

Sigma Xi Today

JANUARY/FEBRUARY 2003 · VOLUME 12, NUMBER 1

Member Survey Guides Planning

Data from an extensive member survey conducted this past fall are being used to guide strategic planning by Sigma Xi's leadership in preparation for the opportunities and challenges ahead.

Conducted by an independent marketing research firm, the survey involved more than 1,200 current Sigma Xi members, some 550 student members, more than 540 non-member *American Scientist* subscribers and 550 inactive members. The online survey was complemented by telephone interviews with chapter officers and new initiates.

"The results were a gold mine of information for use in our strategic planning process," says Sigma Xi Executive Director Patrick D. Sculley. "Furthermore, this survey can be inexpensively repeated yearly to develop a longitudinal database of members' interests and issues, which will help us to track progress in addressing member concerns."

Visit www.sigmaxi.org for an explanation of survey methodologies and detailed findings, which, among other things, identified the need for:

- Stronger chapters and greater chapter support from the Sigma Xi administrative offices;
- Increased communication about Sigma Xi membership benefits and programs to members and the public;

- Sigma Xi to capitalize on the positive experience that members have with *American Scientist* to enhance the entire membership experience.

Here are a few general survey results. The survey indicated that while 28 percent of Sigma Xi members are female, 55 percent of student members are female.

The majority of Sigma Xi members are over 45 years old (62 percent), reside in the U.S. (94 percent), are employed in academia (54 percent) and have been members for more than 10 years (59 percent).

According to the survey, members and student members rate the overall value of Sigma Xi membership highly.

Members see Sigma Xi primarily as an honor society, but were very fragmented in their responses when asked what they would prefer it to be.

At the time of induction, honor and recognition is the principal membership benefit. Over time, however, many members see *American Scientist* as their principal membership benefit.

Some members have benefited from Sigma Xi at some point in their careers and want to "pay it forward" by continuing their membership. Ethics and honor in science, education and science literacy ranked highly among respondents as program priorities for the Society.

VOICES OF SIGMA XI Some quotes from the survey...

"My membership is a privilege and an honor—a single one in my career. Please keep reminding all of us of that feeling we had when we were nominated and inducted into the society."

— SIGMA XI MEMBER

"This survey made me think, and I'll pay more attention to Sigma Xi and what it offers, particularly chapters and online services."

— SIGMA XI MEMBER

Sigma Xi Exchange is Newest Member Benefit

An electronic bulletin board, called the Sigma Xi Exchange, is now available to members on the Society's Web site at www.sigmaxi.org.

Sigma Xi Exchange is designed to provide a place on the Web for members to share information of interest to research colleagues and is the latest in a number of new member benefits under development.

"This new Web resource has been under development for several years," says Pamela Blondin, director of membership and chapter programs. "We think it will give our community of researchers a stronger sense of connection and help us all stay in touch."

Sigma Xi administrative staff reviews all postings prior to their addition to the site. Conference information, publication announcements and obituaries will be accessible to the general public. Funding opportunities will be available to Sigma Xi members only.

In addition, members can sign up to receive periodic e-mail bulletins that provide all the new postings in specific categories of interest.

In the near future new categories will focus on course materials and employment listings. Comments and observations are welcomed via exchange@sigmaxi.org.

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Chapters Receive Special Recognition

Nearly 30 Sigma Xi chapters received special recognition at the 2002 Annual Meeting for outstanding achievements in support of the Society's mission through a variety of programs and activities during the past year. Details on these activities and programs are available at www.sigmaxi.org.

Regional Directors review chapter annual reports and recommend up to five from each region for Chapters of Excellence and Chapter Program Awards. The Committee on Qualifications and Membership makes the final selection.

Chapters of Excellence

Criteria for Chapters of Excellence include the impact of programs on the community, the level of innovation or initiative, the breadth and variety of programs and the overall quality of chapter activities.

This year, 11 Sigma Xi chapters received Certificates of Excellence:

- Alaska
- Charlotte
- Eastern New Mexico University
- Howard University
- University of Illinois at Chicago
- National Institute of Standards and Technology
- University of New Mexico
- Pace University
- Quinnipiac
- Tifton
- Washington College

Chapter Program Awards

Criteria for Chapter Program Awards include the impact of a specific program on the institution or community and the uniqueness of the program or the creative use of resources. The recipients were:

- Alaska
- Central Arkansas
- University of Florida

- University of Illinois at Chicago
- National Institute of Standards and Technology
- Washington College

Diversity Program Awards

For the Diversity Program Award, Regional Directors review chapter annual reports and recommend up to five chapters from each region to the Diversity Committee.

Criteria include the impact of a specific chapter program on the community, the level of innovation or initiative and how well the activity supports the Diversity Committee mission.

The **Howard University** and **Middle Tennessee State University** chapters were singled out this year for their efforts.

Certificates of Recognition

Sixteen chapters received special recognition for initiating the most new members last year.

- Amherst College
- Brown University
- Bucknell University
- Carleton College
- Claremont Colleges
- Fordham University
- Georgetown University
- Manhattan College
- Massachusetts Institute of Technology
- Mount Holyoke College
- Newark
- North Carolina State University
- Smith College
- Swarthmore College
- Washington University
- Williams College

For more information on chapter programs, contacts, events and resources, e-mail chapters@sigmaxi.org or visit the "Chapters" section at www.sigmaxi.org.

Harris Elected Honorary Member



Richard Harris

Award-winning broadcast journalist Richard Harris, a science correspondent for National Public Radio, has become the 29th honorary life member of Sigma Xi.

Since 1983, the Board of Directors has awarded honorary life membership for distinguished service to science or Sigma Xi.

Harris reports on science for the popular newsmagazines *Morning Edition*[®], *All Things Considered*[®] and *Weekend Edition*[®]. He joined NPR in 1986 and is a science generalist, covering medicine and health, the environment, space technology, anthropology, astronomy and genetics.

In 1995, he shared a Peabody Award for investigative reporting about the tobacco industry. His other honors include the American Association for the Advancement of Science's journalism radio award, the Aviation/Space Writers Association's top award for space coverage and the Woods Hole Marine Biological Laboratory's Lewis Thomas Award for coverage of the life sciences.

Before joining NPR, Harris was a science writer for the San Francisco Examiner. From 1981 to 1983, he was a staff writer at The Tri-Valley Herald in Livermore, California, covering science, technology and health issues.

A co-founder of the Washington, D.C., Area Science Writers Association, Harris is a past president of the National Association of Science Writers. A California native, he earned his bachelor's degree in biology at the University of California at Santa Cruz.

Grant-in-Aid Funds Primate Bone Studies

This is part of a series on recent Grants-in-Aid of Research recipients. To learn more about the program, visit www.sigmaxi.org.

Dana Duren credits a Sigma Xi grant with helping to launch her academic research career. Specifically, it enabled her to conduct a pilot study on primate bone growth for her dissertation research at Kent State University.

"The pilot work was so fruitful," she says, "that I was later awarded additional grants from sources such as the American Museum of Natural History and the LSB Leakey Foundation."

Her dissertation research centered on morphological analyses of long bones in juvenile modern primates and the Miocene hominoid *Proconsul* to examine the effects of locomotor patterns on bone shape and orientation.

"This novel approach and the use of juvenile specimens shows considerable potential for providing additional information about the locomotion of extinct primates, including fossil hominids," she explains.

"The most rewarding part of the research funded by Sigma Xi was having the opportunity to visit



Dana Duren studies a fossil skull of *Afropithecus* at the National Museum of Kenya in Nairobi. Her dissertation research was funded by a Sigma Xi grant.

museums and interact with established scientists in my field." One summer, for example, she worked with the Baringo Paleontological Research Project led by Andrew Hill of Yale University.

Duren received her Ph.D. in biomedical sciences in 2001 and is continuing in the same research vein as a postdoctoral research associate at the Lifespan Health Research Center at Wright State University School of Medicine, investigating issues of human skeletal maturation.

Five Sigma Xi Members Win Nobel Prizes

In 2002 five scientists joined the illustrious list of nearly 200 Sigma Xi members who have won the Nobel Prize over the course of the Society's history.

John B. Fenn at Virginia Commonwealth University shared the chemistry prize for developing a technique that allows researchers to "weigh" large biological molecules, such as proteins, with unprecedented accuracy.

This has allowed laboratories to reveal quickly what proteins a sample contains, contributing to the development of new pharmaceuticals. Fenn was inducted into Sigma Xi at Yale University in 1940.

Raymond Davis, Jr. at the University of Pennsylvania and **Masatoshi Koshiha** at the University of Tokyo shared the physics prize for pioneering contributions to astrophysics.

Davis was inducted at Yale University in 1942, and Koshiha was inducted in 1954 at the University of Rochester.

They were cited for their work in detecting cosmic neutrinos, which gave rise to a new field of research – neutrino astronomy.

H. Robert Horvitz at the Massachusetts Institute of Technology shared the prize in physiology or medicine for his work on the genetic regulation of organ development and programmed cell death. He joined Sigma Xi at MIT in 1968.

Daniel Kahneman at Princeton University shared the economics prize for integrating insights from psychological research into economic science.

He was inducted in 1982 while on the faculty at the University of British Columbia.

Student Grant Deadline March 15

March 15 and October 15 are the annual deadlines for Sigma Xi's Grants-in-Aid of Research program, which for 80 years has represented an important investment in the future of science and engineering by supporting the work of student researchers.

To be eligible, undergraduate or graduate students must be formally enrolled in a degree program, but otherwise, anyone can apply for up to \$1,000 to cover direct costs, including research-related travel. Special funds in astronomy and eye/vision research allow awards of up to \$2,500 in those fields.

An application form is available online under the "Programs" section at www.sigmaxi.org. The site also includes complete grant guidelines, helpful tips for applying and a list of recent recipients, plus the titles of their research projects.

Voluntary contributions are the largest source of support for Sigma Xi student grants. To establish a named fund or become a friend of the GIAR program, call 800-243-6534 or e-mail development@sigmaxi.org.

Seven Chapters Host Innovative Computer Modeling Workshops

Seven Sigma Xi chapters are among the first to host innovative computer modeling workshops for undergraduate faculty in a new partnership with the Shodor Education Foundation, Inc. of Durham, North Carolina. Up to 15 additional chapters will be able to join the program in fall 2003.

The workshops explore how to develop computer models that can help science students "see" the invisible: phenomena that are too small (atoms and molecules), too large (galaxies and the universe), too fast (photosynthesis), too slow (geological processes), too complex (automobile engines) or too dangerous (toxic materials) to investigate in the classroom.

An example of this technology is available on the *American Scientist* Web site in a series of animated illustrations for George Saliba's article "Greek Astronomy and the Medieval Arabic Tradition" from the July-August 2002 issue.

These animations, produced by Shodor high school intern Conrad Kirby, demonstrate how the position of an observer, combined with planetary motion, produce an optical illusion in which planets sometimes appear to reverse direction as they move across the night sky.

The chapter-based computer modeling workshops are being offered through the National Computational Science Institute (NCSI) funded by the National Science Foundation and managed by the Shodor Foundation. The first Sigma Xi chapters to participate are Bryn Mawr, Fairfield College, Alabama, Colorado School of Mines, Louisiana State, Marshall University and Muskingum College.

This academic year program involves hosting two workshops on campus. Outreach to high schools and science museums, with an opportunity to engage the public, is another attractive feature of the pro-

gram. E-mail education@sigmaxi.org for more information or to apply.

The Shodor Foundation is a non-profit research and education organization dedicated to the advancement of science and math education, specifically through the use of modeling and simulation technologies. NCSI workshops are introducing the hands-on use of computational science, numerical models and data visualization tools across the undergraduate science curriculum.

The initial target audience overall is faculty from predominantly undergraduate institutions, minority serving institutions and community colleges whose students are either the next generation of scientists and engineers, the next generation of K-12 teachers, or both.

Shodor offers workshops and internships to faculty and students on general modeling, Internet science, math explorations, medicine, forensic science, astrophysics, environmental science, scientific computing and computational chemistry. Visit www.shodor.org for details.

Other NCSI partners include the Education, Outreach and Training Partnership for Advanced Computational Infrastructure, the National Center for Supercomputing Applications, the University of Illinois at Urbana-Champaign, Clemson University and Appalachian State University.

Additional partners include the National Computational Science Education Consortium, the Burroughs Wellcome Fund, the North Carolina Supercomputing Center and more than two dozen academic institutions, high performance computing centers and vendors.

The Sigma Xi-Shodor partnership is part of the Society's ongoing program on science and engineering education.

F. Kenneth Hare 1919-2002

Former Sigma Xi president (1986-87) F. Kenneth Hare, who died peacefully at his home in Oakville, Ontario, in September, will be remembered as an internationally respected environmental scientist and activist.

He served on commissions and committees on acid rain, desertification, heavy metals, nuclear reactors and wastes products, ozone, greenhouse gases and climate change. His many honors included the Order of Ontario.

A former president of the University of British Columbia, Hare was a professor and dean of arts and science at McGill University, master of Birkbeck College at the University of London, chancellor at Trent University and a professor at the University of Toronto.

Nominations Due

The nominations deadline is April 1 for Sigma Xi president-elect and regional and constituency elections. Sigma Xi members may submit nominations through the form available at www.sigmaxi.org.

At least two nominees for president-elect will be considered by the November 2003 Assembly of Delegates. Candidates are being sought for directors in the North Central and Southwest regions, as well as the Comprehensive Colleges & Universities and the Area Groups, Industries, State & Federal Laboratories constituency groups.

Associate directors will be elected for the Mid-Atlantic and Northeast regions, as well as the Baccalaureate Colleges and Canadian/International constituency groups. Committee on Nominations seats are open for the Northwest and Southeast regions and the Research & Doctoral Universities Constituency Group.