

Annual Conference Highlights Student Research Posters

The 2010 Sigma Xi International Research Conference in Raleigh, North Carolina, November 12-13 will bring together undergraduate and graduate students as well as professional scientists from North America and abroad for a celebration of research accomplishments.

Held each year in conjunction with the Society's Annual Meeting, the conference features a research poster competition, networking activities, panel discussions and other events.

Visit www.sigmaxi.org for conference registration, abstract submission guidelines and other details.

This year, a special poster session will be held on Food Safety and Security: Science and Policy, for which the abstract deadline is September 24. A three-day symposium will be held on the topic. The deadline for student and member poster abstracts on other research topics is October 15.

Poster presentations are accepted as space permits, so register and submit abstracts as early as possible.

Sigma Xi members attending the Annual Meeting serve as judges for the student research poster competition, which awards commemorative medals for outstanding presentations. Members may also present their own research in a professional poster session.

Conference participants will have a chance to hear talks by leading scientists and engineers, including Sigma Xi award winners.

These include Procter Prize-winning cognitive scientist **Michael J. Spivey** at the University of California, Merced; McGovern Award recipient **Barbara Gastel** at Texas A&M University, who specializes in biomedical writing and editing; and Chubb Award winner **Howard R. Moskowitz**, a well-known experimental psychologist in the field of psychophysics and an inventor of world-class market research technology.

Young Investigator Award winner **Kevin R. Gurney** will also talk about his groundbreaking work on tracking carbon dioxide emissions. He is associate director of Purdue University's Climate Change Research Center. •

From the President

A New Vision



Sigma Xi has a stellar history of service to its members and stakeholders. Likewise, many individuals of note have served the organization well, and much has been accomplished in recent years to bring stability to Sigma Xi through prudent resource management. In this regard, Past President Howard Ceri, Executive Director Jerry Baker and the Board of Directors must be commended for their outstanding leadership. We are also grateful to all our members who continue to contribute to the Society's viability. However, we must remain cognizant of existing challenges and rededicate ourselves to the ongoing renaissance of Sigma Xi.

The overall merit of Sigma Xi membership must be re-established so that its value is clear. In so doing, we will ensure our goals and objectives transcend current needs and continue to serve the next generation of leaders in Science and Technology (S&T). Moreover, our engagement with the broader scientific community should begin with strategic partnerships and collaborations. To this end, we must address whether we have risen to a level of appropriate relevance to remain 'value-added' leaders in recognizing and promoting scientific excellence, integrity, literacy and policy. We must recapture our position of prominence as leaders in support of the science and engineering enterprise while building our capacity to be responsive to the growing needs of the S & T workforce and environment.

Our fiscal performance and business practices over the past few years suggest that we must resist the business-as-usual mindset. Instead, our approach should enable effective work across the spectrum of science to enhance communication and engagement among our members and with the general public. Each of our members must rise to the challenge of promoting the merits of Sigma Xi, while providing a voice for science on relevant societal issues. We must also contribute to increasing public appreciation for the role that research plays in advancing the human condition.

How do we restructure the new Sigma Xi? Clearly, we must initiate debate on meaningful and innovative ways to advance Sigma Xi's mission and effect a turnaround in membership and fiscal sustainability. We are challenged to re-envision the Society's added value to its members, the global scientific enterprise, and the general public. Therefore, Sigma Xi must afford all members the opportunity to help chart its future. Together, we must create a new vision as we attempt to promote the Society's re-growth into a vibrant, sustainable organization. We need a new direction, with clear, achievable goals and plans on exactly how to accomplish them.

Clearly, the year ahead will be challenging. However, our team of elected officers, the executive director and headquarters staff are looking forward to working with each of you. We aim to remain attuned and responsive to all member needs. The new approach will require everyone's input as we move to expand the visibility and reach of Sigma Xi. The format of the 2010 Annual Meeting and International Research Conference, set for November 11-14 in Raleigh, North Carolina, reflects one level of engagement with the broader scientific community. While the main focus will be on food safety and security, there will be many opportunities for attendees to participate on different levels.

I invite all Sigma Xi stakeholders to contribute their best thinking, time and available resources to this transformative effort as we reposition into a vibrant and globally-valued scientific organization. We must recapture and elevate Sigma Xi's status in the scientific community, nationally and internationally. Everyone can make a difference. However, we can only be leaders if we are in front, so I challenge all Sigma Xi members to step forward and join us for the move into the future.

Joseph A. Whittaker

Kevin Gurney Named Sigma Xi Young Investigator

Kevin Gurney, whose work on tracking CO₂ emissions has been groundbreaking, will receive Sigma Xi's 2010 Young Investigator Award.

Gurney is an associate professor in the Department of Earth and Atmospheric Science at Purdue University, where he is also associate director of the Climate Change Research Center.

His work focuses on the global carbon cycle, understanding sinks for atmospheric CO₂, how CO₂ changes connect to



climate change and how to connect good climate science to development of sound public policy.

He was the lead author on a 2002 publication in *Nature*

addressing CO₂ inversions. It is listed in the top 1 percent of *Nature* papers. He received a grant from NASA to build a CO₂ emissions inventory for the U.S. and led a project to create a high-resolution, interactive map of U.S. carbon dioxide emissions from fossil fuels.

The maps and system, called Vulcan, show CO₂ emissions at more than 100 times more detail than was available before. The model examines CO₂ emissions at local levels on an hourly basis.

Gurney has worked extensively with NGOs and with United Nations' negotiators. He received B.A. and M.P.P. degrees from the University of California, Berkeley, and an M.S. degree from the Massachusetts Institute of Technology.

He earned a Ph.D. in ecology from Colorado State University. A member of

Sigma Xi, he also belongs to the American Geophysical Union, Phi Kappa Phi and the Ecological Society of America. He is the co-author of *Mending the Ozone Hole: Science, Technology and Policy* (MIT Press, 1995).

Sigma Xi's annual Young Investigator Award recognizes excellence in research and includes a certificate of recognition and a \$5,000 honorarium. Any active (dues-paying) member of Sigma Xi within 10 years of his or her highest earned degree at the time of nomination is eligible.

The award alternates between the physical sciences and engineering, including mathematics, and the life and social sciences. The nomination deadline for this and other Sigma Xi awards is October 1 annually. •



Sigma Xi Center Hosts Ethics Summit on Authorship Issues

Sigma Xi invited a group of advisors to meet here in June to discuss ethical issues related to peer review and authorship.

Insights shared at that summit, as well as the attendees' ongoing advice, will help shape Sigma Xi's proposed new ethics training initiatives.

In particular, the Society is interested in developing a new guidebook on ethical publication practices to complement its highly successful *Honor in Science* (1984) and *The Responsible Researcher: Paths and Pitfalls* (1999).

The advisors discussed ways that the Society might approach such a booklet. One possibility includes chapter-based surveys and focus groups that would gather new data about the standards of peer review and authorship in different countries and disciplines. The points of consensus and disagreement could form the basis of new educational materials.

Other ideas included assembling an international summit of professional society leaders to develop a code of ethics for scientific publication, and creating a checklist that would help scientists and engineers explore authorship questions at the beginning of research collaborations. Such a checklist could help avoid authorship disputes, particularly among international or

interdisciplinary collaborators who may have differing assumptions about the credits and responsibilities of authorship.

Summit attendees also brought up key and emerging issues in scientific publication—including the increasingly interdisciplinary nature of science, online data publication, the need to train young researchers in peer review and the importance of discussing authorship early in any collaboration.

Sigma Xi will continue to work with this group of advisors to develop a specific plan and proposal for funding the new program. Summit participants included:

John F. Ahearn, executive director emeritus, Sigma Xi; emeritus director, Sigma Xi Ethics program; author of *The Responsible Researcher: Paths and Pitfalls*.

Jerome F. Baker, executive director, Sigma Xi.

Stephanie Bird, consultant, editor of *Science and Engineering Ethics* and former Sigma Xi Ethics Committee member.

Thomas F. Budinger, professor emeritus, College of Engineering, University of California, Berkeley; Home Secretary, National Academy of Engineering.

Julia Frugoli, associate professor, Department of Genetics and Biochemistry, Clemson University; has helped plan programs for the Association for Practical and Professional Ethics.

Nancy L. Jones, contractor, National Institute of Allergy and Infectious Diseases; adjunct associate professor of public health sciences, Wake Forest University School of Medicine; working on unified code of ethics for science.

Dena Plemmons, research ethicist, Research Ethics Program, University of California, San Diego; working on initiatives to promote ethical and responsible conduct in research and scholarship.

David B. Resnik, bioethicist at the National Institute of Environmental Health Sciences; has published on alternative systems for allocating credit for scientific work.

Juliet P. Shaffer, senior lecturer emerita, Department of Statistics, University of California, Berkeley; psychological and educational measurement.

Fred Spilhaus, executive director emeritus, American Geophysical Union; editor of geophysical journals; and chair of Sigma Xi's Publications Committee.

Daniel A. Vallero, adjunct professor of engineering ethics, Department of Civil and Environmental Engineering, Pratt School of Engineering, Duke University.

Daniel R. Vasgird, director, Research Compliance Service, University of Nebraska; author of the review and authorship unit of Columbia University's online ethics course. •