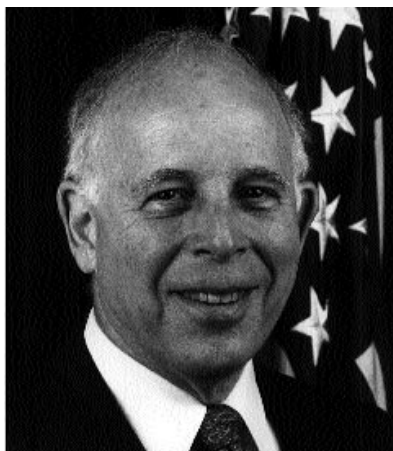


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John Gibbons Elected Society President



Former presidential science advisor John H. (Jack) Gibbons was elected president of Sigma Xi at the annual meeting in November. His one-year presidency will begin July 1, 2000.

"I believe Sigma Xi must look first to its traditional strengths," Gibbons said, "in honoring scientific achievement, in promoting research integrity and education in science and engineering, fostering a public understanding of science, and in plotting a dedicated course for supporting the 'grass-roots' needs of the membership and the local chapters in fulfilling the Society's mission."

Gibbons served as assistant to the president for science and technology and director of the White House Office of Science and Technology Policy from 1993-98. He is an internationally recognized scientist who has demonstrated a deep interest and concern about the support of science and the impact of technology on society.

Following his formal training in physics, he spent 15 years at Oak Ridge National Laboratory, where he studied the structure of atomic nuclei. Beginning in 1970, he pioneered studies on how to use technology to con-

serve energy and minimize the environmental impacts of energy production and consumption.

His many publications cover such topics as nuclear physics, resource management and environmental policy. His most recent book is *This Gifted Age: Science and Technology at the Millennium*.

In 1973, at the start of a national energy crisis, Gibbons was appointed the first director of the Federal Office of Energy Conservation. Two years later he became director of the University of Tennessee Energy, Environment and Resources Center. In 1979, he returned to Washington to direct the Congressional Office of Technology Assessment.

A Fellow of the American Physical Society and the American Association for the Advancement of Science, Gibbons is a member of the National Academy of Engineering. His honors include Sigma Xi's 1997 John P. McGovern Science and Society Award, the Federation of American Scientists Public Service Award and the Leo Szilard Award for Physics in the Public Interest from the American Physical Society.

Gibbons was elected to Sigma Xi by the Duke University Chapter and remains affiliated with the University of Tennessee Chapter. He served as a Sigma Xi Distinguished Lecturer in 1979-80 and was a plenary speaker at the 1991 Sigma Xi Forum *Global Change and the Human Prospect*.

Gibbons will succeed Peggie J. Hollingsworth as president of the Society. Her term begins in July, following the completion of John H. Moore's presidency. Hollingsworth is a pharmacologist and toxicologist at the University of Michigan, and Moore is president of Grove City College.

Directors Elected at Annual Meeting

Two directors-at-large and four regional directors were elected at the 1998 Annual Meeting in Vancouver in November. The directors-at-large, who will serve three-year terms beginning July 1, 1999, are Geraldine Twitty, of the Howard University Chapter, and Robert Zand, of the University of Michigan Chapter. Zand was reelected to the board.

The following were elected regional directors, all of whom will serve three-year terms beginning July 1. Mid-Atlantic: Richard LoPinto, Fairleigh Dickinson University Chapter. Northeast: Christopher Lange, SUNY Health Science Center at Brooklyn Chapter. Northwest: Howard Ceri, University of Calgary Chapter. Southeast: Arthur M. Geller, University of Tennessee, Memphis Chapter.

The following were elected for three-year terms, beginning November 15, 1998, as regional members of the Committee on Nominations. North Central: Charles B. Smith, University of Michigan Chapter. Northwest: Richard Schwenz, University of Northern Colorado Chapter. Southeast: C. W. Comer, University of Florida Chapter. Southwest: Harjit S. Ahluwalia, University of New Mexico Chapter.

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Ten Members Win National Medals

Eight Sigma Xi members were awarded the National Medal of Science and two received the National Medal of Technology in ceremonies at the White House in December.

The National Medal of Science honors outstanding contributions to knowledge in the physical, biological, mathematical or engineering sciences. The National Medal of Technology recognizes American innovators whose work has made profound and lasting contributions to the nation's economy and quality of life.

Medal of Science winners included Sigma Xi members Bruce Ames, Janet Rowley, Don Anderson, John Bahcall, John Cahn, Cathleen Morawetz, Eli Ruckenstein and George Whitesides. Sigma Xi members Ernest Jaworski and Stephen Rogers received the National Medal of Technology.

Ames is director of the National Institute of Environmental Health Sciences at the University of California at Berkeley. He developed the Ames Test, which allows scientists to test chemicals to see whether they cause mutations in bacteria and perhaps cancer in humans.

Rowley, of the University of Chicago, helped discover changes to chromosomes caused by cancer and chemotherapy. She was the recipient of Sigma Xi's 1989 William Procter Prize for Scientific Achievement.

Anderson is a professor of geophysics at the California Institute of Technology. He is an internationally renowned expert on the composition, structure and dynamics of the Earth and Earth-like planets.

Bahcall, a physicist at the Institute for Advanced Study, is a leader in neutrino astrophysics and helped develop the orbiting Hubble Space Telescope.

A leading materials scientist at the National Institute of Standards and Technology, Cahn is most widely known for his elegant theories of how

materials transform from one phase to another. These theories have been used by researchers in fields ranging from materials science to astronomy.

Morawetz, of New York University's Courant Institute of Mathematical Sciences, is a pioneer in partial differential equations and wave propagation applications for aerodynamics, acoustics and optics.

A chemical engineer at the State University of New York in Buffalo, Ruckenstein is an expert in colloidal and surface phenomena, catalysts and advanced materials.

Whitesides is a Harvard University chemist, who won "for his innovative and far-ranging research in chemistry, biology, biochemistry and materials science that has brought breakthroughs to transition metal chemistry, heterogeneous reactions, organic surface chemistry and enzyme-mediated synthesis."

Medal of Technology winners Jaworski and Rogers both work for Monsanto in St. Louis and were recognized for their pioneering achievements, with colleagues Robert Fraley and Robert Horsch, in plant biology and agricultural biotechnology, and for global leadership in the development and commercialization of genetically modified crops to enhance agricultural productivity.

The National Medal of Science, established by Congress in 1959 as a presidential award, has recognized 362 of America's leading scientists and engineers whose work has had an impact on the present state of physical, chemical, biological, mathematical, engineering, behavioral or social sciences.

The National Medal of Technology was established by Congress in 1980 as part of the Stevenson-Wydler Technology Act as a presidential award and has recognized 108 individuals and eight companies whose accomplishments have generated jobs and created a better standard of living.

Ohio State Chapter Holds Centennial Celebration

In November, the Ohio State University Chapter celebrated its centennial with a banquet at the faculty club, co-sponsored by The Ohio State University Office of Research and Forum of Interdisciplinary Research Center Directors.

The keynote address was delivered by new Ohio State President William E. Kirwan, formerly president of the University of Maryland at College Park, who was a plenary speaker at the 1994 Sigma Xi Forum in Atlanta on K-12 science education standards. Sigma Xi Executive Director Peter D. Blair also gave a talk at the Ohio State centennial celebration on "Sigma Xi in the New Millennium."

The program included initiation of four full members and 32 associate members, plus recognition of research award winners. Jeffrey M. Reuter, chapter president, gave welcoming remarks. There were nearly 100 attendees, including many of the chapter's past presidents, Frank C. Croxton among them. He was Society president in 1971-72.

Chartered on June 1, 1898, the Ohio State Chapter was officially installed that December and hosted the national meeting of Sigma Xi in Columbus the following year. It is the eighth oldest chapter and one of the largest. Its approximately 700 members include researchers from educational institutions and other organizations such as Battelle Memorial Institute and Ross Products.

In 1994 the chapter received a Certificate of Excellence for exemplary programs and activities in support of Sigma Xi's mission. The Ohio State Chapter's activities include a lecture series, graduate and undergraduate student awards, Grants-in-Aid of Research, science fair sponsorships and high school science teacher support.

Lecture Subsidy, Research Grant Deadlines Near

Two important deadlines are fast approaching. March 1 is the deadline for Sigma Xi chapters to apply for subsidies to help sponsor visiting lecturers. Also, the deadline for spring Grants-in-Aid of Research (GIAR) applications is March 15. The next GIAR deadline after that is October 15.

For more than 60 years, Sigma Xi's Distinguished Lectureship Program has provided the opportunity for chapters to host visits from outstanding researchers at the leading edge of science. Profiles on the 27 Distinguished Lecturers for 1999-2000 appeared in the November-December issue of *American Scientist* and also are on the Sigma Xi Web site.

Sigma Xi provides modest subsidies for chapters in need of financial assistance to host a visiting lecturer.

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 young scientists and engineers. Research awards of up to \$1,000 (the average award is \$600) are made to support scientific investigation 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 new Sigma Xi Consortium for Plasma Research Fund allows for awards of \$5,000 to graduate/medical students and post-doctoral professionals whose work involves advancing the safety of the world's blood supply by inactivating non-enveloped viruses and prions in human blood.

For application forms or more information, call 800-243-6534, or visit the "Programs" section of the Sigma Xi site at <www.sigmaxi.org>.

1999 Forum To Showcase Innovative Undergraduate Science Education

Undergraduate education reform will be the focus of the 1999 Sigma Xi Forum, to be held in Minneapolis, Minnesota, November 4-5 in conjunction with Sigma Xi's annual meeting. Tentatively titled *Reshaping Undergraduate Science and Engineering Education: Tools for Better Learning*, this will be an interactive conference where educators and administrators from academia and industry can experience innovative science instruction, experiment with state-of-the-art educational products and discuss a variety of models for institutional reform, science curriculum and pedagogy with their developers.

The forum Steering Committee, chaired by Sigma Xi President-elect Peggie Hollingsworth, includes experts in undergraduate education, administrators from institutions that are undergoing reform initiatives and practitioners who are currently employing innovative techniques in the classroom. The Steering Committee guided the development of a program that is described in detail on the Sigma Xi Web site, <www.sigmaxi.org>. The Web site will also include a call for presentations, registration information, and instructions for joining an online discussion group on the topic of the forum.

The goal of the meeting will be to employ principles of interactive learning while exploring issues and methods associated with educational reform throughout the world and to

initiate an interdisciplinary discussion of science education reform by the professional societies. Much of the program will highlight hands-on, facilitated demonstrations of best practices, opportunities to explore the latest technological tools for education, small-group discussions and problem-solving sessions.

Working groups will address various challenges of implementing change at an institutional level and will feature moderators including educators, researchers and administrators who have catalyzed or facilitated change in institutions of various types, from four-year colleges to major research universities. Small-group discussions will explore themes and ideas that are put forward in the National Science Foundation (NSF) report, *Shaping the Future: New Expectations for Undergraduate Education In Science, Mathematics, Engineering, and Technology*. These include: fostering administrative and cultural changes in academic communities, developing curricula and departmental goals that encourage science learning for all students, using pedagogy that encourages inquiry-based learning and critical thinking, and forming partnerships with business, industry and other academic and non-profit institutions to catalyze institution-wide reform.

In addition to Sigma Xi chapter representatives, the forum is expected to attract participants from colleges, universities and other institutions from around the country.

Publication Catalog

Numerous publications can be purchased from Sigma Xi, including conference proceedings and *Honor in Science*, the popular guide to ethical standards in research. A complete list of these publications and other items, such as jewelry and T-shirts, will be included in the membership kits sent to all members as they renew in the coming year. In the meantime, more information is available on the Sigma Xi Web site at <www.sigmaxi.org> or by calling the administrative office at 800-243-6534.

Report Highlights Sigma Xi Activities

Highlights of Sigma Xi awards, programs and events for fiscal year 1998 are included in excerpts from the Society's annual report, posted on the Web at <www.sigmaxi.org>.

"The annual report gives a good programmatic overview of Sigma Xi, which underscores what a valuable resource the Society is for the research community," according to J. Renee Keever, director of development and communications.

A special feature of the 1998 report is a brief essay by 1996-98 President Robert A. Frosch that draws on recent talks by distinguished past-presidents of Sigma Xi to provide context on current issues in science. A former vice president of research at General Motors and former NASA administrator, Frosch is a senior research fellow at Harvard University's John F. Kennedy School of Government.

Included in the essay are remarks by Nobel laureate Frederick Robbins, National Medal of Science recipient C. Kumar N. Patel, Polytechnic University Chancellor George Bugliarello, White House Office of Science and Technology Director Neal F. Lane and National Science Foundation Director Rita R. Colwell.

President-elect Nominations Due

The nominations deadline is April 1 for Sigma Xi president-elect. The Committee on Nominations will select at least two nominees for consideration by the November 1999 Assembly of Delegates. The new president-elect will assume office on July 1, 2000, and will become Society president the following year.

Sigma Xi members are urged to submit names of nominees to the Committee on Nominations. Nomination forms are available by calling 800-243-6534, by e-mailing cte-nominations@sigmaxi.org.

Delegates Vote to Reduce Board Size

At the November annual meeting, Sigma Xi delegates overwhelmingly approved reducing the size of the Board of Directors over the next few years to 16 members, nearly one-half its current size, and to have all directors elected by delegates or members. The vote on these governance changes came after a process of deliberation over nearly two years by the Executive Committee and board, with input from the Sigma Xi community.

When completed, the new 16-member board will be comprised of the four officers, six directors elected by chapters grouped according to geographic region (one per region), six directors elected by chapters of the newly-instituted constituency groups based on the type of institution (one per group) and the executive director as an ex officio member without vote. Geographic regions and constituency groups will be able to elect associate directors to assist the directors and attend, and vote, at board meetings in the absence of the director.

The chairs of standing committees and the six directors-at-large will no longer be members of the board. The

newly-established constituency groups will include:

- Four constituency groups (with one elected director each) for chapters in the United States and its territories, based on the type of institution hosting the chapter.
- A Canadian/International constituency group for chapters outside the United States and its territories.
- A constituency group representing members-at-large.

All directors will be elected by delegates or members. The director for the membership-at-large will be elected popularly by the members-at-large (i.e., those members not currently affiliated with a local chapter), while the remaining 15 directors will be elected by the delegates designated by chapters to the annual meeting.

A complete summary of these Society governance changes, an implementation timetable and answers to Frequently Asked Questions are available on Sigma Xi's Web site at <www.sigmaxi.org>.

Young Investigator Award Nomination Deadline is June 1

Nominations for Sigma Xi's 2000 Young Investigator Award in the physical sciences, which includes engineering and mathematics, are due by June 1. This award recognizes the accomplishments of researchers early in their careers as well as an ability to communicate the importance of their work to the general public. The winner receives a certificate of recognition and \$5,000.

To be presented annually, the award alternates between the physical sciences and the life sciences, including social sciences. The first Sigma Xi Young Investigator Award went last year to John D. Gillaspay, a physicist at the National Institute of Standards and Technology.

Prospective recipients must be within 10 years of their highest earned degree at the time of nomination, and both the nominee and nominator must be active Sigma Xi members. A nominating statement and three letters of recommendation are required and should be forwarded to the Committee on Awards at the Society's administrative offices. For more information, consult the "Programs" section at <www.sigmaxi.org>.