

# Sigma Xi Today

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## David Sington Elected Honorary Member

British television science writer and producer David Sington will be inducted as an honorary life member of Sigma Xi at the Society's annual meeting in November.

Sington is perhaps best known for his eight-part series "Earth Story," a co-production of the BBC and The Learning Channel, which aired in 1998 in the United Kingdom and the United States. The series was filmed around the world over a 30-month period, exploring the fundamental processes that shape the earth and how they interact.

An introductory program focused on the concept of geologic time and how geologists read rocks to uncover the past. Four programs then explored the earth's rocky material: plate tectonics, mantle convection and the behavior of the crust. Three final episodes examined the relationship between these processes and climate and evolution, including a comparison of Earth with Venus and Mars.

Sington has been making science programs, first for radio and later TV, since 1983. He studied natural

science at Trinity College, Cambridge, graduating in 1981. Among his previous films are "Traces of Guilt," about science in the fight against crime; "The Man Who Made Up his Mind," on Gerald Edelman's theory of the brain; and "The Man Who Moved the Mountains," about a New Zealand geologist who revolutionized our understanding of earthquakes.

A companion book to the TV series, *Earth Story: The Shaping of our World*, by Sington with Simon Lamb, was published by BBC Books and became a *Sunday Times* best-seller in the U.K. It was published in the U.S. by Princeton University Press. Sington's other honors include the American Geophysical Union's 1999 Walter Sullivan Award for Excellence in Science Journalism.

Since 1983, honorary Sigma Xi membership has been conferred by the Board of Directors on distinguished individuals 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.

## Grants Deadline is October 15

October 15 is the deadline for fall Grants-in-Aid of Research (GIAR) applications. The next GIAR deadline after that is March 15.

Since 1922, Sigma Xi Grants-in-Aid of Research have represented an investment in the future of science by helping to advance the careers of more than 25,000 young scientists and engineers. Research awards of up to \$1,000 (the average award is \$600) are made to support research in any field. Some special funds allow higher awards in specific areas of research.

In astronomy and eye or vision research, National Academy of Sciences grant funds administered by Sigma Xi allow for awards up to \$2,500. In the field of plasma research, the Sigma Xi-Consortium for Plasma Research Fund allows for awards of \$5,000 to graduate/medical students and postdoctoral professionals whose work involves advancing the safety of the world's blood supply.

For application forms, complete guidelines and more information, call 800-243-6534 or visit the "Programs" section on Sigma Xi's Web site at <[www.sigmaxi.org](http://www.sigmaxi.org)>.

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## Chemist Sherry Yennello Wins 2000 Young Investigator Award



Nuclear chemist Sherry J. Yennello, an associate professor at Texas A&M University, has been selected to receive Sigma Xi's 2000 Young Investigator Award in the physical sciences.

The annual award, which includes a certificate of recognition and \$5,000, alternates between the physical sciences, including mathematics and engineering, and the life sciences, including social sciences. Any active (dues-paying) member of Sigma Xi within 10 years of his/her highest earned degree at the time of nomination is eligible.

Yennello, 35, received two B.S. degrees in physics and chemistry from Rensselaer Polytechnic Institute and a Ph.D. in nuclear chemistry from Indiana University. Her thesis research and related work led to significant new information on nuclear reaction mechanisms.

Before joining the faculty of Texas A&M, she held a postdoctoral position at the National Superconducting Cyclotron Laboratory at Michigan State University. She holds a joint appointment at Texas A&M in the department of chemistry and the Cyclotron Institute.

Her work relates directly to fundamental questions about the evolution of the universe, the nature of neutron stars and supernovae, the origins of heavy elements and the thermodynamic nature of nuclear

matter. She has more than 70 publications in journals, 30 published conference proceedings and 75 published abstracts, plus she has given 35 invited talks around the world.

"Sherry has established herself as an important contributor in this area," Cyclotron Institute Director J.B. Natowitz said in his nomination letter. "Her work on isospin effects on the equation of state is very highly regarded. She is also participating in studies for a powerful new national radioactive beam facility... It is viewed as the next major development in this area of nuclear science. Sherry is already a recognized expert and pioneer in the area of research envisioned for such a machine and can be expected to be a major player if that facility is approved."

Yennello is the recipient of the GE Foundation Faculty for the Future Award, the National Science Foundation Young Investigator Award and the Felix Hauowitz Award for Excellence in Research. She has also been named a TAMU Center for Teaching Excellence Scholar.

In the classroom, she has emphasized technology enhanced education with introduction of a computer-assisted personalized assignment system for homework and the development of dynamic visualization modules to illustrate difficult concepts in class.

In addition to her research and teaching, Yennello serves on committees and is engaged in other outreach activities that enhance the teaching experience at Texas A&M. She has participated, organized and guided several events for women and minorities in science and engineering and for youth interested in science and engineering, as well as events on how to teach and the utilization of technology in teaching.

In addition to the prize winner, five outstanding researchers were selected this year to receive regional Sigma Xi Young Investigator Awards in the physical sciences and engineering.

### Mid-Atlantic

**Kristian P. Helmerson**, an atomic physicist at the National Institute of Standards and Technology, has led an "optical tweezers" project that uses focused laser beams to trap and manipulate small dielectric objects, investigates biosensor applications and fundamental adhesion processes in biological systems.

### North Central

**Rex D. Ramsier**, a physicist at the University of Akron, has focused on the fundamental science of interactions on surfaces and interfaces. He has gained important insights regarding the dynamics, structure and thermal behavior of atoms and molecules on highly ordered as well as amorphous surfaces.

### Northeast

**Metin Akay**, a biomedical engineer at Dartmouth College, has been widely recognized for outstanding contributions in the detection of coronary artery disease, in understanding early human development and leadership and contributions in biomedical engineering education.

### Southeast

**Rigoberto Hernandez**, a theoretical chemist at the Georgia Institute of Technology, has focused on understanding the theoretical chemistry of the polymerization process in heterogeneous environments. He is also known for his innovative use of computers in the classroom.

### Northwest

**Courtney A. Young**, a metallurgical engineer at Montana Tech of the University of Montana, has been researching a variety of subjects of environmental significance, particularly cyanide and acid-rock drainage. His major contributions have led to an improved understanding of the influence of ultraviolet radiation on these systems.

2000 Sigma Xi Forum November 9-10, 2000 • Hyatt Regency, Albuquerque, NM

## New Ethical Challenges in Science and Technology

In conjunction with the Sigma Xi Annual Meeting November 10-12, 2000

For forum program updates and registration information, visit the Sigma Xi site on the Web at <[www.sigmaxi.org](http://www.sigmaxi.org)>.

Through a series of plenary addresses and breakout group sessions, the 2000 Sigma Xi Forum will revisit some topics from the 1993 Forum *Ethics, Values, and the Promise of Science* – such as conflicts of interest – and will also address issues that were just beginning to surface then.

For example, the proliferation of university/industrial partnerships has added new complexities that are testing outmoded definitions of ethical conduct. The ownership of intellectual property has become a more contentious issue. In some cases, industrial research funding now comes with strings attached, such as the right to review research papers prior to publication. Overriding all issues is that of mentoring: what practices are being taught to tomorrow's scientists and engineers?

These and other ethical issues will be addressed at Sigma Xi's two-day forum *New Ethical Challenges in Science and Technology*, which will be held November 9-10, 2000, in Albuquerque, New Mexico. The forum is expected to draw several hundred participants from academia, government and industry.

Plenary addresses as well as breakout group conclusions and recommendations will be published in the proceedings of the conference in the spring of 2001. Plans include development of materials for dissemination through a series of workshops hosted by Sigma Xi chapters. This will be part of an ongoing programmatic effort on ethics in research under the auspices of the Sigma Xi Center.

The conference will provide an opportunity for further distribution and discussion of Sigma Xi's new booklet, *The Responsible Researcher:*



*Paths and Pitfalls*, an updated look at ethical issues in science and technology that was designed as a companion volume to the widely circulated Sigma Xi booklet of guidelines for young scientists, *Honor in Science*.

To be held in conjunction with the Society's annual meeting November 10-12 in Albuquerque, the 2000 Sigma Xi Forum is part of an ongoing series of national and international conferences focusing on important issues at the intersection of science and society.

### Plenary Addresses

#### AN ENGINEERING PERSPECTIVE

**William Wulf**, President, National Academy of Engineering

#### A NATURAL SCIENCE PERSPECTIVE

**Robert C. Dynes**, Chancellor and Professor of Physics, University of California at San Diego

#### ETHICS IN MEDICAL RESEARCH

**Arthur Rubenstein**, Dean and Chief Executive Officer, Mt. Sinai School of Medicine

#### ON BEING A SCIENTIST: THE YEAR 2000

**Francisco J. Ayala**, Donald Bren Professor of Biological Sciences, University of California at Irvine

#### McGOVERN SCIENCE & SOCIETY LECTURE

**David L. Goodstein**, Vice Provost and Professor of Physics and Applied Physics, California Institute of Technology

### Forum Breakout Sessions

#### TEACHING ETHICS

Led by **Vivian Weil**, Director of the Center for Study of Ethics in the Professions, Illinois Institute of Technology, with panelists **Judith P. Swazey**, President, The Acadia Institute, and **Stephanie J. Bird**, Special Assistant, Office of the Provost, Massachusetts Institute of Technology

#### INTELLECTUAL FREEDOM AND THE NATIONAL LABORATORIES

Led by **John C. Browne**, Director, Los Alamos National Laboratory

#### OVERSIGHT OF RESEARCH STAFF BY THE PRINCIPAL INVESTIGATOR

Led by **David C. Clark**, Director, Research Affairs, Rush-Presbyterian St. Luke's Medical Center

#### RESPONSIBILITIES OF RESEARCHERS TO SOCIETY

Led by **Robert J. Eagan**, Vice President of Energy and Critical Infrastructure, Sandia National Laboratories, with panelist **Robert A. Frosch**, John F. Kennedy School of Government, Harvard University

#### THE NEW FEDERAL RESEARCH MISCONDUCT POLICY

Led by **Sybil Francis**, Senior Policy Analyst, Office of Science and Technology Policy, with panelists

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## Students Win Sigma Xi Awards at International Science Fair

Seven high school students received Sigma Xi awards during the Intel International Science and Engineering Fair in Detroit this year, which drew more than 1,200 students from the U.S. and 40 countries. Sigma Xi President Peggie Hollingsworth presented the awards. Shown with her on the first row are Beeneet Kothari and Joakim Vinberg, both of Manhasset Senior High School in Manhasset, New York. On the second row, left to right, are Joseph Pechter and William Pechter of Saint Edwards Upper School in Vero Beach, Florida, along with Thomas Kollar, Benjamin Oyler and Jeremy Stovall, all of Knoxville Catholic High School in Knoxville, Tennessee.

## Sigma Xi Surveys Members through [survey@sigmaxi.org](mailto:survey@sigmaxi.org)

Sigma Xi periodically surveys its membership to gauge the science community's perspectives on key issues. With more than half of its membership accessible by e-mail, Sigma Xi is experimenting with a variety of options for Internet-based surveys. Sigma Xi is testing a software program which uses e-mail to distribute surveys to members, receive members' responses, compile results and calculate statistics. Furthermore, future Web-based surveys are being developed to be accessible on the Society's secure Web site <[www.sigmaxi.org](http://www.sigmaxi.org)>.

The future success of these surveys depends on the ability to communicate with the membership reliably, so please make sure your contact information is up-to-date in Sigma Xi's member database. You can check and update these data online or by telephone at (800) 243-6534.

The most recent experimental survey was e-mailed in July to members in Alaska and Delaware as part of a pilot project for the Society's science advocacy program (<[www.sigmaxi.org/advocacy](http://www.sigmaxi.org/advocacy)>). For this survey, Sigma Xi allied with Research!America (<[www.researchamerica.org](http://www.researchamerica.org)>), a non-profit advocacy group for science research that has been polling the general public through random sampling over the past 10 years. The two organizations have embarked on this initiative to enable comparison of survey response data of scientists and engineers with that of the general public. This comparison will help identify issues of concern between both groups as well as issues where scientists' perspectives are very different from those of the general public.

Individual survey responses will remain confidential, while aggregated, post-survey results will be used in reports to the membership. Additional statistics from this survey will also be vital in establishing whether or not the e-mail responses represent an unbiased sampling of membership.

## Forum 2000

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**Peggy L. Fischer**, Associate Inspector General for Scientific Integrity, National Science Foundation, **William J. Valdez**, Director-Office of Planning and Analysis, DOE-Office of Science, and **Chris Pascal**, Director, Office of Research Integrity

### FUTURE PROBLEMS FACING SCIENCE

Led by **Erling A. Anderson**, Associate Professor, University of Iowa

### EDUCATIONAL RESOURCES TO INCREASE ETHICAL AWARENESS FOR SCIENTISTS AND ENGINEERS

Led by **John P. Perhonis**, Program Officer, National Science Foundation with panelists **John L. Fodor**, Executive Director, Educational Media Resources, Inc., and **P. Aarne Vesilind**, R.L. Rooke Professor of Engineering, Bucknell University

### SOME NEW WRINKLES ON FACULTY CONFLICTS OF INTEREST IN RESEARCH

Led by **Paul A. Fleury**, Dean of Engineering, University of New Mexico, with panelist **Kumar Patel**, Professor of Physics and Astronomy, University of California at Los Angeles

### INTERGENERATIONAL ETHICS

Led by **John H. Gibbons**, Senior Fellow, National Academy of Engineering

### BEYOND ADVERSARIAL ETHICS: WEB RESOURCES FOR SOLVING PROBLEMS ABOUT RESEARCH CONDUCT

Led by **Caroline A. Whitbeck**, Elmer G. Beamer-Hubert H. Schneider University Professor in Ethics and Director, Online Ethics Center for Engineering & Science, Case Western Reserve University, with panelists **Elysa Koppelman**, Special Consultant for Research Ethics, Case Western Reserve University, and **Michael S. Pritchard**, Willard A. Brown Professor of Philosophy; Director, Center for the Study of Ethics in Society; and Associate Dean, The Graduate College, Western Michigan University