

Sigma Xi Today

A NEWSLETTER OF SIGMA XI, THE SCIENTIFIC RESEARCH HONOR SOCIETY

K–12 Students Can Become Sigma Xi Explorers

Sigma Xi, The Scientific Research Honor Society is expanding how it supports the next generation of scientists and engineers. The new Sigma Xi Explorers opportunity is open to students in kindergarten through 12th grade who have presented a project at a science fair and have a letter of recommendation from a science or math teacher.

The Explorers opportunity helps students connect with the world's largest research honor society for scientists and engineers. Explorers can form Sigma Xi Explorer clubs that are led by their local Sigma Xi chapter, which allows students to meet professional researchers in their area and to find mentors.

The program was approved at the Society's Annual Meeting in November 2016. At the time, Cristina Gouin-Paul was the chair of the Committee on Qualifications and Membership, which recommended the formation of the Explorers opportunity.

"I have always endeavored to reach out to an ever younger generation of scientists," said Gouin-Paul. "Suggesting and creating a new category for our next generation of scientists was also spurred on by our members using a survey. The need to engage all, even the youngest members of society, in the understanding of science is of utmost importance."



To learn more about Sigma Xi's Explorer opportunity and to enroll, visit www.sigmaxi.org/explorers. Turn to page 192 for an interview with Sigma Xi's first explorer.

From the President

Knowing When to Speak Out



President Tee L. Guidotti

Starting in early December 2016, American scientists and engineers learned about the following actions of the Trump administration: the demand for a list of scientists who attended a conference; a move to ban immigration that entangled students and science, technology, engineering, and math (STEM) workers; orders for research-intensive federal agencies to stop sharing information; orders to shut down certain agency web pages that carry data and objective information; and cabinet nominees for positions overseeing important areas of science and technology who denied its importance and often deprecated and sometimes opposed their agency's essential mission and work. Sigma Xi and 107 other scientific organizations quickly joined with the American Association for the Advancement of Science (AAAS) to speak out publicly in defense of science, specifically on the immigration ban.

Many Sigma Xi members and leaders who have expressed an opinion support taking a position on these big, existential policy issues, yet we are all uneasy. There is a palpable level of discomfort in taking public positions, even among those of us who agree that it is necessary. Our predecessors in Sigma Xi during World War I and II and in the 1970s were much more comfortable with activism than we are now. Do we have a legitimate role in advocacy today?

Sigma Xi is an honor society and knows something about what is good for good science. We understand the big issues facing the STEM fields. We have a membership diverse in its politics and point of view, which is a source of strength and understanding. We think a lot about how policy and science fit together, usually uneasily. Above all, our mandate is to protect and to celebrate science. So we do have a role: to educate the public, including policy makers, about how science works and what harms it, to advocate for the essential conditions that allow science to flourish, and to call out policies that hinder science from serving society.

As a 501(c)(3) tax-exempt organization, we are precluded from advocacy regarding individual candidates and most lobbying, so we are careful to stay well within the guidelines. And within these limits, when the core of scientific research itself is threatened, we must speak out forcefully.

Sigma Xi, together with AAAS, has partnered with organizers of the March for Science, to be held April 22, 2017, in Washington, DC, with satellite marches across the U.S. and around the world. We believe this is the right way to express our support for science. This positive, family-friendly demonstration in favor of objective truth will celebrate the value of science and research. It will also convey to the best young scientists across the country that we honor them and that we are proud to be their home.

Tee L. Guidotti

Save the Date: Sigma Xi Symposium and Student Research Conference

Sigma Xi, The Scientific Research Honor Society invites you to join researchers and students at its Symposium on Atmospheric Chemistry, Climate, and Health and for the Student Research Conference November 10–11, 2017, at the Raleigh Convention Center in Raleigh, North Carolina.

The symposium will be held November 10 in lieu of the Annual Meeting. The next Annual Meeting's date and location will be announced soon.

The symposium will feature five presentations that focus on the intersections between climate change, environmental health, and human health. It will also include a panel discussion about solutions to future problems surrounding climate and health. Lunch will be provided.

The Student Research Conference on November 11 will feature a research poster presentation competition for high school, undergraduate, and grad-

uate students. The afternoon will have career preparatory workshops and a networking event. An evening banquet will recognize the poster session's top presenters and an induction ceremony will be held to welcome new members into Sigma Xi.

Students who rank as the top presenters in their division and research category will receive a monetary award and a year of membership dues paid for by Sigma Xi. All presenters in the Student Research Conference will receive nominations to join Sigma Xi as explorers or associate members.

Sigma Xi members are encouraged to attend the conference to serve as judges for the poster presentations, network with students, and enjoy the banquet.

To learn more about these events and to register, go to <https://www.sigmaxi.org/meetings-events/symposium-and-student-research-conference>.

Symposium on Atmospheric Chemistry, Climate, and Health

Speakers



Barbara Finlayson-Pitts
Professor of Chemistry
University of California, Irvine



A. R. Ravishankara
Professor in the Departments of
Chemistry and Atmospheric Science
Colorado State University



C. Arden Pope III
Mary Lou Fulton Professor of
Economics
Brigham Young University



David Archer
Professor in the Department of
Geophysical Sciences
The University of Chicago



Jeffrey Shaman
Associate Professor, Department of
Environmental Health Sciences
Director of the Climate and Health
Program
Mailman School of Public Health
Columbia University



BRYAN REGAN



FLYBOY AERIAL PHOTOGRAPHY

The Raleigh Convention Center in downtown Raleigh boasts spacious lobbies, meeting rooms and its famous Shimmer Wall.

March to Support and Celebrate Science

Sigma Xi, The Scientific Research Honor Society is encouraging members across the country to join local organizing efforts for the March for Science on April 22. The march intends to promote, in an apolitical and non-partisan manner, the value of research and its role in American society. The movement is gaining traction as chapter members are stepping out of labs, classrooms, and offices to redirect their time and expertise toward championing this celebration of science.

Sigma Xi is partnering with its 500 chapters of scientists and engineers—located at educational institutions, government laboratories, and industry research centers—to connect members with March for Science organizers in Washington, DC and at nearly 300 satellite events across the globe.



Vince Formica, assistant professor of evolutionary biology at Swarthmore College, notes that the march provides a tangible and memorable

occasion for colleagues and students to be a part of a greater conversation between scientists and science advocates.

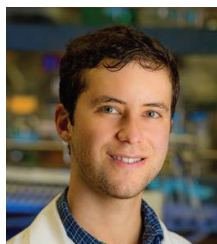
“I knew that I needed to stand up as an expert and scientist and participate in public discourse about scientific issues,” he said. “I also realized that I needed to model that behavior to my students. I think it is a great opportunity to introduce our students to the larger scientific community and model for them what scientific participation in the democratic process should be.”

Sigma Xi is also offering to serve as a fiscal sponsor—managing march fund donations taken in by satellite city organizers—for member-led planning efforts.

Formica, who is on Swarthmore’s planning team, says the group’s leadership includes scientists from fields as disparate as chemistry, computer science, and mathematics, and is helping to coordinate involvement across university departments. He also credits his local Sigma Xi chapter officers for covering transportation costs to attend the march.

“Once we secure the buses and get things squared away with the college, I’m hoping to get student groups to help organize meetings and get the word out,” he said. “I’d be really excited if we could bring 100 local people to the DC March!”

The Society likewise recognizes that the March for Science supports the organizers’ goals of fostering the use of science in policy decisions and encouraging scientists to speak out in their communities about the research they do and why it’s important.



Robert Cooper, a quantitative biology postdoc at the University of California, San Diego, is helping spearhead his city’s event to showcase how

science strives to benefit all people.

“The Marches for Science, especially here in San Diego, aim to be a positive event for all local scientists and enthusiasts to come out and share their passion face-to-face,” he said. “If the movement succeeds, not only will it be good for public support and understanding of science, but it will demonstrate, by example, that there really is something we can all agree on.”

Cooper notes that San Diego is promoting the clear-cut message that science is for everyone. He said that his city’s volunteer organizers come from diverse backgrounds: academic and industry scientists, entrepreneurs, students, teachers, professionals, and enthusiastic supporters who simply like science.

“The broad support for these marches demonstrates a unique advantage—science is cool!” he said. “Science tangibly saves lives, creates jobs, and powers our technology, but it also inspires, amazes, bubbles, and fizzes. If we can unite around anything, it’s science.”

On a larger scale, Sigma Xi and the organizers strive to open a dialogue to support and safeguard their communities. They hope the March for Science will give them a forum to offer input on policy decisions, both to their elected officials and their neighbors, and to

discuss the research they do and why it matters.

“As a scientist, the policy change I want to see is acceptance of basic scientific facts and then open and frank conversations about how to deal with the problems our country and world face,” said Formica. “Denying fact and sowing confusion really works against the democratic process.”

Cooper, who says he has had a long-time interest in the “intersection of science and policy,” appreciates Sigma Xi’s corporate support because he believes it gives his work—as well as his grassroots science advocacy and outreach—legitimacy and purpose.

“Our first goal is simply to encourage face-to-face interaction between scientists and the public,” he said. “For us to listen to each other, first we must understand and trust each other, and that means coming together and interacting as real human people. We want both for scientists to come out of their labs to show who they are and what they do for the community, and for everyone in the community to come show what science means to them. We believe building that trust is prerequisite for our second goal—public policy that both supports and is supported by science.”

Like Cooper, Formica hopes his planning efforts and drive to share the non-partisan message yield similar results.

“Within the scientific community, I hope that the March for Science will galvanize greater outreach efforts—people need to know how science works and why our findings matter to the common good,” he said. “I think the march will also build support and infrastructure for scientists to participate in informed public discourse about the issues that affect our country. Knowing that other scientists are out there participating in town hall events, calling their representatives, and marching in DC helps me value my own actions and motivates me to be a better citizen.”

Sigma Xi Today is
edited by Lisa Mumma
and designed by Spring Davis.

Meet the First Sigma Xi Explorer

The new Sigma Xi Explorer opportunity reached a milestone in February when Camerin Kith, a 16-year-old from Fairfax, Virginia, earned the distinction of becoming the first explorer.

"It's pretty exciting," Kith said. "It's really cool to be the first."

Established in November 2016, the Explorers opportunity invites K–12 students to connect with professional scientists and engineers through Sigma Xi. Explorers can form clubs that are led by their local Sigma Xi chapter. They get discounts on registration to Sigma Xi's student research competitions and receive a subscription to *American Scientist* magazine. The Society also sends them updates about science and engineering through its newsletter.

Kith, a 10th-grader at Falls Church High School, has a strong interest in astronomy and physics. He became an explorer to meet professional researchers who can ultimately help him in his goal of conducting research as a theoretical physicist.

"I like how quantum mechanics—it's not what you expect. It's so interesting to me to see how it all works," he said.

In the meantime, Kith has been teaching himself math and physics beyond what he learns in school. He earned his Boy Scout Nova Award for completing activities relating to science, technology, engineering, and math. He studies Massachusetts Institute of Technology's

course content that is published through MIT OpenCourseWare. And he participates in Skynet Junior Scholars, an online program that allows him to access telescopes around the world and to work with other students across the country on research projects.



Camerin Kith, Sigma Xi's first explorer, enjoys astronomy and would like to have a future career in theoretical physics.

FUND YOUR RESEARCH
APPLICATION OPENS
JULY 1, 2017



GRANTS-IN-AID
OF RESEARCH

S I G M A X I

Sigma Xi, The Scientific Research Honor Society's Grants-in-Aid of Research (GIAR) program provides funding to undergraduate and graduate students in science and engineering.

By encouraging close working relationships between students and mentors, the program promotes scientific excellence and achievement through hands-on learning. Undergraduate and graduate students currently enrolled in degree seeking programs may apply.



Online application form available July 1 through October 1, 2017.
Funding decisions announced by email in mid-December.