

Sigma Xi Today

A NEWSLETTER OF SIGMA XI, THE SCIENTIFIC RESEARCH SOCIETY

Vote in the Sigma Xi 2016 Elections

All active Sigma Xi members are encouraged to vote in the Society's 2016 elections. Voting takes place online and opens at 8 a.m. EST on November 14. Active members will receive an email from elections@vote-now.com that day with instructions on how to vote. The polls will close at 11:59 p.m. EST on December 13.

All active members may vote for president-elect, treasurer, and other open positions in the region and constituency assigned to their chapter. Members-at-large will vote for open positions in the Membership-at-Large Constituency.

Results will be announced on the Society's website. Questions or concerns may be directed to the executive office by emailing executiveoffice@sigmaxi.org or by calling (800) 243-6534.

Open positions in this election are the following:

- **President-elect**
- **Treasurer** to complete the unexpired term of Ronald Millard
- **Directors:** Mid-Atlantic Region, Northeast Region, Southeast Region, Membership-at-Large Constituency, Research and Doctoral Constituency
- **Associate Directors:** Northwest Region; Southeast Region; Area Industries, State, and Federal Labs Constituency; Comprehensive Colleges and Universities Constituency; Research and Doctoral Constituency
- **Representatives for the Committee on Nominations:** Mid-Atlantic Region, North Central Region, Southwest Region, Baccalaureate Colleges Constituency, Canadian/International Constituency

Information about the candidates is available on the Sigma Xi website. Go to <https://www.sigmaxi.org/about/society-elections-2016>.

From the President

Civility in Research

Researchers, being people, have the frailties of all human beings. Some are tempted to indulge in ad-hominem personal attacks, reputational smears, bullying, name-calling, and defamation. This unpleasant underside of research is more than embarrassing and confusing to the public. Uncivil behavior is an obstacle to progress in science.

The origin of the expectations for researchers' behavior lies in the privileged social status of those who practiced science in past centuries. Science was once a gentlemanly avocation, pursued almost exclusively by men of a privileged and wealthy upper or middle class. Such people, it was assumed, would never think of violating the code of honesty, integrity, and personal rectitude expected of a "gentleman."

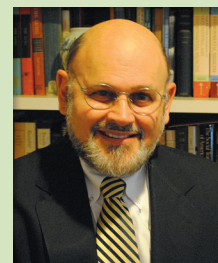
The democratization and globalization of research in the late 19th century and through the 20th century was profoundly good and necessary, but class-based assumptions of "gentlemanly" behavior lost some of their force. In a pluralistic, skeptical (sometimes cynical), and increasingly competitive world, appropriate behavior cannot be taken for granted.

One might think that compartment would not matter—that science, being objective, could easily rise above crude and prejudicial behavior and dysfunctional relationships—or that personal conflict might even enhance critical acuity in research. Uncivil behavior, however, is not just unpleasant; it can be highly destructive for science. Personalizing a difference of opinion tends to shut down rational discourse, puts up barriers to discussion, and raises defensiveness.

A historical example of how uncivil behavior interferes with science was the alienation of Hugh Sinclair, the Oxford scientist whose predilection for spite arguably set back the field of human nutrition in the 1950s. A more recent example is the "nano-imaging feud" in which a dispute over interpretation of an image at the limits of resolution led to personal attacks in the blogosphere and recriminations. And, of course, there is constant, egregious, vituperative name-calling over climate science, directed toward anyone with the temerity to study the topic.

Certainly, such behavior is profoundly dispiriting and misleading to students and trainees, and it gives ammunition to those who question science's special role as a way of knowing the material world. The research community, however, cannot deal with uncivil behavior the way it deals with misbehavior and fraud. Uncivil behavior in research, like unruly speech in a democracy, occurs in a privileged and protected space that allows unrestricted free expression; liberty is always the higher value.

Researchers continue to assume that civility in science will be learned passively by diffusion. This is a naïve assumption. We must actively teach our students and each other by example about responsibility and civility in relationships in research, not only because it makes life more pleasant but also because boorish behavior holds back the advancement of science and engineering.



Tee L. Guidotti



District of Columbia Sigma Xi Chapter President Cristina Gouin-Paul, left, met Omokaro Obire of Nigeria at the 2015 Sigma Xi Annual Meeting.

District of Columbia Chapter Sponsors Sister Chapter in Nigeria

The District of Columbia Chapter created a new model last year for how Sigma Xi chapters can support scientists in other parts of the world. It started when D.C. Chapter President Cristina Gouin-Paul was walking through the professional poster session at the 2015 Sigma Xi Annual Meeting in Kansas City, Missouri. There, she met Omokaro Obire, a professor of environmental microbiology from Rivers State University of Science and Technology in Port Harcourt, Nigeria. Obire was presenting her research poster about the effects of oilfield wastewater on crops.

Those who present a poster at the meeting are nominated to become Sigma Xi members. Obire was inducted on the final day of the meeting. As she and Gouin-Paul talked about her enthusiasm for Sigma Xi, Gouin-Paul offered the support of the D.C. Chapter to help Obire's efforts in starting a Sigma Xi Chapter in Nigeria. Obire returned to Nigeria and became a long-distance member of the D.C. Chapter, which will pay half of her membership dues for five years as she establishes the Nigerian chapter. The other half of her dues will be paid by Sigma Xi's Young International Scientists Dues Fund. Once the chapter in Nigeria is up and running, the D.C. Chapter will support it as a sister chapter.

Back in the United States, Gouin-Paul has been delighted to get pictures of Obire and her students in their lab.

"She has the contacts through me and my chapter to get help when needed," Gouin-Paul said, "though we are still working on the details for sending donations of lab supplies, funds, etc., so that she receives the items. She and her students serve as inspirations for members of our chapter and the Society."

Gouin-Paul also hopes to provide grants from the D.C. Chapter to Obire's students.

"One-thousand dollars goes a very long way in Nigeria," Gouin-Paul said. "If we can possibly break through political power and territorial barriers through science—become true, global, zealous companions in scientific research—imagine the possibilities!"

Scientists in Nigeria are enthusiastic about joining Sigma Xi, Obire said. She knows the D.C. Chapter's support will help Nigerian scientists by providing networking opportunities with American scientists. It will also help students get basic scientific research equipment.

"Science in America is way more advanced than science in other parts of the world," Obire said. "Having [the] opportunity to be affiliated will surely give us the opportunity to be abreast with current science even if we do not have the facilities to conduct such research in Africa."

Sigma Xi chapters who are interested in sponsoring a sister chapter should email chapters@sigmaxi.org.

What to See at the 2016 Annual Meeting and Student Research Conference

Sigma Xi's Annual Meeting and Student Research Conference, November 10–13, 2016, in Atlanta will be full of learning and making new connections. Whether you attend in person or follow the meeting on social media using #SigmaXimtg, here are highlights you won't want to miss.

- **Keynote lectures:** Sigma Xi's award winners are keynote speakers throughout the meeting, and their presentations include information about their personal research experiences. Don't miss the November 12 banquet and the presentation of the inaugural Gold Key Award to Norman Augustine, retired chairman and CEO of Lockheed Martin Corp., for his extraordinary contributions to research.

- **Student awards:** High school, undergraduate, and graduate students will compete for research poster presentation awards on November 12. The top presenters will be announced at approximately 5 p.m. EST that day. Don't miss the announcement of the Student Choice Award winner, sponsored by the District of Columbia Sigma Xi Chapter.

- **Panels and workshops:** From November 11–12, attendees have the opportunity to attend professional development sessions on science communication, science entrepreneurship, mentorship, science policy, and diversity in science, technology, engineering, and math. Don't miss the panel about careers in science at 8 a.m. EST on November 13, when panelists explore research career opportunities beyond academic careers.

Sigma Xi's Initiative to Strengthen Research Outreach

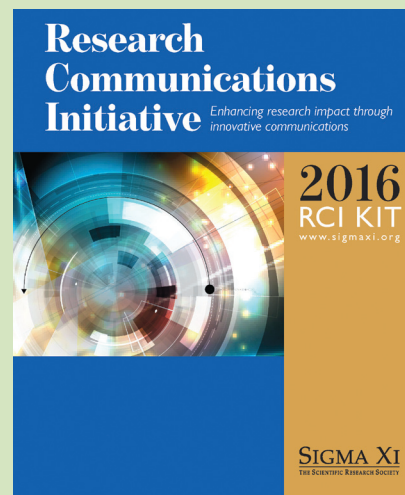
Through its new Research Communications Initiative (RCI), Sigma Xi seeks to help scientists and engineers enhance the impact of their research. Sigma Xi will team up with researchers and institutions that wish to effectively communicate their work to general audiences, research administrators, and other investigators.

Sigma Xi will help its RCI partners develop a strategy for sharing their research and connect them with leading communications professionals who will develop content, including feature-length articles, videos, infographics, animations, podcasts, social media campaigns, and more. Sigma Xi will provide both digital and print publishing platforms so that partners may reach new audiences. Finally, partners will receive a data-driven evaluation of their communications.

"The Research Communications Initiative is an innovative program that calls on the expertise we've developed and perfected over our 100-year history of communicating science," said Jamie Vernon, Sigma Xi's director of science communica-

tions and publications. "We know that institutions can strengthen their reputation by sharing their research and that public and private funding agencies are asking for more outreach from their grant recipients. Sigma Xi is uniquely qualified to provide this service because of our emphasis on ethical research, our worldwide chapter and member network that can be an audience for our RCI partner communications, and our experience in publishing *American Scientist*."

RCI partners will have the option to have their communications included in special sections or inserts in *American Scientist* or to have content on *American Scientist's* website as well as RCI digital platforms or partners' sites. All RCI content will be fully disclosed as a product of the partnership program and will be published under a Creative Commons license, making it free to be republished. Sigma Xi has called upon its relationships with other like-minded organizations, such as the National Alliance for Broader Impacts, Council of Graduate Schools, and the U.S. Council on Competitive-



ness, to distribute the work created with RCI partners to leaders in the research community. The Society plans to have a variety of other organizations involved.

To learn more about RCI, or to donate to support its science communication objective, go to <https://www.sigmaxi.org/programs/research-communications-initiative>.

Sigma Xi Invites Rising Researchers to Join Affiliate Circle



Individuals interested in science and engineering can join Sigma Xi's Affiliate Circle and be part of its diverse and talented network of people who support and work for excellence in scientific research. For students who aspire to a research career, joining the Affiliate Circle can be the first step toward becoming associate or full members in the Society.

Affiliates may be the following:

- teachers and librarians who educate and encourage future researchers
- clinicians who translate research results into improved health
- students who will be tomorrow's scientists and engineers
- science advocates whose support helps guide public policy in the advancement of research

There are two different affiliate categories:

Professional: individuals who work in, or have earned a degree in, science or engineering or nonscientists who support the mission of Sigma Xi

Student: students who are enrolled in a curriculum of science, technology, engineering, or math and are interested in pursuing research careers

Affiliates receive their choice of a

print or digital subscription to *American Scientist*, access to subscriber-only content on www.americanscientist.org, and the *Sigma Xi Newsletter*. They also have the option to subscribe to *Sigma Xi SmartBrief*, daily emails Monday through Friday that feature top science and technology stories. Additionally, affiliates will have opportunities to connect with their local research community through a nearby Sigma Xi chapter. Students receive a discounted rate.

Sigma Xi members are encouraged to spread the word about this opportunity to their family, friends, students, or colleagues.

To learn more, go to <https://www.sigmaxi.org/affiliate>. Sigma Xi membership criteria is also online.

Sigma Xi Will Present First Gold Key Award at Annual Meeting

From Sigma Xi Executive Director and CEO John C. Nemeth:

It is the greatest of honors and such a pleasure for me to announce that the inaugural Gold Key Award, Sigma Xi's highest accolade, will go to Norman R. Augustine. Selected by the Executive Committee and approved by the full Board of Directors, this award recognizes extraordinary achievement and contribution by a Sigma Xi member to the world of research professions encompassed by our Society.

The official citation reads:

The Gold Key Award is presented to a member who has made extraordinary contributions to his or her profession and has fostered critical innovations to enhance the health of the research enterprise, to cultivate integrity in research, or to promote the public understanding of science for the purpose of improving the human condition.

Sigma Xi member Norman Augustine is considered a businessman in Washington, D.C., but he still speaks like the aerospace engineer he was at the beginning of his career. In his retirement, after serving as chairman and CEO of Lockheed Martin Corp., he wants to dedicate "whatever runway" he has left to two areas that could help create jobs and improve national security. The key to both, he says, is strengthening K-12 education and increasing federal funding for basic research.

For K-12 education, Augustine wants to help young people prepare for careers in science and engineering. As lead director of the National Math and Science Initiative, he oversees efforts to get more high school students to take advanced placement courses to prepare them to be successful in college. He also founded the Maryland Business Roundtable for Education, which brings together business leaders in Maryland to support public K-12 schools in the state.

When it comes to improving education, his sights don't stop within America's borders. Augustine knows that getting quality education overseas would help elevate the quality of life for people in other countries, who—in many areas of the world—do not enjoy the same quality of life as Americans. Equalizing this disparity would help reduce the threat of attacks on the United States, he said. Augustine learned firsthand how opportunities that come from education can help improve a person's life. He

was the first in his family to go to college, and he attended Princeton University with his education paid for by a university scholarship. He has gone on to become a trusted voice in Washington on science and national security issues by leading reports for the National Academies of Sciences, Engineering, and Medicine; chairing the National Academy of Engineering; and serving on the President's Council of Advisors on Science and Technology for Presidents Bill Clinton and George W. Bush.



Norman R. Augustine, retired chairman and CEO of Lockheed Martin Corp., will be the first recipient of the Gold Key Award.

In terms of research, other countries have been prioritizing their research investments while federal funding for research in the United States has declined. Augustine, however, is an advocate for funding basic research because of the foundation it builds for creating jobs. He knows basic research is the key to developing solutions for issues such as producing energy, conserving the environment, and strengthening national security.

Despite few scientists and engineers in Congress, Augustine sees a widespread understanding among political leaders that research helps create jobs. There is also the sentiment, however, that more research funding isn't affordable. In fiscal year 2014, the U.S. government's total budget for research and development was approximately 0.78 percent of the gross domestic product, down from its peak of more than 2 percent in the 1960s during the space race. In fiscal year 2015, the chunk of the total research and development budget allocated to basic research was approximately 0.20 percent of GDP.

"People who say we can't afford to increase the spending in research, I just dismiss that ... the issue is one of priority," Augustine said.

In the meantime, the research enterprise can do more to help itself. Augustine thinks researchers should speak out more about the reasons their work is valuable and get non-researching allies to do the same.

"One of the things we have to do is get more people who are the beneficiaries of research, which is almost everybody in this country, to speak out," he said.

Norman Augustine will accept the Gold Key Award at the Sigma Xi Annual Meeting on November 12. He will also present a keynote lecture titled, "Do the Merits of Science Speak for Themselves?" Go to <https://www.sigmaxi.org/norman-augustine> for the full interview with Augustine.

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