

# Sigma Xi Today

A NEWSLETTER OF SIGMA XI, THE SCIENTIFIC RESEARCH HONOR SOCIETY

## Stay in Touch with the Society

To get the most from your membership, Sigma Xi needs your up-to-date contact information. Updating your profile information is easy when you follow these steps.

1. Go to [www.sigmaxi.org](http://www.sigmaxi.org), and click "Login" in the top-right corner. If you haven't created a password, click "Forgot Your Password?" on the next screen. Then enter the email address that Sigma Xi currently has on file for you, and follow the steps to create a password.
2. Once logged in, click on your name in the top-right corner. Select "My Sigma Xi" from the drop-down menu.
3. On the My Sigma Xi page, under the Self-Service section, select "Update Profile Information."
4. Update your email address, phone number, chapter affiliation, and more. The Society prefers a nonwork and nonschool email address. Scroll to the bottom of the page and click the Submit button.
5. Return to the My Sigma Xi page, and select "Manage Addresses" to edit your mailing address.

A current mailing address ensures you receive *American Scientist*. A print subscription is included in active membership. Active members also receive an e-newsletter every other week and have access to Sigma Xi's online member community, The Lab: Members to Members.

### Find Your Chapter

Visit Sigma Xi's website to find a chapter near you. Select "Locate a Chapter" from the drop-down menu under "Chapters."

## From the President

### We'll Always Have Paris

I welcome my new role as Sigma Xi's president as of July 1. I have been most fortunate to have been mentored by Past President Tee Guidotti and former interim Executive Director and CEO John Nemeth for the past year. Tee and John led a turnaround for our Society that was just in time for us to prepare to meet the challenges that face researchers today. Tee attended to the details of strengthening our governance and financial infrastructure, and John led the way to bring Sigma Xi to the forefront of our peer professional societies. To maintain this momentum, we must grow our membership and increase our member retention through the actions of our local chapters and headquarters leadership. John came out of retirement to serve as our interim executive director and we are a stronger organization because of his efforts. We welcomed our new executive director, Jamie Vernon, on July 1 and have the highest expectations for what he will accomplish for the Society.

Most researchers are disappointed to see the United States withdraw from the Paris climate accord. I write "most researchers" because Sigma Xi has a diversity of opinions in its membership, and we certainly expect the Society to remain an apolitical organization. As your president, however, I personally regret the decision to withdraw but look with some optimism at the large number of governors and mayors holding fast to the spirit of the plan as they move to implement energy-saving technologies that reduce our carbon footprint. Indeed, well before the Paris accord action I organized the Symposium on Atmospheric Chemistry, Climate, and Health that Sigma Xi will host on November 10 along with our Student Research Conference on November 11 in Raleigh, North Carolina. I picked the topic because as a chemical engineer and a researcher I could see the relevance of this theme to a broad swath of our membership and to society at large. Please register for the events as space is limited. The following world-class researchers are scheduled to speak.

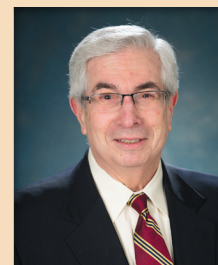
**David Archer**, The University of Chicago  
Humanity and Global Warming: Views from the Carbon Cycle

**Barbara Finlayson-Pitts**, University of California, Irvine  
The Past is Prologue: Lessons Learned for Science-Based Policies to Address Air Quality and Climate

**C. Arden Pope III**, Brigham Young University  
Air Pollution and Health: Scientific and Public Policy Controversies

**A. R. Ravishankara**, Colorado State University  
The Ozone Hole: From Discovery to Recovery

**Jeffrey Shaman**, Columbia University  
Simulation and Forecast of Infectious Disease: Environmental Determinants and Transmission Dynamics



President Stuart L. Cooper

Stuart L. Cooper

## Chapter Grant Award Recipients Announced

Sigma Xi is committed to diversifying its membership, its programs, and the broader scientific and engineering research community. The Society welcomes participation by individuals from groups that are historically underrepresented in science, technology, engineering, and mathematics (STEM).

To help achieve this mission, Sigma Xi offers chapter grants and teacher stipends. The Society encourages award applicants to collaborate with other chapters or to identify matching support from other sources that can enhance the effectiveness of their proposed initiatives. Grants are normally awarded to new projects as a onetime source of support.

Sigma Xi's Committee on Quali-

fications and Membership has announced the following recipients of this year's chapter grants:

### Diversity Grants

Diversity Grants provide up to \$1,000 in seed money for chapters to use to initiate innovative diversity programs that promote inclusion of individuals from underrepresented groups. Diversity may reflect gender, race, ethnicity, disability (mental or physical), and/or socioeconomic status. The Society awards Diversity Grants to chapters that organize outstanding programs to promote diversity within the science, engineering, and research communities.

- **The Rush University Chapter** was awarded \$1,000 for its proposal

"Enhancement of Motivation of Minority Students for Research Doctoral Program."

- **The University of North Carolina-Chapel Hill Chapter** was awarded \$1,000 for its proposal "Second Annual Diversity in STEM Conference."

### Science, Math, and Engineering Education (SMEE) Grant

The SMEE Grant provides up to \$2,000 for chapters to fund innovative education programs.

- **The Texas A&M University Chapter** was awarded \$2,000 for its proposal "Learning by Seeing: A Visualization-Based Education for Manufacturing Science and Engineering."

## Partnership Will Help Students Publish Research Faster



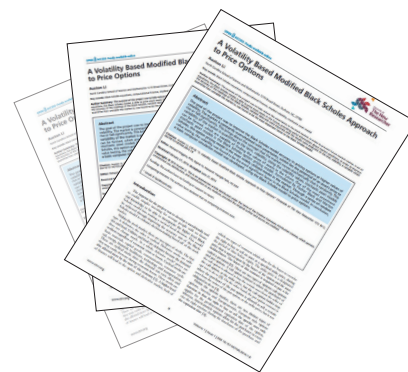
Sigma Xi and J&J Editorial are creating a partnership that will benefit *Chronicle of The New Researcher* (CTNR), the Society's scientific journal for high school students. To help simplify and accelerate the CTNR publishing process, J&J Editorial will take over the day-to-day editorial management responsibilities related to manuscript submission, professional review, and publication.

"CTNR is excited about a collaboration with respect to the relaunch and

the highly advanced throughput capabilities brought to the table by J&J Editorial's expertise," said Andrew Joseph, CTNR editor. "This partnership will ensure that students can become published authors before applying to college. Based on the great enthusiasm of young researchers at both the American Junior Academy of Science and the Intel International Science and Engineering Fair about the possibility of publishing their work this year, CTNR's future looks bright indeed."

The journal has published high school students' research since 2014. Students who are preparing for research careers can learn firsthand about the scientific peer-review publishing process by submitting a manuscript. Industry and academic professionals review the students' manuscripts and provide feedback. Submissions to the journal are free for students and their schools thanks to funding from DIRECTV. Find more information at [www.sigmaxi.org/ctnr](http://www.sigmaxi.org/ctnr).

"We are thrilled to be working with Sigma Xi on *Chronicle of The*



*New Researcher*," said Michael Casp, J&J Editorial's director of business development. "J&J is committed to serving the research community with best practices in scholarly publishing, and we relish the opportunity to help guide young researchers as they communicate their scientific research findings to the world. We believe in the mission of CTNR and value the chance to support its work."

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

## Students Can Earn Nominations to the Research Honor Society

One by one, graduate, undergraduate, and high school students are called up to be recognized before their peers and judges. These students—who investigate a variety of topics, from chemistry to physics, from environmental science to engineering—are selected as top presenters in their disciplines at the Student Research Conference.

All presenters at the conference earn nominations to associate membership in Sigma Xi, the world's largest multidisciplinary research honor society. Winners' nominations come with a monetary award, a medal, and a year of waived membership dues to Sigma Xi. You can see the pride in their faces as they reach this milestone in their young careers. When the students accept the nomination, they join a community of researchers elected for their potential or achievement in research.

This year's hopefuls will have their chance at the 17th Annual Student Research Conference on November 11 in Raleigh, North Carolina. The conference is a gathering of students from across the world. Students meet and present their work to professionals,

who provide feedback as judges. Later, professionals share their knowledge and expertise at the networking session. Students also attend career-preparatory sessions to advance their science communication skills.

Aaron Huertas, founder and principal of Science Communication Media, will lead a workshop titled "Organizing an Effective Visit with a Policymaker," which will cover best practices for interacting with elected officials. Participants will



Aaron Huertas

learn to think about how their research fits into a policymaker's point of view. A panel discussion titled "Communicating Research in a Rapidly Shifting Landscape" will describe best practices for researchers who are interested in communicating their findings to policymakers and the public.



Greg Fishel

In the keynote address, Greg Fishel, a Sigma Xi member and chief meteorologist for WRAL-TV and WRAL-FM, will discuss "Climate Change, My Journey from

Ideology to Science," which will be a reminder to go through life thinking as a scientist.

"For many years, I did not address the issue of climate change as a scientist but rather as an ideologue," Fishel said. "I want to help ensure that others don't make the same mistake I did."

The Student Research Conference will be preceded by the Symposium on Atmospheric Chemistry, Climate, and Health on November 10 in Raleigh.

Register for the Student Research Conference at <https://www.sigmaxi.org/fallsymposium-src>.



Alberto Lopez, center, from the University of California, Irvine, was the Undergraduate Division Winner in the 2016 Annual Student Research Conference for physiology and immunology.



Tyra McKnight, right, an undergraduate student from SUNY Plattsburgh, presents her research on the hemoglobin beta gene to a judge. (Images courtesy of Robb Cohen Photography and Video.)

## Sigma Xi Offers Research Grants to Students

Sigma Xi invites undergraduate and graduate students to apply to its Grants-in-Aid of Research (GIAR) program by October 1, 2017. The application is on Sigma Xi's website at <https://www.sigmaxi.org/programs/grants-in-aid/apply>.

### Endowment Distributes First Grant

The new Claude C. Barnett Grants-in-Aid of Research Endowment Fund distributed its first grant this spring.



Doctoral candidate Carolyn Shasha is the first student to receive a grant from the new Claude C. Barnett Grants-in-Aid of Research Endowment Fund.

Carolyn Shasha, a doctoral candidate at the University of Washington, is using the \$800 grant to support her research project on magnetic particle imaging (MPI), a new medical imaging method that uses magnetic nanoparticles. It is currently being developed as a cheaper, faster alternative to magnetic resonance imaging (MRI).

"My goal is to develop a method for creating multicolor images with MPI so that, for example, blood, healthy tissue, and cancer cells could appear on an image in different colors," said Shasha.

Her project involves using computer simulations to identify the ex-

perimental conditions necessary for creating a multicolor image. She is spending August testing the method at a functioning prototype MPI system at the University Medical Center Hamburg-Eppendorf. This is her first grant and she is using it to support her travel costs to and from Germany, and to meet and work with leaders there and gain access to state-of-the-art equipment.

"I believe that nanotechnology will play an extremely important role in the development of future medical technologies," Shasha said. "I enjoy the challenge of trying to figure out exactly what's going on with these tiny particles, while at the same time contributing to a broader field that will hopefully soon be translated into clinical applications."

Barnett was a Sigma Xi member for 60 years and served as president of the Whitman College–Walla Walla University Chapter in Washington state.

### Climate Science Research Grants Now Available

GIAR will accept applications for climate science research grants for the first time this fall. "Sigma Xi recognizes that climate change is a critical, interdisciplinary issue that has important scientific as well as societal



## GRANTS-IN-AID OF RESEARCH

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implications," said Peter J. Harries, chair of the GIAR committee. "This importance is the crux of the Society's support for up-and-coming researchers who are pursuing research in the myriad disciplines that enhance our understanding of the topic. By adding this new category to the grants program, we aim to promote the continued development of this growing field."

The new climate science category is related to an upcoming event Sigma Xi will host on November 10 in Raleigh, North Carolina. The Symposium on Atmospheric Chemistry, Climate, and Health will feature five researchers who will discuss climate change and its effects on global and human health. Sigma Xi's Student Research Conference will follow on November 11. See pages 317 and 319 for details.

### How to Support Student Research

GIAR will reach its centennial year in 2022, thanks in large part to individual donors. Sigma Xi's goal is to increase financial support for GIAR so it can help more students. If you would like to support student research, go to <https://ecommerce.sigmaxi.org/ecom/#Donate>.