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Student Conference Showcases Research

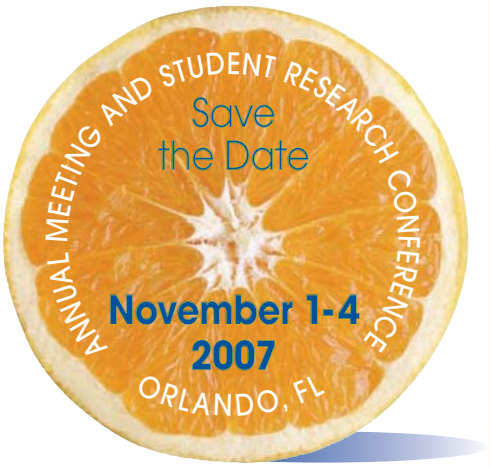
"I was glad to have an opportunity to present my research to a wide audience and found the entire experience to be very beneficial to my development as a scientist."

That is a typical testimonial from a participant in the annual Sigma Xi Student Research Conference, to be held this year in Orlando, Florida, November 2-3.

"This is primarily an undergraduate conference," says organizer Kevin Bowen. "But as space allows, a limited number of submissions will be accepted from high school students who have a university faculty member as their primary research advisor and from first year graduate students who are continuing research begun as undergraduates."

Online registration and abstract submission begin August 1. Sigma Xi members attending the Society's annual meeting, held in conjunction with the student conference, may also present scientific posters on their research.

In addition to a research competition, the two-day student conference features a variety of networking and career advancement opportunities. Participants also have a chance to hear talks by leading scientists and engineers, including Sigma Xi award winners. Visit www.sigmaxi.org for details.



From the President

A Strong Voice for Science

In this, my first message as Sigma Xi president, I'd like to introduce myself by saying that I consider myself to be an activist and advocate for science.

The May-June issue of *American Scientist* included the Executive Summary of the Sigma Xi report *Confronting Climate Change*, the product of deliberations by a distinguished international scientific panel convened at the invitation of the United Nations. The group was asked specifically to recommend strategies for mitigating and adapting to climate change.

While individually we might not all agree with every detail of the report, and the few skeptics among us may even take exception to its basic premise, I wholeheartedly embrace the report and Sigma Xi's willingness to articulate a scientific perspective on global challenges. I am pleased to see the Society weighing in on climate change issues. Some letters in response to the report appear in this issue of *Sigma Xi Today*.

Because solutions to global environmental problems must be based on facts, scientists must be part of these discussions. We gather data and report information based on a relatively unambiguous set of rules governing the ethical conduct of science. Politics is messier. Even though solutions to global challenges are often political, they are far too important to be left exclusively to politicians. By emphasizing what we do best, Sigma Xi members can dispel myths. We can elevate the debate and require that environmental policies be based on facts. Despite its marginalization in certain places, there is little doubt that science has actually become more important in defining national policies, not less.

To make matters worse, U.S. science education is also at risk. The assault on what may or may not be taught in schools and what may or may not be printed in textbooks strikes at the heart of the next generation's ability to lead in an increasingly technological and global society. Sigma Xi members should be viewed as leaders in promoting quality science education. A sustainable future means having a future. Sigma Xi should be a strong voice for promoting the welfare and wellbeing of science teachers everywhere.

Integrity and honesty are the hallmarks of science. It's how we tell fact from fiction. Sigma Xi members have a societal role to play in reminding the public that facts matter. The right to vote is touted as the core freedom of a democracy. Actually, it is the right to know. When the line between science fact and science fiction is intentionally blurred, we do not have a democracy. The issues are serious; Sigma Xi's response should be too.

James W. Porter

James W. Porter is Josiah Meigs Professor of Ecology at the University of Georgia and has also served as curator of invertebrates for the Georgia Museum of Natural History. His discovery of a fecal coliform bacterium as the causal agent of coral disease in the Florida Keys influenced the upgrade of wastewater treatment facilities throughout the Keys. In 2005, he received the Ecological Society of America's Eugene P. Odum Award. Porter has been a member of Sigma Xi since 1972.

Russell Mittermeier to Receive McGovern Award

Russell Mittermeier, president of Conservation International (CI) in Arlington, Virginia, will receive Sigma Xi's John P. McGovern Science and Society Award and deliver the McGovern Award Address at the Society's 2007 Annual Meeting and Student Research Conference in Orlando November 1-4.

The McGovern Award has been presented annually since 1984 and consists of a medal and a $5,000 honorarium. The John P. McGovern Foundation recently donated more than $32,000 to bring the award's endowment up to $150,000 and make it self-sustaining.

Mittermeier is a prominent primatologist, herpetologist and wildlife conservationist with 37 years of field experience in Central and South America, Africa and Asia. Having served as CI's president since 1989, he is the only active field biologist to head an international conservation organization.

His fieldwork has been on primates, protected areas and other conservation issues in Brazil, Suriname, Madagascar and more than 20 other countries. His areas of expertise include biological diversity and its value to humanity, tropical biology and species conservation. Mittermeier has written 15 books, including the trilogy *Megadiversity*, *Hotspots* and *Wilderness*, and more 500 papers and popular articles on primates, reptiles, tropical forests and biodiversity.

He has served as chairman of the International Union for Conservation of Nature's Species Survival Commission's Primate Specialist Group since 1977. He has been an adjunct professor at the State University of New York at Stony Brook since 1978 and president of the Margot Marsh Biodiversity Foundation since 1996. Prior to coming to CI, he was with the World Wildlife Fund-U.S. for 11 years, where his last role was as vice president for science.

His work has been recognized by a number of institutions and national governments. His many awards include the Order of the Golden Ark from His Royal Highness Prince Bernhard of the Netherlands (1995), the Grand Order of the Southern Cross from the President of Brazil (1997), and the Grand Sash and Order of the Yellow Star from the President of Suriname (1998), the San Diego Zoo Gold Medal (1987) and the Aldo Leopold Prize of the American Society of Mammalogists (2006).

In 1998, he was one of *Time* magazine's "EcoHeroes for the Planet." He graduated from Dartmouth College in 1971, and received his Ph.D. in Biological Anthropology from Harvard University in 1977.

Award Nominations Due October 1

Know an outstanding scientist or engineer whom Sigma Xi should honor? The Society's prestigious annual awards recognize excellence in research and communication. The nominations deadline is October 1. Visit www.sigmaxi.org for guidelines, past recipients and other details.

William Procter Prize

Presented annually since 1950, the William Procter Prize for Scientific Achievement honors important contributions to research and the ability to communicate complex ideas to others. Past recipients include Philip Morrison, Edward O. Wilson and Jane Goodall.

John P. McGovern Award

Since 1984, the McGovern Award has honored those who have made outstanding contributions to science and society. Past recipients include Sylvia Earle, David Suzuki and Mario Molina.

Walston Chubb Award

The annual Chubb Award was first presented in 2006. It honors and promotes creativity among scientists and engineers.

Young Investigator Award

Honoring researchers early in their careers, this award alternates between the physical sciences and engineering, including mathematics, and the life and social sciences.

Honorary Membership

Honorary membership is bestowed on those not otherwise eligible for membership in Sigma Xi, who have served science, or the Society, in a manner or to a degree that merits such recognition.

Letters on the Sigma Xi Climate Change Report

Global Warming Dogma

To the Editor:

Strange that in the same issue where our executive director, Philip Carter, called attention to the difference between knowledge and belief and cited the role of science in making the distinction, our president, Jim Baur, called our attention to the establishment of a catechism for the dogma of global warming. According to our president, the principal force for codification comes from "most climate scientists, governmental organizations, environmental policy groups and the general public." That should do it.

While mitigation seems in order, most measures that our panel recommends, on realistic assessment, are inordinately expensive and would thoroughly disrupt existing industry. Their recommendations include such dubious suggestions as depending heavily on biofuels and removing carbon dioxide from coal-fired power plant effluent.

The ideas sound attractive and are obviously easy to sell, but comprehensive overall balances show them to be highly impractical. The high cost to humanity of the proposed very inefficient and likely ineffective use of world resources for mitigation is treated with simple denial, cloaked impressively by theatrical gesticulation.

Marvin E. Whatley, Oriental, NC

The Weight of Numbers

To the Editor:

This report fails on two counts. First, no attempt is made to demonstrate that if every one of the mitigations and adaptations described were adopted they would collectively come anywhere near yielding the desired goal.

Second, the report mentions human population growth only as factor to be accommodated rather than something to be dealt with directly. The words "family planning" never appear in the report, yet this is the one management strategy that attacks the climate change problem at its source.

Haydon Rochester, Jr., Onancock, VA

The Nuclear Option

To the Editor:

I was very disappointed in the Executive Summary of *Confronting Climate Change*. It did not even mention nuclear power as a player in reducing world-wide CO_2 emissions, while proposing solar, biofuel, wind and other low-yield and controversial power sources.

The complete report gave nuclear power very short shrift. The major problem with nuclear power seems to be in selling it to the public as a safe and effective approach to reducing global warming, so let's get at fixing that problem, as France and others have.

Richard C. Gibson, Surry, ME

Taking a Longer View

To the Editor:

Confronting Climate Change is astonishing because it contains not a single comment about known large climate changes. There is not a single word about anything before 1750. Are the people who wrote it ignorant of 10°C temperature shifts and 400-foot sea level shifts, or did they simply ignore them?

These caused no known increase in extinctions, and three of them provide a suitable test for extrapolations into the future. The "Younger Dryas" exceeded in magnitude even extreme claims for change to come in this century, and were not caused by people burning fossil fuels.

Lucian B. Platt, Rosemont, PA

Report co-chair Dr. Peter Raven responds:

All environmental problems are based on population, consumption and the choices of particular technologies. We must both address these problems and attempt to deal with their effects.

Nuclear energy could contribute to the world energy budget effectively if we had a plan for disposing of waste, could keep the plants safe from terrorists, separate weapons technology from energy production and safeguard nuclear plants during war, since the devastation caused by exploding them would be unthinkable.

These are serious problems that must be solved before we would regard the deployment of nuclear power as a strategy of choice.

Visit www.sigmaxi.org for the full report Confronting Climate Change.

Former CERN research director Roger Cashmore spoke on "CERN and the Conundrum of the Mass in the Universe" for a special program at the Sigma Xi Center this spring. A Fellow of the Royal Society and member of Sigma Xi, he is the principal of Brasenose College at the University of Oxford, England. Shown (left to right) are Roger Cashmore and Ann Lindsay-Cashmore, with Sigma Xi Executive Director Philip B. Carter.

Sigma Xi Members Elected to National Academy of Sciences

Twenty-seven Sigma Xi members were among 72 new members and 18 foreign associates from 12 countries elected this spring to the National Academy of Sciences.

Mario H. Acuna, senior astrophysicist and project scientist, International Solar Terrestrial Physics Program, NASA Goddard Space Flight Center, Greenbelt, Maryland.

Steven M. Block, professor of applied physical and biological sciences, Stanford University, Stanford, California.

Hugo K. Dooner, professor, Waksman Institute, Rutgers, The State University of New Jersey, Piscataway.

Bruce T. Draine, professor, department of astrophysical sciences, Princeton University, Princeton, New Jersey.

Robert S. Edgar, professor emeritus, University of California, Santa Cruz.

Kerry A. Emanuel, Breene M. Kerr Professor, program in atmospheres, oceans and climate, department of earth, atmospheric and planetary sciences, Massachusetts Institute of Technology, Cambridge.

Mary K. Estes, professor and Cullen Foundation Endowed Chair, department of molecular virology and microbiology, Baylor College of Medicine, Houston.

Paul G. Falkowski, professor, Institute of Marine and Coastal Sciences and department of geological sciences, Rutgers, The State University of New Jersey, New Brunswick.

Michael D. Fayer, David Mulvane Ehrsam and Edward Curtis Franklin Professor of Chemistry, department of chemistry, Stanford University, Stanford, California.

Allen M. Goldman, Institute of Technology Professor of Physics, and head, School of Physics and Astronomy, University of Minnesota, Minneapolis.

John G. Hildebrand, Regents Professor and professor of neurobiology, biochemistry and molecular biophysics, entomology and molecular and cellular biology, and director, Arizona Research Laboratories Division of Neurobiology, University of Arizona, Tucson.

William L. Johnson, Ruben and Donna Mettler Professor of Materials Science, Engineering and Applied Science, California Institute of Technology, Pasadena.

Laura L. Kiessling, professor of chemistry and biochemistry, University of Wisconsin, Madison.

Stephen C. Kowalczykowski, distinguished professor of microbiology and of molecular and cellular biology, and director, Center for Genetics and Development, University of California, Davis.

Claude Owen Lovejoy, university professor, Kent State University, Kent, Ohio.

Walter F. O. Marasas, director, Programme on Mycotoxins and Experimental Carcinogenesis Unit, Medical Research Council, Tygerberg, South Africa.

Christopher Miller, investigator, Howard Hughes Medical Institute, and professor, Brandeis University, Waltham, Massachusetts.

William E. Moerner, Harry S. Mosher Professor, Stanford University, Stanford, California.

M. Granger Morgan, university professor and head, department of engineering and public policy, Carnegie Mellon University, Pittsburgh.

Stephen W. Pacala, Frederick D. Petrie Professor, department of ecology and evolutionary biology, Princeton University, Princeton, New Jersey.

Jonathan G. Seidman, Henrietta B. and Frederick H. Bugher Professor of Cardiovascular Genetics, Harvard Medical School, Boston.

Charles S. Spencer, curator of anthropology, and chair, division of anthropology, American Museum of Natural History, New York City.

David N. Spergel, professor, department of astrophysical sciences, Princeton University, Princeton, New Jersey.

Katepalli R. Sreenivasan, Martin Professor of Engineering and distinguished university professor, University of Maryland, College Park.

Harold M. Stark, professor of mathematics, University of California, San Diego.

Clifford J. Tabin, professor, department of genetics, Harvard Medical School, Boston.

Clifford M. Will, James S. McDonnell Professor of Physics, Washington University, St. Louis.

Evan Ferguson Succumbs to Cancer

As the magazine was going to press, we received the sad news that retired Deputy Executive Director Evan Ferguson had lost his hard-fought battle with lymphoma. He died on May 24 at his home near Siler City, North Carolina. Known as Mr. Sigma Xi, he was widely recognized for his commitment and dedication to Sigma Xi traditions and mission.

In his 24 years on the staff, his combination of perspective and good nature was a mainstay for members, staff and the Society as a whole. He retired in 2006. If you would like to contribute to a Grant-in-Aid of Research in memory of Dr. Ferguson, please contact the director of development at 800-243-6534, extension 210, for further details or write to P. O. Box 13975, Research Triangle Park, NC 27709-3975.