBS annual meeting on evolutionary biology and human health).*

*It speaks well for AIBS that the number of societies and organizations under the AIBS umbrella has almost doubled to almost 200 organizations, and that the number of student chapters is increasing also. Now let us sustain AIBS and continue that dynamic growth. I think that AIBS is serving its constituency well, primarily because Officers and Board of Directors are a dedicated, innovative, hard-working group. The Public Policy Office staff knows the methods of the Federal City and is much involved in biology policy discussions. Our connections with secondary educators are extensive and innovative.*

*If elected, I will work with other Board members elected from Council to increase communication between member societies and AIBS. And, I would like to find ways to encourage information flow about "big biology" from AIBS Council members to their societies, which might increase support for AIBS and subscriptions to* BioScience*. I am working with my society (AFS) to be involved with the year of science in 2009 at the national, division and chapter levels. Perhaps such activities will result in emergent properties for the biological sciences.*

*If elected, I will be mindful that AIBS should honor our budget and undertake activities in which we excel. We should find ways to emphasize the services of biological infrastructure. We might form new coalitions to advance biological science—perhaps partnerships with the many corporations that depend on biological information? Let's keep* ActionBioscience.org *growing with millions of more "hits" on this bilingual science education Web site (and perhaps some fisheries information can be added soon).*

*Let's keep* BioOne *growing as a way to offer scientific information from our country to the world, and I like the discussions at* BioOne *about including the proceedings and journals of state academies of science. Regarding public policy, we must develop a cadre of professionals who are comfortable with science and policy interactions. I support the internships in the AIBS Public Policy Office, and would like to find a way to solidify that program for academic credit. Above all, AIBS must maintain the high quality of our "products" and endeavor to find ways to lead to a future where biological sciences are honored and respected.*

## Ellen J. Censky

Ellen Censky is director of the Sam Noble Oklahoma Museum of Natural History and professor of zoology at the University of Oklahoma. She received her PhD in biological sciences from the University of Pittsburgh in 1994. She currently oversees the programs (research and public) of one of the largest university-based natural history museums in the country. She has spent the last 30 years working in many capacities in natural history museums, both private (Carnegie Museum of Natural History), public (Milwaukee Public Museum), and university-based (University of Connecticut and University of Oklahoma).

Her research has focused on behavioral ecology (with emphasis on sexual selection) in reptiles as well as systematics and biogeography of amphibians and reptiles in Latin America and the Caribbean. Her research on over water dispersal of animals, published in *Nature,* was featured on the front page of the *New York Times* and in newspapers and radio programs around the world (including a spoof on the *Daily Show with Jon Stewart)*. In recent years, she has taken up a new cause—public education on the relevance and importance of biodiversity. She was on the ground floor of developing the BioBlitz and has successfully organized seven of them. One of them was featured on *National Geographic Explorer,* as well as on the NBC *Today* show and in newspapers across the country. Her guide "BioBlitz Organizational Guide" has been used by people around the world.

Her contributions to the professions include service as member of the Board of Trustees for the Herpetologists' League, member of the Board of Governors for the American Society of Ichthyologists and Herpetologists, member of the Board

of Directors for the Society for the Study of Amphibians and Reptiles, treasurer for The Herpetologists' League, Secretary for the Society for the Study of Amphibians and Reptiles, publications secretary for the Herpetologists' League, editorial committee member for *Journal of Herpetology,* editor for the geographic distribution section of *Herpetological Review,* Long Range Planning and Finance Committee for the Herpetologists' League, Finance Committee for the Society for the Preservation of Natural History Collections, Henry S. Fitch Student Award Committee, member of the International Biodiversity Observation Year committee, member of the Education Committee for the National Ecological Observatory Network Design Consortium, and Vice President of the Association of Science Museum Directors. She has also served as a consultant to the Ministry for Education and the Environment for the Government of Anguilla and as a consultant for the United Nations Development Programme's Environmental Education Program for Anguilla. She wrote the UNDP-sponsored Country Environmental Profile for Anguilla. She also served on the Amphibian and Reptile Technical Committee of the Pennsylvania Biological Survey, and the Herpetological Advisory Committee for the Pennsylvania Fish and Boat Commission.

**Censky's statement:** *During the course of my scientific career I have found myself becoming more and more stressed by the lack of understanding among the lay population (and politicians) of what science is and how it proceeds. This is at a time when it is crucial for individuals to understand science. The world has changed in such a way that it has become necessary for everyone to understand, at a minimum, how science proceeds so that they can make educated decisions in their daily lives. The most pressing problems that we now face are global problems and what the future holds in store for us depends on the wisdom with which individuals use science and technology. The decisions that individuals make in their daily lives are affecting not only that individual, but the entire planet and its species. That is why I am especially excited to be up for election during a time when AIBS has committed to building the Coalition on the Public Understanding of Science.*

*The American Institute of Biological Sciences has had a long history of bringing together scientists for the betterment of biology and for the betterment of society. There is no more urgent time for scientists to unite than this time when science, our science, is under attack—from misunderstanding and misinformation on such topics as evolution and stem cell research to mistrust and misrepresentation of scientists and their findings. AIBS has taken a leading role, uniting biologists to create a much louder voice than each individual alone could provide. With its focused mission on advancing biological science for the welfare of society and its vision to promote an understanding of the natural world to guide society in making decisions and solving problems, AIBS has positioned itself to be an active and effective advocate for the use of sound science in addressing the critical issues that we face today.*

*As I read through the goals that AIBS has set for itself, I was impressed with the clear goals and objectives that have been or are being advanced by AIBS—to facilitate communication and interaction, to serve as a national representative and forum for biology and biologists, and to enhance biological research, education and communication. These goals, especially those that relate to enhancing the public's ability to understand science and providing decision-makers with sound input, are goals that parallel my own personal agenda. Bertolt Brecht once said, "The aim of science is not to open the door to infinite wisdom, but to set the limit on infinite error." AIBS has clearly set its course to limit infinite error and I would be proud to serve this organization.*

## Laurence J. Dorr

Larry Dorr, associate curator in the Department of Botany at the National Museum of Natural History, Smithsonian Institution, received a BA in Earth and Planetary Sciences (1976) from Washington University in St. Louis, a MA (1980) in Botany from the University of North Carolina at Chapel Hill, and a PhD (1983) from the University of Texas at Austin. He is interested in the systematics of Malvales, the flora of the northern Andes, and the history of botanical exploration, especially that of the western Indian Ocean. Before joining the Smithsonian in 1991, he was responsible for setting up a program of research and exploration in Madagascar for the Missouri Botanical Garden (1983–1986), a lecturer in organismal biology at the University of Texas at Austin (1987), and he explored for plants in the northern Andes of South America for the New York Botanical Garden (1988–1991). He is the AIBS representative for the National Museum of Natural History (1998 to present) and the American Society of Plant Taxonomists (ASPT) (2001 to present). He has been editor of the *ASPT Newsletter* (1992–1996) and served or serves on the editorial boards of *Bio-Llania* (1997 to present), *BioScience* (1996–2002), *Brittonia* (1988–1992), *Flora Neotropica* (1997 to present), and *Taxon* (1989–1990). He has been or is a council member for the International Organization for Plant Information; member (1994 to present), Flora Neotropica Commission; member (1995–2005), Special Committee on Electronic Publishing and Databasing, International Association for Plant Taxonomy; Steering Committee (1996–1997), Federal Interagency Taxonomy Information System; and Commissioner (1996 to present), City of Falls Church Tree Commission, Virginia. Dorr has written or edited several books, including *Plant Collectors in Madagascar and the Comoro Islands* (Royal Botanic Gardens, Kew, 1997), and approximately 100 scientific papers.

**Dorr's statement:** *I have always been impressed by how much individuals or organizations can accomplish when they work together in concert. In this respect, the lead that AIBS has taken in promoting the biological sciences in the United States has been invaluable. Individually, our societies and other member organizations would be unable to devote the resources to monitor social and political impacts on the biological sciences and when necessary advocate (or react) on behalf of our collective interests. AIBS has*

*served us especially well in publishing* BioScience*, an important cross-disciplinary journal, promoting science education in all its myriad facets, and in monitoring the political scene especially that of the nation's capital.*

*As a member of the AIBS Board, I would focus on three issues. First, while I believe biology is, without question, the most exciting profession to have in the 21st century, I am concerned that we are not encouraging an interest in biology as a career option for as many students as we might nor are we adequately educating those who will choose other professions that impact biology. I am deeply troubled by trends in our society that seem to conspire against greater participation and even understanding of science. Cultural and political attitudes that dismiss evolutionary biology as a useful paradigm are worrisome. Cultural and political attitudes that prevent us from adequately funding research and training are a prescription for future disaster. Cultural and political attitudes that prevent full participation by minorities and create barriers to foreign student enrollments in American universities are not in our best long-term interests.*

*Second, I am concerned that the potential of collections-based research is not being fully realized. Apart from my graduate training and a brief stint as a lecturer I have spent my career working in botanical gardens and museums. In some respects, collections-based research has different needs than university-based laboratory research. It is troublesome that universities are abandoning their museum collections and even more troublesome that collections-based research is sometimes even within our own profession dismissed as antiquated. Collections-based research clearly has made important contributions to biodiversity, evolutionary theory, and climate change studies. I am confident that it will do more and if I am fortunate to serve on the AIBS board I will try to represent the needs of this portion of our larger community.*

*Finally, for much of my career I have been involved in what we might today glibly call the globalization of research. I became interested in tropical botany and have been fortunate to have been involved in multinational projects in Africa and South America. I am convinced that in the future just as organisms fail to be confined by political boundaries, the conduct of research will also be multinational and have little regard for artificial boundaries. We need to prepare ourselves and educate our leaders and politicians to this new reality. Too often decisions about funding are driven by narrow national concerns but issues relating to biodiversity and climate change especially, but almost every aspect of biology, can no longer be resolved by such a parochial approach.*

## David Goetze

For six years, David Goetze has served as the executive director of the Association for Politics and the Life Sciences. He also is the director of the War and Peace Center in the Political Science Department at Utah State University, where he served as graduate program director for 10 years. He also is director of the interdisciplinary Natural Resources and Environmental Policy Program at Utah State University. He is a former Fellow at Resources for the Future, has served as editor for *Research Papers,* the journal of the Human Rights and Conflict Prevention Center at the University of Bihac, Bosnia-Herzegovina, sits on its Science Council, and is a former associate editor of the *Journal of Politics.*

His scholarly focus has been on conflict and cooperation in human society. His early work examined how human communities could best organize and develop institutions for coping with environmental problems, especially problems that manifest collective action dilemmas sometimes referred to as prisoner's dilemmas, common pools, and dilemmas of public good provision. This work ranged from general analyses of hazardous waste disposal and water resource issues to specific analyses of decisionmaking within state air pollution control agencies, political decisionmaking along the Chesapeake Bay, and historic regulation of the Columbia River salmon fishery.

Later research examined the constraints and possibilities for human cooperation in laboratory settings that contrived collective action dilemmas. Despite the social science fashion of the time for seeking individualist, self-interested explanations of social behavior, the results of these experiments and those conducted by others confirmed a repertoire of behaviors that were in some circumstances cooperative and even sacrificial, while in other circumstances self-interested and conflictual.

In recent years, Goetze looked to the conflict side of the human repertoire and sought to understand the sources and triggers of human warfare. As a corollary, he asked why humans have such complex repertoires of both cooperative and conflictual behaviors. The biological and evolutionary sciences provided help. Part of the answer, it seems, lies in the human propensity, observed across time, to form large groups, sometimes numbering in the thousands or millions. Through these groups, humans clearly compete vigorously, if not violently, for the resources of the planet. What conditions could have made large-group formation adaptive for humans? Goetze reexamined W. D. Hamilton's formulation of the inclusive fitness concept and concluded that the availability of public goods (defined in the economics literature as goods that do not decline in quantity as people consume them and goods that people cannot easily be excluded from consuming, e.g., a nuclear defense shield) in early environments could have made formation of groups of many different sizes quite adaptive.

In his latest work, Goetze borrows from evolutionary psychology and cognitive sciences to construct and test a model of the triggers of group conflict. He speculates that it would have been adaptive for human groups to mobilize for warfare in the face of an assortment of exclusionary actions ranging from socioeconomic and political discrimination to ethnic-based murder.

**Goetze's statement:** *Intellectual "consilience" between the biological and social sciences appears likely in the years ahead. Evolutionary perspectives are making dramatic inroads in the paradigms used for research within anthropology, psychology, economics, political science, and other social sciences. Since 1980, a number of new associations have emerged*

*that are tied to the social sciences but demonstrate a commitment to biologically oriented evolutionary science. Included among them are the Human Behavior and Evolution Society, International Society for Bioeconomics, and my own Association for Politics and the Life Sciences which recently joined AIBS.*

*Perhaps the time is ripe for AIBS to foster further consilience between the biological and social sciences. AIBS could benefit in several ways: (1) bringing these biologically oriented social science societies under the AIBS tent would add numerical and political strength to AIBS endeavors; (2) the social sciences are crucial battlefields in the contest between scientific and antiscientific approaches to knowledge creation and could benefit from closer ties with AIBS and its concerted campaigns in support of science—in turn, AIBS effectiveness in promoting science perspectives could be enhanced through enlisting social science allies; (3) relatedly, promoting science perspectives in our public schools could be extended by using the connections that already exist between social science departments and public school education; (4) utilizing expertise in policy analysis and political influence that exists in social science fields, most notably in the political science field; and (5) furthering intellectual consilience between biological and social sciences through closer and more frequent interaction across the disciplines.*

*I urge AIBS to explore some practical steps to realize these benefits:*

*(1) Invite social science associations with biological or evolutionary orientations to join AIBS. A preliminary list of candidate societies might include: the Human Behavior and Evolution Society; the Evolutionary Anthropological Society; the International Society of Bioeconomics; the International Society for Human Ethology.*

*(2) Use COPUS and the Year of Science 2009 as an opportunity for promoting "science" approaches, methods, and understanding in social science subjects as well as in hard science subjects (the Association for Politics and the Life Sciences is signing on to be an active participant).*

*(3) Ask the editors of the journals of* BioScience *and* Politics and the Life Sciences *to consider how the two journals might benefit from cross-fertilization (the current editor in chief of* Politics and the Life Sciences*, Rob Sprinkle, recently published an article in* BioScience*).* BioScience *appears to have a strong commitment to publishing frontline biological research.* Politics and the Life Sciences *has a strong commitment to publishing ethical and policy analysis of biological issues as well as biological analysis of social behaviors. Perhaps they could jointly sponsor symposium issues or find other ways to utilize specialization in the pursuit of goals that, for the most part, are overlapping. Initiate similar discourse for other journals sponsored by AIBS associations. For example, the journal,* Evolution and Human Behavior *(sponsored by the Human Behavior and Evolution Society); might also find an exchange with* BioScience *to be useful as would journals that promote biological specialties. I would think that these sorts of activities would provide enormous service to member societies and their journals; help to enhance the preeminent role of* BioScience*; and further encourage intellectual interaction and consilience.*

*(4) Enhance exposure to the journals of our member societies through creative marketing approaches—perhaps a "smorgasbord" approach to the packaging of journals. Many of our journals are to be found in the two packages created by and promoted by* BioOne*. Why not ask* BioOne *to consider creating a multitude of overlapping packages, some organized by themes but also an all-inclusive package? This approach works well for cable companies and might very well enhance exposure for the journals of our member societies.*

*(5) Request each association to summarize the most recent and important accomplishments and breakthroughs in its respective field (perhaps over the previous year) and distribute the summaries to one and all.*

*Other practical steps are surely advisable and may prove more feasible and meaningful than those described above, but these are at least initial steps to consider.*

*In sum, I would work to fully support the principal objectives of AIBS: the creation and dissemination of knowledge through science, and encourage as a special initiative, the incorporation of biologically-oriented social science societies into the AIBS family.*

## AIBS Welcomes New Member, Society for Behavioral Neuroendocrinology

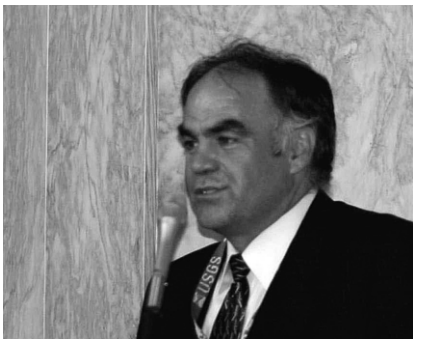
AIBS is pleased to announce that the Society for Behavioral Neuroendocrinology (SBN) has recently joined AIBS. The SBN is an interdisciplinary scientific organization dedicated to the study of hormonal processes and neuroendocrine systems that regulate behavior. This focus is unique among professional societies, thus SBN's annual meetings and its journal *Hormones and Behavior* provide vital forums for the integration of ideas across the field of behavioral neuroendocrinology. This integration occurs on multiple fronts and spans all levels of biological organization, from the molecular to the organismal. The SBN's approximately 600 members conduct research on myriad organisms across a diversity of contexts, including field-based investigations of animals in their natural habitats, laboratory research on important model systems, and clinical research on a variety of topics directly related to human health.

SBN president Emilie Rissman says the society's growth yields "new opportunities for interaction with other societies with similar interests, as well as with societies that are faced with similar challenges associated with an expanding membership," such as finding ways to boost member awareness and involvement with political issues and processes, to increase outreach to the general public about the social and medical impacts of their research, and to acquaint a diverse community of biologists with research in behavioral neuroendocrinology. Rissman adds, "As biologists, we believe that our association with AIBS [will] benefit our society as we grapple with these increasingly important issues."

For more information about the SBN and its mission, see *www.sbne.org.*

## USGS Coalition Holds Capitol Hill Reception

On 17 September, the United States Geological Survey (USGS) Coalition held its fourth annual Capitol Hill reception.



*Representative Ciro D. Rodriguez (left) and USGS Director Mark Myers address participants at the USGS Coalition reception. Photographs: Megan Kelhart.*

This event is an opportunity for supporters of the USGS, from government and from the scientific community, to recognize the important research conducted by the USGS. As the science agency for the Department of the Interior, USGS has personnel in nearly 400 offices in every state. Increasingly, the USGS is working at the forefront of interdisciplinary research, and to this end, the agency maintains partnerships with more than 2000 federal, state, local, and private agencies.

This year more than 150 people from Congress, executive branch departments, and nongovernmental organizations attended the reception. Among members of Congress who attended the event were Representative John T. Salazar (D–CO) and Representative Ciro D. Rodriguez (D–TX), both of whom spoke briefly to reception participants.

Now an anticipated fall event, the USGS Coalition Capitol Hill Reception was initiated four years ago as part of the coalition's efforts to raise congressional awareness of the important research conducted by USGS scientists, and as a way to recognize the many existing congressional champions for the USGS.

The USGS Coalition is an alliance of 70 organizations united by a commitment to the continued vitality of the unique combination of biological, geological, hydrological, and mapping programs of the USGS. The USGS provides independent, high-quality data, information, research support, and assessments that are needed by federal, state, local, and tribal policymakers; resource and emergency managers; engineers and planners; and researchers, educators, and the public. The coalition supports increased federal investment in USGS programs that underpin responsible natural resource stewardship, improve resilience to natural and human-induced hazards, and contribute to the long-term health, security, and prosperity of the nation.

AIBS was a founding member of the USGS Coalition, which now includes more than a dozen AIBS member societies and organizations. The coalition is cochaired by AIBS and the Geological Society of America. Coalition activities and initiatives are the result of the staff efforts of the various participating organizations. Policy staff members from the Crop, Soil, and Agronomy Societies planned the 2007 congressional reception. For more information or to learn how to join the USGS Coalition, please contact Robert Gropp by phone (202-628-1500, ext. 250) or Craig Schiffries by e-mail (cschiffries@geosociety.org).

## AERC, with Support from AIBS Public Policy Office, Sponsors Bioenergy Briefing on Capitol Hill

Concerns about energy security and climate change have motivated the public and private sectors to make or pledge to make significant investments in bioenergy research. Most of the recent national discussion of renewable or sustainable energy has focused on the development of biofuels.

On 27 September, ecosystem researchers went to Capitol Hill to give members of Congress and their staffs, as well as other Washington, DC, public policy experts, a science briefing called "Ecosystem Science: Informing a Sound Bioenergy Policy." The briefing, sponsored by the Association of Ecosystem Research Centers (AERC), an AIBS member society, was held in conjunction with the annual AERC science symposium.

The researchers discussed the impacts of bioenergy crop cultivation on basic ecosystem services—wildlife habitat, soil conservation, and water quality, for example—and the environmental and economic challenges associated with energy crops.

The briefing participants and the titles of their presentations are as follows:

- Robin Graham, Oak Ridge National Laboratory, "Considering the Ecosystem Sustainability of Bioenergy Feedstocks: A Primer on the Issues"
- Carl C. Trettin, Center for Forested Wetlands Research, "Effects of Woody Biofuel Production on Water Resources"
- Jane M. F. Johnson, North Central Soil Conservation Research Laboratory, "Balancing Biomass for Bioenergy and Conserving the Soil Resource"
- JoAnn Hanowski, University of Minnesota–Duluth Natural Resources Research Institute, "Planning for the Expansion of Biomass Production in the Midwest: Remaining Wildlife Neutral"
- Stephen Polasky, University of Minnesota Department of Applied Economics, "Bioeconomics of Biofuels: Environmental and Economic Consequences of Shifting towards Renewable Biomass for Energy"

## An Update on NEON Membership

To date, 36 universities and research institutions have been accepted as founding members of the National Ecological Observatory Network (NEON), and 4 as institutional members.

The voting representative and chief research officer for founding members and institutional members are both eligible to attend the annual meeting of NEON, Inc. In addition, through their voting representative, a founding or institutional member may elect members

from a slate of representatives put forward by the Governance and Nominating Committee of the board to serve on the Board of Directors. This election will take place soon.

"The most immediate activity of these members will be to help us choose additional members for our Board of Directors," said NEON Board Chair James A. MacMahon. "Nearly half of all board members will be elected from the representatives of membership institutions. This expansion of the board will occur before December 2007."

The application deadline for founding members is 1 November 2007. Prospective institutional members are welcome to apply at any time. For the latest listing of NEON members, visit *www.neoninc.org*.

## NEON Project Office Adds Expertise

The National Ecological Observatory Network is pleased to announce three key additions to its project office team: Christopher Winslow, chief financial officer; Eyvette Wright, procurement manager; and Robin Martin, director of human resources.

**Chief Financial Officer** Christopher J. Winslow is a senior finance and operations executive who has successfully led commercial and government contractor organizations with domestic and international operations, clients, and partners. His professional expertise includes mergers and acquisitions, business and strategic planning, board service, and financial and program reporting.

Winslow most recently served as vice president for finance, accounting, and administration at FutureGen Industrial Alliance, Inc. There, he established the entire infrastructure for a global organization—including its financial and human-resource systems, benefits plan, policies and procedures, and bank and investor relationships—and financed the construction of a power plant. As executive vice president, chief operating officer (COO), and chief financial officer for FPMI, a firm that offers a variety of human capital services, he developed and executed a successful strategic business and cost-restructuring plan, and led the integration of four companies in separate locations into a single, high-performing organization. Among other leadership positions, Winslow has served as senior vice president and COO at Vistronix, Inc.; vice president of professional services and consulting at Primus Telecommunications; and vice president of finance and treasurer at the MITRE Corporation.

**NEON Procurement Manager** Eyvette L. Wright previously served as subcontracts manager for Lockheed Martin Information Technology, where she worked with suppliers and internal management in all aspects of subcontract management and received two outstanding performance awards. Her focus included initial proposal and award, contract setup, funding and financial management, contract briefs, and all forms of compliance issues.

In her role as contracts manager for Qwest Government Services, Inc., from 2004 to 2006, Wright managed more than 2000 annual requests for quotes and proposal submissions to the federal government. She served as the key liaison between the federal proposal group and the contracts and legal organization. In that capacity, she was responsible for ensuring that bids were compliant with corporate policy and federal law, and for resolving all compliance issues under applicable regulations that guide federal acquisitions. Wright holds an associate degree in business administration and a BA in business administration with a minor in human resources, with honors, both from American InterContinental University. She earned her master's certification in federal contracting from George Washington University.

**Director of Human Resources** Robin Martin is a senior resources leader in both for-profit and nonprofit sectors, with experience in all human resources functions, including recruitment, staffing, benefits design and administration, compensation, employee relations, organizational development, and immigration. In her most recent position as human resources manager for the Howard Hughes Medical Institute, she developed, managed, and led the human resources function, strategy, and activity for a new start-up research facility.

In her previous position as human resources generalist at HHMI, she managed projects and assignments related to the administration of the institute's policies. Her focus included job evaluations, analysis of external market and salary survey data and trends, and internal pay structure and compensation plans. As regional administrative manager for Ernst and Young, LLP, Martin oversaw a range of administrative and human resources–related activities for more than 200 administrative employees in the mid-Atlantic region. Martin earned a BA in rhetoric and communications studies from the University of Virginia, and is both a certified compensation professional and a certified benefits professional. In addition, she has completed continuing education courses in total quality management and value selling, as well as quality customer service (Disney Institute).

## Executive Director's Recent Blog Entries Online at *http://blogs.aibs.org/richardogrady*

- A hard-won victory for science education in Louisiana
- Student survey for science and technology policy guide
- The power of We, 60 years on
- ED/CEO blogging as a leadership tool
- COPUS reaches 100 participating organizations

## Recent Articles Online at *www.actionbioscience.org*

### Original article in English

- "Pygmy Rabbits in Peril: Challenges in Conserving Species," by Lisa Shipley, associate professor in the Department of Natural Resource Sciences at Washington State University

### Spanish translation of a previously posted article

- "¿Por qué Necesitamos a un Arca para Anfibios?" [Why Do We Need an Amphibian Ark?], by Kevin Zippel, program officer for Amphibian Ark

## Recent AIBS Education Reports Online at *www.aibs.org*

- Speakers confirmed for NABT symposium "Evolution: Applications in Human Health and Populations"
- First student chapter newsletter issued
- Science and Engineering Alliance presents to DIBS
- COPUS membership surpasses 100 participating organizations
- The nation's 2007 report card shows gains
- Back to school: Five myths about girls and science
- No Child Left Behind bus tour
- Senior Urban Education Research Fellowship
- 2008 Prudential Spirit of Community Awards upcoming conferences and event

## Recent Public Policy Reports Online at *www.aibs.org*

### Public Policy Report for 15 October 2007

- Feds consider security at US bio labs
- NSB rolls out STEM education action plan
- New law forgives some student loan debt for no-profit workers
- New in *BioScience:* "Government Looks into Health of Federal Science Collections"
- From the *Federal Register*
- Science policy survey for youth voters

### Public Policy Report for 1 October 2007

- Ecosystem researchers discuss bioenergy on Capitol Hill
- NRC reports on the role of theory in biology
- Is it time for a creationsim museum in Wisconsin?
- Expelled producers dishonest on draft strategic plan
- Endangered species get a tax break
- Education releases latest assessment of math and reading performance

### Public Policy Report for 17 September 2007

- Reports question federal management of climate change
- Appropriations update
- Census Bureau launches new S&E workforce database
- Court rejects creationist lawsuit, again
- Report calls for Great Lakes clean-up
- From the *Federal Register*

American Institute of Biological Sciences