

Sigma Xi Today

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Peter Raven Elected Sigma Xi President

Noted botanist and environmentalist Peter H. Raven was elected president of Sigma Xi in November at the Society's 102 Assembly of Delegates. He will serve as president-elect in 2002 and succeed Frank Gilmore as president in July 2003.

Raven is director of the Missouri Botanical Garden and Engelmann Professor of Botany at Washington University in St. Louis, a position he has held for more than three decades. He has been a member of Sigma Xi for 45 years.

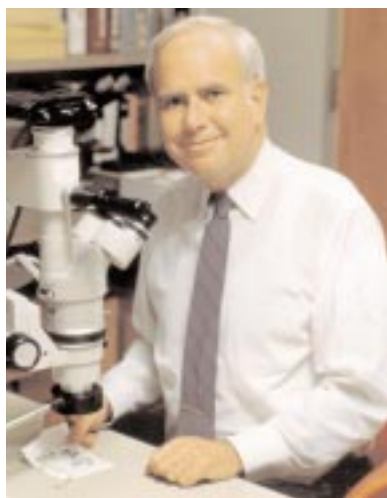
A native Californian, Raven is currently president of the American Association for the Advancement of Science. Last year he received the National Medal of Science for his contributions to the fields of biodiversity and the environment.

A member of the National Academy of Sciences and former NAS home secretary, he chairs the National Research Council's Division of Earth and Life Sciences.

While at Stanford University in the early 1960s, he and Paul Ehrlich developed the theory of coevolution, which was originally based on the relationship between butterflies and plants. This concept has been a highly fruitful one, inspiring many thousands of subsequent papers and becoming a Citation Classic.

Raven is a co-founder of the Flora of China project, an effort to produce a descriptive encyclopedia of the 30,000 different plants there.

His role as a leading environmentalist and global team builder has brought him membership in the national academies of many countries. His many honors include the International Prize in Biology from



Peter H. Raven

the government of Japan and the Volvo Environment Prize.

"I have occasionally participated in local and national Sigma Xi meetings and witnessed firsthand the enthusiasm that pervades the chapters and their importance in supporting excellence in science," Raven said.

"At the same time, the outreach programs of the Society have been influential in molding public attitudes toward science," he continued, "As president, I will attempt to strengthen what I believe to be a healthy trend to empower and encourage local chapters, which play such a key role in so many diverse settings in promoting science at many levels."

Raven said the international nature of science is also important. "As the world strives to achieve a sustainable use of its resources, science has a key role to play. In the current century, we must find new ways of doing things that will be sustainable and support future generations for the indefinite future."

Sigma Xi Forum Showcases Science & Arts

The 2001 Sigma Xi Forum *Science, the Arts and the Humanities: Connections and Collisions* offered a lively mix of performances, exhibits, demonstrations, talks and panel discussions by more than 50 scientists, artists and writers from around the country.

Held in Raleigh, North Carolina, in conjunction with the Society's Annual Meeting, the forum featured a keynote address titled "A New Trivium and Quadrivium" by George Bugliarello, chancellor and former president of Polytechnic University.

Eight forum plenary presentations and a dozen concurrent sessions covered a wide range of topics. Special events included the play *Oxygen* by renowned chemists Carl Djerassi and Roald Hoffmann as well as a performance by teenage violin prodigy Shunsuke Sato that was part of a talk on the art and science of violinmaking.

A sampling of presentations and images from the two-day conference is being assembled at <www.sigmaxi.org>. This online proceedings is a work in progress. Visitors are urged to return periodically for updates.

I N S I D E

Communicating Science	102
Chapter Diversity Awards	103
Certificates of Excellence	104
Grants Deadline March 15	104

Effective Approaches for Communicating Science to the Public



Mark W. Seeley

Many Sigma Xi members and chapters are interested in better communicating science and research to the public. Two chapters have taken different but effective approaches to achieve that goal.

The University of Minnesota Chapter has twice given awards to effective science communicators. The *Minneapolis Star Tribune* is one of the primary sources of science news in the region, and the chapter acknowledged reporter Jim Dawson's skill in explaining science in a way that the public can understand.

Dawson has covered a wide variety of topics: ice on the moon, the search

for extraterrestrial life and comets; forensic meteorology, global climate change; evolution and biotechnology.

The second winner was Mark W. Seeley, a professor and extension climatologist at the University of Minnesota who teaches a popular evening class in continuing education to working adults and teachers on "Understanding Weather and Climate."

His extension programs include weekly agricultural weather advisories, weekly commentaries for Minnesota Public Radio and MNONLINE Web Sites, and management of the Agricultural Weather Network.

Award nominations were solicited from the chapter membership, and each winner was honored at the chapter banquet with a plaque and given an opportunity to talk about their work.

The Georgia Southern University Chapter recognized that the media play a major role in deciding what information the public receives. As one chapter member expressed it, "The response by the public to this information (science news) feeds back to scientists through governmental and private agencies, shaping in part the direction of future research endeavors."

With that in mind, the chapter organized a forum that featured a panel of print, radio and television journalists and researchers. Through point/counterpoint and case studies, the journalists and scientists discussed how they could better work together to get accurate, understandable information to the public.

This format helped to illustrate the entire process from scientific inquiry to media exposure and feedback. After the media forum, both researchers and journalists had a better understanding of the issues each face, including: press deadlines and the general education level of the public, the length of time scientific research takes and why some researchers are hesitant to talk with the press.

Forum topics included:

- How does a scientist receive or solicit media coverage?
- How should a scientist prepare for a newspaper, radio or TV interview?
- How can a scientist ensure accuracy in reporting?

For more information on these programs, please e-mail Lisa Rhoades at lrhoades@sigmaxi.org or 800-243-6534, ext. 204.



During a recent trip to attend the Third World Academy of Sciences (TWAS) meeting held in Italy this past September, Christine Piggee, Sigma Xi's International Program Coordinator, had the opportunity to meet with members in Athens, Munich, Paris and Prague. Information was presented about the Packard International Science Networking Initiative, and discussions were centered on how Sigma Xi might engage more European members and be a useful tool for them in promoting the research enterprise. She also met with potential collaborators at the World Health Organization (WHO) and the United Nations Educational, Scientific and Cultural Organization (UNESCO). Shown here with Christine are (left to right) Andrew Hardie and Peter Pechan, both from the Prague Chapter.

Chapter Diversity Awards Recognize Wide Range of Activities

The Sigma Xi Committee on Diversity established a new chapter award this year to recognize special efforts and achievements in the area of diversity. The annual award will highlight strong chapter-based diversity programs and will provide a mechanism for disseminating program information to other chapters. Ten chapters were nominated this year, and three were singled out for the new award. All 10 chapters were recognized for their efforts at the 2001 Annual Meeting in Raleigh.

Academy of Natural Sciences

Women in Natural Sciences, one of the Academy's longest running programs, brings young minority women to the Academy in Philadelphia for a weekly program designed to encourage them to pursue science. Sigma Xi members provide tours and also present lectures.

A second program, called Science Enrichment Expansion Curriculum, serves minority students who come from disadvantaged backgrounds. The students work in laboratories with scientist mentors, almost all of whom are Sigma Xi members. A program guidebook, called *Inspiring Future Scientists*, is available on the Web at <www.acnatsci.org>.

Chapter members also serve as mentors in the summer Research Experiences for Undergraduates program, funded by the National Science Foundation.

California State University Dominguez Hills

The CSUDH Chapter sponsors numerous seminars throughout the year in conjunction with the National Institutes of Health Minority Biomedical Research Support Research Initiative for Scientific Enhancement Program and Minority Access to Research Careers Undergraduate Student Training in Academic Research, among others. More than 70 minority science students attend these seminars.

In addition to sponsoring student research awards, the chapter invites a minority scientist as the guest speaker for its annual awards banquet. The chapter is also a co-sponsor of the university's Students Trained in Academic Research (STAR) Symposium held each spring.

San Diego

The San Diego Chapter added an entire subchapter in Ensenada, Mexico, and is encouraging that group to become a full-fledged chapter.

In addition, a grant from the Quart Foundation helped the chapter set up a program to encourage students from junior high and high schools not traditionally known for science achievement to enter projects in the San Diego Science Fair. The aim was to recognize students with good projects from a greater selection of schools, especially those with large populations of underrepresented students.

The organization Girl Power, which encourages scholarship and science education among middle school girls, was included in this effort. The winners and their teachers (or the directors of Girl Power) were guests at the chapter's annual banquet; their parents also attended. The students displayed their work, and everyone enjoyed talking with them about their projects.

The following are representative activities by the other seven 2001 Sigma Xi Diversity Award nominees.

Alaska ■ The chapter continues its long-standing science, math and engineering mentoring program for native students and other minorities. The program is conducted in collaboration with other schools and departments at the University of Alaska at Fairbanks.

Barry University ■ In 1999 the university began its Bridges Program, which provides an opportunity for minority graduate research students to enter Vanderbilt University's com-

bined M.D./Ph.D. program. To date, eight Barry students, including three from the Sigma Xi chapter, have been accepted into the program.

Howard University ■ Each year the chapter challenges the minds of more than 100 middle school minority students from the metropolitan Washington area during Science Discovery Day. Following a short motivational talk by a prominent local scientist, each team of students is escorted to at least three hands-on, inquiry-based scientific adventures.

Kansas State University ■ For five years now, chapter members have worked cooperatively with the faculty at Haskell Indian Nations University to develop environmental programs that serve the needs of Native American tribal communities. Members are also involved in the implementation of the Dow Chemical Company/KSU Diversity Partnership.

Middle Tennessee State University

■ The chapter is a co-sponsor of an annual conference called Expanding Your Horizons in Science and Mathematics, featuring about 40 different hands-on workshops that introduce several hundred young women to various careers in science, technology and mathematics.

Natick Chapter ■ This past year in support of Hispanic Heritage Month, the chapter sponsored a talk by Nobel laureate Mario J. Molina of the Massachusetts Institute of Technology. Hispanic and other minority students from local high schools were invited to attend the talk and have lunch with the speaker.

Washington State University ■ The chapter co-sponsors awards for outstanding women in graduate/professional study, contributing funds to increase the number of awards that are given. Begun in the mid-1980s by the Association for Faculty Women, these awards are among the most prestigious available to WSU graduate students and receive wide publicity.

Ten Sigma Xi Chapters Receive Certificates of Excellence

Ten Sigma Xi chapters were recognized at the annual meeting in Raleigh with certificates of excellence for overall outstanding activity during the past fiscal year.

Nominees are chosen each year by the regional directors based on chapter annual reports, and the Committee on Qualifications and Membership selects the winners.

Cheasapeake

The chapter presented awards to 22 high school students and three outstanding teachers, who were special guests at a banquet featuring NASA's principal investigator for the Deep Impact Mission. Chapter members visited the school of each of the students nominated for an award, giving them an opportunity to talk about their projects.

Eastern New Mexico University

The success of programs featuring Sigma Xi Distinguished Lecturers led the university's president to establish a permanent annual fund to assist the chapter in organizing future series. Nearly 100 students and faculty participated in two workshops on scientific integrity and ethics. Member recruitment has also been a priority for the chapter.

Hope College

For the third consecutive year, the chapter scheduled its Sigma Xi Distinguished Lecturer series to coincide with Science Day, for which 450 high school students visited the campus. Chapter members made small group research presentations during the day. At the chapter's Undergraduate Student Research Awards reception, students were recognized for significant research achievements and invited to join Sigma Xi.

Loyola Marymount University

The chapter promotes mentored undergraduate research through a series of brown-bag lunch seminars

and an annual poster session in conjunction with the spring banquet. During the year the chapter organizes talks by about 10 speakers from outside the university community on issues in research or public policy. Several chapter members sponsor high school students in their labs.

Mayo Foundation

Members served as judges at regional and state science fairs, and the chapter established grants and awards to assist and recognize students. Other activities during the year included a series of five public lectures, the development and distribution of a pamphlet, slide show and video about the Sigma Xi chapter and sponsoring a booth at Mayo Research Day to promote membership in Sigma Xi.

Mesa State College

In memory of chapter founder Gene Saccomanno, the chapter collaborated with a local hospital on a series of lectures on human genetics research and its impact on lung cancer diagnosis and treatment. The chapter also provided research grants to deserving undergraduates and high school students.

National Institute of Standards and Technology

Activities during the chapter's 25th year included a program on the Sigma Xi Packard Initiative for International Scientific Networking and a series of eight public lectures on wide-ranging topics. A special lecture was presented in memory of Gregory Poirier, reviewing the highlights of his career at NIST.

Quinnipiac

A series of public seminars on medical advances was among major chapter activities during the year. One by Quinnipiac faculty members Ronald Beckett and Gerald Conlogue on the use of modern imaging techniques to study

mummy remains in Peru and Egypt is the subject of a public television series currently in production.

San Diego

A newsletter, Web site and e-mail listserv have kept members up-to-date on chapter programs and activities. A new grant fund was used this year to encourage and honor four middle school science fair winners. The chapter also presented George Hemingway with the first Award for Distinguished Achievement for his efforts to begin the Ensenada Chapter in Mexico.

University of Southern Mississippi

The chapter continued its Excellence in High School Science Teaching Award, which attracted 25 nominations this year. Talks by a Sigma Xi Distinguished Lecturer and seven other speakers were well received by students, faculty and the general public.

Grants Deadline March 15

March 15 is the next deadline for Sigma Xi's popular student research grants. Undergraduate and graduate students are encouraged to apply for awards of up to \$1,000 in all fields of the sciences and engineering.

Special grants of up to \$2,500 are available for research involving astronomy and eye/vision research. For nearly 80 years, Sigma Xi Grants-in-Aid of Research have provided "seed money" to help launch the careers of young investigators.

For an application or further information, contact Julia Reed at gjar@sigmaxi.org or visit www.sigmaxi.org.