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Sigma Xi Today
A NEWSLETTER OF SIGMA XI, THE SCIENTIFIC RESEARCH HONOR SOCIETY

Students Are Invited to Apply for Research Grants

The Sigma Xi Grants in Aid of Research (GIAR) program has been funding students' research for nearly 100 years. The grants may be used for travel to a research site or to purchase nonstandard equipment for a specific project. Undergraduate and graduate students who would like to apply may do so at www.sigmaxi.org/giar. Two review periods take place each year, with application deadlines of March 15 and October 1.

The Committee on Grants in Aid of Research, chaired by Peter J. Harries of North Carolina State University, selected 97 students for funding in the fall 2018 review period. This represented 12 percent of the applications received. The awardees were 17 undergraduate students, 24 master's degree students, and 56 doctoral candidates from six countries. Collectively, they received $87,696. A list of the recipients is available at www.sigmaxi.org/2018grantsfall. Sigma Xi thanks the 27 volunteers who reviewed the 810 applications in this cycle.

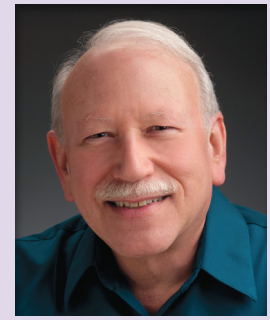
Designated funds from the National Academy of Sciences (NAS) and donations allow the program to provide grants in a range of research categories. Some NAS funds are designated for up to $5,000 for astronomy research or up to $2,500 for vision-related research. The program is seeking more applications related to meteorites or space.

Donations to GIAR may be made at www.sigmaxi.org/support-giar.

Sigma Xi Today is managed by Heather Thorstensen and designed by Justin Storms.

From the President

Sigma Xi Members Can Fight Climate Change



Joel R. Primack

Sigma Xi members have a special role to play in staving off the worst effects of climate change. The Society has adopted a statement on climate change, which opens with a description of its effects:

> Scientific evidence continues to confirm that human activities are contributing to the warming of our planet. . . . Left unresolved, the impact on ecosystems and human quality of life may be devastating.

The statement concludes with a call for action:

> Sigma Xi's commitment to improving the human condition through science and engineering necessitates that we call on national and international leaders to pursue aggressive actions to reduce carbon emissions and to develop adaptive measures. . . .

Making decisions based on evidence is increasingly important as humanity faces urgent interconnected global problems, including accelerating species extinction. But we are seeing more and more the difference between scientific and political approaches to veracity. As the physicist Leo Szilard wrote in his 1961 story, "The Voice of the Dolphins,"

> When a scientist says something, his colleagues must ask themselves only whether it is true. When a politician says something, his colleagues must first of all ask, "Why does he say it?"; later on they may or may not get around to asking whether it happens to be true.

Unlike most politicians, many scientists and engineers are themselves technical experts on important public issues. And all scientists learn how to read and evaluate the scientific literature, in order to judge which claims should be taken seriously. As a consequence, we scientists have a special responsibility to improve the use of reliable information in making crucial public decisions.

With newly elected members of the U.S. House of Representatives and Senate, scientists will have new opportunities to educate Congress and the general public about public issues that have significant scientific components. This is a challenge that Sigma Xi is well positioned to meet, with our many thousands of members and hundreds of chapters in colleges, universities, and laboratories across the nation. Now is a good time to get to know your local members of Congress and discuss issues with them. Invite them to visit your campus or laboratory. It is also a good time to educate your neighbors—by giving talks, writing letters to the editor and op-ed essays, and posting information on social media. It is crucial that citizens understand the urgent need to take action to address humanity's global challenges.

Joel R. Primack

Read Sigma Xi's full climate change statement at www.sigmaxi.org/climatechange.

Grants in Aid of Research Recipient Profile: Roha Kaipa

Grant awarded: $1,000 in spring 2015

Education level at the time of grant: PhD candidate

How the funds were used: She purchased electroencephalography (EEG) equipment suitable for a pediatric population for her project.

Goal of the project: This project aimed to correlate behavioral and electrophysiological responses of bilingual children during an inhibitory control task. She carried out a pilot project to examine how bilingual children suppress competing information and pay attention to contextually relevant information while carrying out a competing listening task. Unfortunately, she was not successful in collecting quality EEG data for the project.

How this project influenced her as a scientist: "It helped me understand how to control external variables in an electrophysiological line of research. It also helped me to be open to constructive criticisms and suggestions from other scientists. This project opened a lot of other funding opportunities for me."

Where is she now? Kaipa earned her PhD in 2018 and is now an assistant professor in the Department of Communication Science and Disorders at Oklahoma State University. Her current work focuses on examining the effects of multilingualism on linguistic and cognitive processing in multilinguals using behavioral as well as electrophysiological outcome measures. "The experience I gained from the pilot project funded by Sigma Xi was valuable in setting up my later EEG projects," she said.

Chapter Awards

The Sigma Xi Committee on Qualifications and Membership has selected the recipients of the 2017–2018 chapter awards and has recognized the chapters that initiated the most new members in 2017. Award nominees were chosen by the regional and constituency directors based on chapter annual reports. The Society thanks these chapters for their contributions.

Chapter Program of Excellence Awards were bestowed for organizing or hosting a single outstanding program during 2017–2018 to the following chapters.

1. University of Michigan, for their Ethics Symposium on Gene Editing
2. State University of New York at Oswego, for their student award at the QUEST Symposium
3. Williams College, for their public lecture series

Chapter of Excellence Awards were bestowed for exceptional chapter activity, innovative programming, and true community leadership during 2017–2018 to the following chapters.

1. Charleston
2. University of Nebraska at Kearney
3. Quinnipiac

Top Electing Chapters

The following chapters are recognized for initiating the most new members in 2017–2018.

Area Groups, Industries, State, and Federal Laboratories Constituency

1. Delta
2. Charleston
3. Albany, New York
4. Columbia-Willamette
5. John Deere
6. Centers for Disease Control and Prevention

Baccalaureate Colleges Constituency

1. Swarthmore College
2. Carleton College
3. Williams College
4. Oberlin College
5. Wellesley College
6. Southern Maine

Comprehensive Colleges and Universities Constituency

1. Providence College
2. Saint Joseph's University
3. Manhattan College
4. Tuskegee University
5. Ithaca College
6. Rollins College

Research and Doctoral Universities Constituency

1. Brown University
2. Fordham University
3. Princeton University
4. Ohio State University
5. Worcester Polytechnic Institute
6. Oakland University

Canadian/International Constituency

1. Calgary
2. University of Toronto

Overall Top Three Chapters

Sigma Xi recognizes the following chapters as the overall top three electing chapters:

1. Brown University
2. Fordham University
3. Swarthmore College

Sigma Xi Members Elected as AAAS Fellows

Sigma Xi congratulates the 2018 class of Fellows from the American Association for the Advancement of Science (AAAS). In October, the AAAS Council elected the following Sigma Xi members among its 2018 Fellows in recognition of their efforts on behalf of the advancement of science or its applications in service to society.

Section on Agriculture, Food, and Renewable Resources

Robert J. Ferl, University of Florida
Elizabeth E. Hood, Arkansas State University
Carol A. Ishimaru, University of Minnesota
Jeffrey B. Jones, University of Florida
Bruce A. Kimball, U.S. Department of Agriculture–Agricultural Research Service /The Greenleaf Group
Jianxin Ma, Purdue University
Ray Ming, University of Illinois at Urbana–Champaign
David M. Stelly, Texas A&M University /Texas A&M AgriLife Research

Section on Anthropology

Benedikt Hallgrimsson, University of Calgary (Canada)
Sang-Hee Lee, University of California, Riverside
Fred H. Smith, Illinois State University
Andrea B. Taylor, Touro University, California
E. Christian Wells, University of South Florida

Section on Astronomy

Eric J. Chaisson, Harvard University

Section on Atmospheric and Hydrospheric Sciences

Dennis A. Hansell, University of Miami
Upmanu Lall, Columbia University

Section on Biological Sciences

Dean C. Adams, Iowa State University
Paul N. Black, University of Nebraska–Lincoln
Holly M. Brown-Borg, University of North Dakota
Christopher G. Burd, Yale School of Medicine, Yale University
Robert S. Chapkin, Texas A&M University
Thomas L. Crisman, University of South Florida
Mary Dasso, National Institute of Child Health and Human Development/National Institutes of Health
Savithramma P. Dinesh-Kumar, University of California, Davis
John M. Drake, University of Georgia
Michael A. Gealt, Central Michigan University
James A. Guikema, Kansas State University
K. David Hambright, University of Oklahoma
Kyle Edward Harms, Louisiana State University
Fredric J. Janzen, Iowa State University
Terrance J. Kavanagh, University of Washington
Carla M. Koehler, University of California, Los Angeles
Iris Lindberg, University of Maryland, Baltimore
William H. McDowell, University of New Hampshire
Neil Osheroff, Vanderbilt University School of Medicine
John T. Patton, Indiana University Bloomington
Samuel Michael Scheiner, National Science Foundation
Jay Shendure, University of Washington
Katharine Nash Suding, University of Colorado Boulder
Allen Taylor, Tufts University
James Francis Anthony Traniello, Boston University
Charles Walcott, Cornell University
Claire E. Walczak, Indiana University School of Medicine
Joseph B. Yavitt, Cornell University
Jonathan P. Zehr, University of California, Santa Cruz
Baohong Zhang, East Carolina University

Section on Chemistry

Thomas E. Albrecht-Schmitt, Florida State University
Kara L. Bren, University of Rochester
Marcetta Y. Darensbourg, Texas A&M University
Xiangfeng Duan, University of California, Los Angeles
Teresa Fryberger, National Academies of Science, Engineering, and Medicine (Retired)
Robert (Barney) Grubbs, Stony Brook University
Wayne Charles Guida, University of South Florida
P. Shiv Halasyamani, University of Houston
William H. Hersh, Queens College, City University of New York
Dimitris Katsoulis, Dow Chemical Company
Aravinda (Arvind) M. Kini, U.S. Department of Energy (Retired)
Carlito B. Lebrilla, University of California, Davis
Zhiqun Lin, Georgia Institute of Technology
Todd B. Marder, Universität Würzburg (Germany)
Shelley D. Minteer, University of Utah
Janet Elizabeth Nelson, University of Idaho
Glenn D. Prestwich, University of Utah, College of Pharmacy
Stewart W. Schneller, Auburn University

Section on Dentistry and Oral Health Sciences

Robert C. Angerer, National Institute of Dental and Craniofacial Research/National Institutes of Health
Richard W. Valachovic, American Dental Education Association

Section on Education

Jeffrey Bennett, Big Kid Science
Beth A. Cunningham, American Association of Physics Teachers
Ali Eskandarian, George Washington University
Tamara S. Ledley, STEM education consultant, Earth and climate science
Jeffrey M. Osborn, College of New Jersey
Nancy Pelaez, Purdue University

Section on Engineering

Narayana R. Aluru, University of Illinois at Urbana-Champaign
Guillermo A. Ameer, Northwestern University
Craig H. Benson, University of Virginia
Shekhar Bhansali, Florida International University
Karen J. L. Burg, University of Georgia
Krishnendu Chakrabarty, Duke University
Chang-Beom Eom, University of Wisconsin-Madison
Ali Erdemir, Argonne National Laboratory
Venkat Ganesan, University of Texas at Austin
Joseph A. King, Jr., U.S. Department of Energy/ Advanced Research Projects Agency–Energy
Satish Kumar, Georgia Institute of Technology, School of Materials Science and Engineering
Gregory V. Lowry, Carnegie Mellon University
Louis A. Martin-Vega, North Carolina State University
Athina P. Petropulu, Rutgers, State University of New Jersey
K.T. Ramesh, Johns Hopkins University

Section on General Interest in Science and Engineering

Tee Lamont Guidotti, George Washington University Hospital
John Archie Pollock, Duquesne University
David J. Skorton, Smithsonian Institution

Section on Geology and Geography

Ann F. Budd, University of Iowa
Ethan L. Grossman, Texas A&M University

Section on Industrial Science and Technology

David L. Morse, Corning Incorporated
William D. Phillips, National Institute of Standards and Technology

Section on Information, Computing, and Communication

David J. Farber, Keio University (Japan)
Peter Arthur Fox, Rensselaer Polytechnic Institute
Vasant G. Honavar, Pennsylvania State University
Huan Liu, Arizona State University
Patricia Morreale, Kean University
Lynne E. Parker, University of Tennessee, Knoxville
C. Raymond Perrault, SRI International
Amit P. Sheth, Wright State University

Section on Mathematics

George Em Karniadakis, Brown University
C. T. Kelley, North Carolina State University
David E. Keyes, King Abdullah University of Science and Technology (Saudi Arabia)

Section on Medical Sciences

Henry Joseph Donahue, Virginia Commonwealth University
Wayne D. Newhauser, Louisiana State University/ Mary Bird Perkins Cancer Center

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How Sigma Xi Chapters Can Find Great Speakers

Physicist Sally Seidel, on left, met with faculty members of Oregon Episcopal School, which serves pre-kindergarten through 12th grade students in Portland, for her Distinguished Lecturer visit to the Columbia–Willamette Sigma Xi Chapter. (Photo courtesy of Linda Mantel.)

Sigma Xi chapters around the world bring people together to learn about and support research. Engaging activities are vital to the health of chapters, and they can get help in that regard from the Society's Distinguished Lectureships program, which provides a cohort of cutting-edge researchers each year who can speak at chapter events. The program also invites chapters to apply for subsidies that can help cover the cost of a lecturer's visit.

In March of 2018, the Columbia-Willamette Chapter in Oregon, which has members from multiple institutions in the Portland area, hosted Distinguished Lecturer Sally Seidel, a physics professor from the University of New Mexico. Seidel, who is trying to discover new particles, explained in a Sigma Xi lecture at Portland State University how each new particle could answer fundamental questions about the nature of the universe. She is a collaborator on an experiment at the Large Hadron Collider at the European Organization for Nuclear Research (CERN), and she also collects and analyzes data from other experimental facilities.

Seidel's first event in Oregon was a morning visit to a local pre-kindergarten through 12th grade school, where she met with junior and senior honors students in science. A lively question and answer session followed her talk. Later that day, at Portland State University, she met with students in the Louis Stokes Alliance for Minority Participation program and with members of the Physics Club. The next day, she met individually with faculty members and graduate students in Portland State's physics department in the morning, and in the afternoon she gave a technical seminar as part of the department's seminar series. Seidel's main Sigma Xi lecture followed dinner with the chapter's board members. Before departing, she had lunch with students and faculty from Portland State.

Hosting a Distinguished Lecturer is always valuable, said Linda Mantel, the chapter's president.

"We get to meet someone we don't know, we have the opportunity to involve the larger scientific community, and we can do outreach to younger scientists," said Mantel. "The more we can engage faculty and other scientists in town, the bigger the impact of a Distinguished Lecturer visit."

The chapter received a $1,000 subsidy from the Distinguished Lectureships program for Seidel's visit. Every year, the deadline for subsidy applications is March 1 for lecturer visits that will take place between July 1 of that year and June 30 of the following year.

See the list of Distinguished Lecturers at www.sigmaxi.org/2020distinguishedlecturers Chapters may apply for the subsidy at www.sigmaxi.org/lecturersubsidy.

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Lawrence I. Rothblum, University of Oklahoma Health Sciences Center
L. David Sibley, Washington University School of Medicine in St. Louis

Section on Neuroscience
Andrea G. Hohmann, Indiana University Bloomington
Donata Oertel, University of Wisconsin–Madison, School of Medicine and Public Health

Section on Physics
Wai-Yim Ching, University of Missouri–Kansas City
Timothy Edward Chupp, University of Michigan

Section on Psychology
Peter M. Todd, Indiana University Bloomington

Section on Social, Economic, and Political Science
Carter Tribley Butts, University of California, Irvine
Kathleen M. Heide, University of South Florida

Section on Statistics
A. John Bailer, Miami University
Giovanni Parmigiani, Dana-Farber Cancer Institute