

Sigma Xi Today

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Philip Carter Named Executive Director

Philip B. Carter, Sigma Xi's new executive director, comes to the Society from North Carolina State University (NCSU), where he is professor emeritus of microbiology and immunology and from Merck Foundation where he was programs director of the Merck Childhood Asthma Network.

His career in higher education spans 34 years, during which he was recognized for research, teaching and international initiatives. Carter joined the NCSU faculty as a full professor in 1982, serving from 1986-89 as associate vice chancellor for research and director of the university's biotechnology program.

A Sigma Xi member since 1990, he is a former treasurer of the NCSU Chapter. Many of his professional interests have been aligned with those of the Society.

He chaired the committee that developed the university's first guidelines on ethics in scholarship. He also initiated expansion of a summer program on campus for high school minority students in science and engineering.

Carter assisted in setting up a novel university-public incubator at NCSU that supported high-tech start-up companies. His expertise in microbial agents, such as anthrax, led to his chairing the steering committee for the Pentagon's Military Infectious Disease Research program.

"Dr. Carter is a distinguished research scientist whose technical expertise, administrative experience and international perspective on science make him the ideal leader for our Society," says Sigma Xi President James F. Baur, who chaired the search committee.

"Sigma Xi enjoys a long history of accomplishment and a position of importance in American science

and beyond," Carter notes. "Its future contributions toward enhancing the health of the research enterprise, addressing the ethical challenges discovery often creates, and to the public's understanding of science will be even more significant."

A native of Chicago, Phil Carter holds a B.S. degree in biology and a Ph.D. in microbiology from the University of Notre Dame. He served as a project leader in the immunology division of the Ames Company of Miles Laboratories, Inc. before joining the staff of the Trudeau Institute in Saranac Lake, New York, in 1971.

After a year as a visiting scientist at Oxford University in 1978, he joined the faculty at the University of Illinois at Champaign-Urbana as an associate professor and then moved to NCSU in 1982.

Associate editor of *Microbial Ecology in Health & Disease*, Carter has served as president of the International Association for Gnotobiotics and is a past corporate board chairman of the Association for the Assessment and Accreditation of Laboratory Animal Care International, Inc. His research has centered on immune responses to infectious agents.

He and his wife Joan, a community college science teacher, have two children, Richard (physics) and Ellen (mathematics). Both his son and daughter-in-law, Ambika Somashekhar Carter, were inducted into Sigma Xi when they were students.



Philip B. Carter

Sigma Xi Produces Promotional Video

In a new 15-minute video about Sigma Xi, more than two dozen members describe the international honor society of science and engineering in their own words. In the process, they provide an overview of Sigma Xi's mission, programs and activities.

"This is an excellent introduction to Sigma Xi," says Executive Director Philip B. Carter. "In a relatively brief format, it gives a good overall impression of the Society, making it suitable for showing at chapter initiation banquets, research symposia, public lectures and other events."

Among those featured in the video are National Medal of Science winner Thomas Eisner, former National Science Foundation Director Rita Colwell, current Sigma Xi leaders and Grants-in-Aid of Research recipients.

Sigma Xi: Making a Difference in Science and Engineering is available online at www.sigmaxi.org/about/documentary and in a DVD format. Its 10 individual modules, on such topics as science and engineering education, research ethics and *American Scientist* magazine, can be shown in any order and selected according to audience interest.

Additional special features include a brief history of the Society, a longer interview with Thomas Eisner at Cornell University and discussion of the landmark Sigma Xi Postdoc Survey.

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Dreifus, Hill Become Honorary Members

Distinguished journalists Claudia Dreifus and Richard Hill are Sigma Xi's newest honorary members. They will be inducted at the Society's annual meeting in Detroit on November 2-5.

A science writer for *The New York Times*, Dreifus collected many of the interviews for which she is famous in a book called *Scientific Conversations*. Hill is an award-winning science writer for *The Oregonian* and a leading advocate for increasing public awareness about science.

Claudia Dreifus

As a journalist, educator and lecturer, Claudia Dreifus is widely recognized for her abilities in interviewing scientists and communicating the complexities of their work to the public.



Claudia Dreifus

Before coming to the "Science Times" section of *The New York Times*, Dreifus was known for her incisive interviews with international political figures and cultural icons.

Her work has appeared in *The New York Times Magazine*, *Playboy*, *Ms.*, *The Progressive* and *Modern Maturity*. In her book, *Scientific Conversations: Interviews on Science from The New York Times*, she delves into the thoughts and lives of some of the most intriguing minds in science.

She is an adjunct assistant professor at the Columbia University School of International and Public Policy and has contributed to many textbooks and anthologies. She is also a senior fellow at the World Policy Institute of the New School for Social Research.

Her many honors include an Outstanding Magazine Article Award from the American Society of Journalists and Authors. Dreifus

lives in New York City with her domestic partner, political scientist Andrew Hacker.

Richard Hill

For the past 18 years, Richard Hill has been the science writer at *The Oregonian*, where he has been involved in producing the newspaper's weekly science section.



Richard Hill

He has written more than 2,500 science stories on a wide variety of subjects, from eruptions at Mount St. Helens to the hazards posed by the Cascadia Subduction Zone off the Northwest coast.

In 2000, Hill was the first recipient of the American Geophysical Union's David Perlman Award for Excellence in Science Writing. He has also received the C. B. Blethen Memorial Award for Distinguished Reporting and has won several regional awards from the Society of Professional Journalists.

He has been a media fellow at Woods Hole Oceanographic Institution and has participated in two NOAA research cruises, including the first exploration of the Astoria Canyon off the Northwest coast.

The Oregon Science Teachers Association and the Columbia-Willamette Chapter of Sigma Xi have recognized Hill for his work. He recently published a book for the general public, *Volcanoes of the Cascades: Their Rise and Their Risks*.

A former board member of the National Association of Science Writers, he has also been a reporter and editor at *The Dallas Times Herald* and *The Christian Science Monitor*. Hill has a journalism degree from the University of Texas at Austin.

Sigma Xi Sponsors 2007 TOYchallenge

For the fourth consecutive year, Sigma Xi is a national sponsor for Sally Ride Science's TOYchallenge™.

The annual competition gives students in grades five through eight a chance to develop their engineering skills and science knowledge by designing and building their dream toy or game.

Former astronaut and Sigma Xi member Sally Ride designed TOYchallenge to motivate middle school students, and especially girls, to get involved in engineering design and to recognize that there's engineering in everything.

To enter TOYchallenge 2007, teams must have an adult coach. They choose from three category themes: "Toys that Teach," "Games for the Family" and "Get Out and Play." Both boys and girls may participate, but at least half of the members of each team must be girls.

In TOYchallenge's Preliminary Round, teams submit written descriptions and visual presentations of their original toy or game concepts.

Invited teams from around the country then display working prototype toys or games at either the East Coast or West Coast Nationals for final judging. A number of prizes and certificates are awarded.

On April 28, the competition's East Coast Nationals will be held, as in previous years, at the Sigma Xi Center in Research Triangle Park, North Carolina.

Sigma Xi members are welcomed as coaches and judges. Chapters can support teams through sponsorship or coaching. Judges evaluate entries on originality, creativity, engineering elegance, feasibility and team participation.

For details, visit www.sigmaxi.org, e-mail education@sigmaxi.org or call 800-243-6534.

Sigma Xi Grant Helps Support Spiny Lobster Study in Belize

Through hard work and a little help from a Sigma Xi Grant-in-Aid of Research, along with several other awards, Appalachian State University (ASU) applied anthropology major Robert C. Thigpen III made several trips to sunny Caye Caulker off the coast of Belize to study the lobster fishery of the western Caribbean.

The streets of the four-mile-long island are made of sand, and most of the 1,200 permanent residents of Caye Caulker are more apt to travel by golf cart or bicycle than automobile. The island is popular with scuba divers, snorkelers, anglers and tourists, but commercial fishing is still an important source of revenue.

Large-scale lobster fisheries arose there in the 1920s, following introduction of the lobster trap and its modification for use in catching spiny lobsters. The oldest fishing cooperative in Belize, the Northern Fisherman's Cooperative Society Ltd (NFCS), was formed in 1960. NFCS offered Thigpen an internship in 2005.

After observing the co-op's quality checks, Thigpen found NFCS only accepts the highest quality lobsters. However, when he noticed that spiny lobsters gained weight after they were caught, he decided to investigate further.

He discovered that as fishermen soaked the lobster tails preparing them for sale (a necessary part of the process), the tails naturally increased in weight by approximately 9 percent of their total weight. As a result, some young lobsters that had not yet reproduced were accidentally harvested.

In addition, the tails lost the water weight before they were re-sold, thus causing the co-op to have less product by weight to sell than it actually purchased. As Thigpen continues

this research, he believes he will be able to make suggestions to the fishing cooperatives that will curtail this economic loss both to the cooperatives and the fishermen.

In the course of his project, Thigpen found some eager research assistants among the older children of the family from which he rented a room. He believes that what he taught them about marine biology will help them

with resource management issues and sustainability practices of today.

"Scientists obviously contribute to our understanding of the biology of commercially harvested species," he continues. "Still, scientists must be aware of the culture of the people they work with and their perspectives and needs regarding these fisheries if we are to be successful in contributing to fishery management policies."

Thigpen has presented his research findings and their potential consequences for the sustainability of the spiny lobster fishery at regional and international conferences, including the Belize National Marine Science Symposium.

He also gave a presentation at a teachers' seminar held by the Hugh Parkey Foundation for Marine Awareness and Education to help develop a new marine science workbook for Belizean school children. He is consulting with them on the design of the new marine wet lab on Spanish Bay Caye in Belize.



Robert Thigpen, acting as sideman to second-generation lobster fishermen Leopoldo "Polo" Heredia, checks lobster traps in the waters of Caye Caulker.

PHOTOGRAPH BY ALYSSA AJIL

in school and in their future university studies. He also acknowledges the assistance of and appreciates the encouragement that he received from the fishermen as well as the use of the NFCS research facility on the caye.

Though his major is applied anthropology, Thigpen is receiving a minor in biology. He works closely with several professors in ASU's Department of Biology as well as his home department.

"Having my own international research project as an undergraduate has been an invaluable learning experience," Thigpen says. "However, I would not be suited for this type of research without my training in anthropology and biology. They are the perfect blend of disciplines to deal

Thigpen is continuing his research by performing a stable isotope analysis of spiny lobsters and their place in seagrass meadow food webs of the western Caribbean. He will present his preliminary results in November at the 59th annual meeting of the Gulf and Caribbean Fisheries Institute. His talk is titled "Non-lethal Methodology for Stable Isotope Analysis of Marine Invertebrates."

After graduation from ASU, Thigpen plans to attend graduate school and continue his research on spiny lobsters. He also wants to produce an educational/documentary film on the Caribbean fishery that will showcase the local fishermen and discuss current harvesting practices.

News Briefs

Kyoto Prize-Winner



L. A. Herzenberg

Sigma Xi member Leonard A. Herzenberg at Stanford University will receive the Kyoto Prize for Advanced

Technology in November for development in the 1960s of the first fluorescence-activated cell sorter, or FACS.

His invention jump-started the fields of modern immunology, stem cell research and proteomics, and made invaluable contributions to clinical care, including treatment of cancer, as well as AIDS and other infectious diseases.

FACS machines are now ubiquitous in research and clinical laboratories around the world. An emeritus professor of genetics, Herzenberg was inducted into Sigma Xi in 1954.

Kyoto Prizes are presented annually by the Inamori Foundation to those who have contributed significantly to human progress. Each winner receives a cash gift of about \$446,000.

New Education Manager

Sharlini Sankaran has joined the staff of Sigma Xi as the new manager of education programs. She will oversee the Society's efforts to further science, math and engineering education at all levels, from kindergarten to the postdoctoral level and beyond.

Ongoing Sigma Xi education programs include Grantsmanship

Workshops, Sally Ride Science's TOYchallenge™, the Sigma Xi Postdoc Survey, and the Science, Math and Engineering Education Grant program.

Sankaran has bachelor's and master's degrees in electrical and computer engineering from Ohio University and is a doctoral candidate in biomedical engineering at the University of North Carolina at Chapel Hill.

She has been a student mentor with Women in Engineering and Technology in Athens, Ohio, and has served as a math mentor and mentor leader with the Durham, North Carolina, Women and Mathematics program. Sharlini was born and raised in Malaysia and now lives in Durham with her husband and daughter.



Members of the United Nations-Sigma Xi Scientific Expert Group gather around the Einstein monument outside the National Academy of Sciences in Washington, D.C. The group is expected to issue a report soon on practical ways that countries can help reduce or mitigate the effects of global climate change. Back row: Richard Moss, Hans Joachim Schellnhuber, (Albert Einstein, inducted into Sigma Xi in 1920), Michael MacCracken and Alexander Ginzburg. Middle row: Jaques Dubois, Mario Molina, Peter Raven, Rosina Bierbaum, Patrick Sculley and Taikan Oki. Front row: Janice Lough, Diana Urge-Vorsatz, Zara Khatib and John Holdren.

It's nearly
the end of
the tax year.

Would you like to know how you can help support Sigma Xi's mission and achieve the maximum income tax deduction?

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THE SCIENTIFIC RESEARCH SOCIETY