

# Sigma Xi Today

A NEWSLETTER OF SIGMA XI, THE SCIENTIFIC RESEARCH HONOR SOCIETY

## Sigma Xi Launches Online Student Networking Platform Through Tallo Partnership

Sigma Xi has established an exciting new partnership with Tallo, a web-based networking platform. The partnership gives Sigma Xi student members the opportunity to create free, online profiles that highlight their talents, skills, and accomplishments to colleges, universities, and an extensive list of companies around the United States.



Through the Tallo networking platform, student members from high school through graduate school can create private online profiles to showcase their achievements, enrich college search materials, and connect with potential career opportunities. Additionally, students can create valuable relationships with mentors and request digital badges offered by Sigma Xi.

"This partnership between Sigma Xi and Tallo will allow students to underscore their accomplishments—particularly those achieved through Sigma Xi—to colleges, universities, and future employers," said Sigma Xi CEO Jamie Vernon. "We're thrilled to help our members and student affiliates advance their careers by sharing their skills and talents on the Tallo platform."

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Sigma Xi Today is managed by  
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Chao Hui Tu.

## From the President

### We Can Do Hard Things

When I first addressed you at Sigma Xi's Annual Meeting in November 2019, I invited you to come to the next year's meeting in Alexandria, Virginia to "celebrate with me that every day something has tried to kill us and has failed." I never imagined that less than four months later we would be facing a new, more onerous "something"—a global pandemic and a nationwide shutdown. The loss of Sigma Xi members and their loved ones to the COVID-19 pandemic has been difficult for everyone at our organization to bear. Amidst the chaos, we have exhibited strength and learned many lessons as we begin to re-emerge and re-engage.



Sigma Xi, like many organizations, was required to come to a full stop on in-person activities. Personally, I had planned to visit many chapters to participate in induction ceremonies to catalyze membership and be more engaged in the Society. I had already set aside some personal funds to travel to these events, and I had made commitments to some chapters to do so.

During that period, we were required to pivot and make contingency plans for future events, such as the 2020 Annual Meeting in Alexandria. Given the modest size of our staff, I was impressed by how quickly we pivoted to produce a high-quality virtual meeting that incorporated both arts and STEM. We had an overwhelmingly high number of attendees from around the globe, many of whom would not have been able to attend had it been an in-person event. As a result, we have expanded Sigma Xi's global reach during the pandemic, which is no small feat, for which I am thankful to our entire team.

As a nation and as an organization, we've proven that we can do hard things in difficult circumstances. Therefore, as we return to in-person spaces and begin reconnecting the synapses that we previously used for conversations with colleagues, cocktail chitchat, and other interactions, I hope we remember some of the lessons learned from the pandemic. If we come together in the community of nations, we can focus our scientific talents to solve hard problems—like developing COVID-19 vaccines in record time. And if the nation's attention is focused on the hard problem of distributing those vaccines, we can create solutions that deliver those vaccines to millions of people in record time. These are lessons that Sigma Xi members already know, as science advocates and zealous researchers. We must work together. We must act as champions for science and research to solve today's problems and those we will face in the future.

It has been my honor to serve as Sigma Xi's president during this pandemic year. I hope to have in-person conversations with many of you at the upcoming 2021 Annual Meeting and Student Research Conference.

**Sonya T. Smith**

## Registration Now Open for 2021 Annual Meeting and Student Research Conference

**November 4–7, 2021**  
**The Conference & Event Center**  
**Niagara Falls, Niagara Falls, New York**



Sigma Xi invites members and the public to attend our 2021 Annual Meeting and Student Research Conference, taking place November 4–7 in Niagara Falls, New York. The theme for this year's meeting is *Roots to Fruits: Responsible Research for a Flourishing Humanity* — How scientific virtues serve society. Join researchers, ethicists, educators, and science communicators from around the globe as they examine what it means to conduct ethical, responsible research in science and engineering disciplines.

The conference will showcase emerging trends and challenges across a broad spectrum of topics, including the responsible conduct of research, ethical considerations in the design and implementation of new technologies, the social responsibilities of researchers, and the public's confidence in science and their views on scientific discoveries. Some sessions will be streamed live for remote attendees. Visit [www.sigmaxi.org/amsrc21](http://www.sigmaxi.org/amsrc21) to learn more and register today!

### Conference Tracks

#### Responsible Research and Discovery:

Sessions and case studies on the broader societal impact of scientific discoveries, as well as emerging issues in scientific integrity from different perspectives, including researchers, policymakers, and funding agencies.

#### Responsible STEM Education:

Sessions on cultivating scientific virtues and values, the role of the scientific community in protecting science education against policies that undermine scientific evidence, and comprehensive approaches to STEM education that address equity and inclusion and promote excellence in research.

#### Responsible Technology Innovation:

Sessions that examine how to build values into the design process, as well as emerging ethical challenges associated with new technologies such as gene editing, artificial intelligence, robotics, data mining and privacy, and facial recognition.

#### General Research Ethics:

Sessions on the broader ethical challenges facing the research community, such as science and human rights, implicit biases, environmental ethics, authorship, and intellectual property.

#### Science Communication, Education, and Public Engagement:

Sessions on the science and best practices of science communication, the social responsibilities of researchers in engaging with the public and policymakers, ethical considerations in citizen science, and integrating ethics training in STEM education.

#### Research Enterprise and Professional Development:

Sessions on both academic and nonacademic STEM careers, effective interdisciplinary collaborations, leadership training, science policy, publishing, mentorship, and diversity and inclusion.

## Give Feedback to Participants in the Student Research Showcase

Sigma Xi's 2021 Student Research Showcase competition is underway, and our presenting students want to hear from you! All participants submitted research abstracts, and the accepted students have each designed a webpage to present their research. The webpages will go live on April 26, 2021. The competition builds students' science communication skills so they can convey the value and broader impact of their research to both technical and nontechnical audiences. Sigma Xi members, students, and the public are encouraged to view the presentations and provide feedback to these future researchers.

Follow the steps below to view the projects, share your thoughts and encouragement, ask questions, and provide constructive feedback:

1. Starting on April 26, 2021, visit the Student Research Showcase page at [www.sigmaxi.org/srs](http://www.sigmaxi.org/srs).
2. Find the section called 2021 Presentations and click on a research category.
3. Click on the title of a presentation to visit the presentation website.



Each presenter submitted a website containing an abstract, slideshow, and video about their research. Judges evaluate presentations on scientific thought and method, as well as on how well presenters communicate enthusiasm for their projects; clearly state the significance of their work; effectively use text and visuals; and clearly answer questions.

Presenters compete in the high school, undergraduate, and graduate divisions. Winners in each division receive \$500, and the competition's overall top presenter receives an additional \$500. The winner of the People's Choice Award is selected based on a public vote and receives a \$250 monetary award.

## Grants in Aid of Research Recipient Profile: Atbin Doroodchi

**Grant:** \$500 (October 2010)

**Education level at time of the grant:** Undergraduate student

**Project Description:** In 2010, Atbin's undergraduate research focused on understanding the pathophysiology of restless legs syndrome (RLS), a common neurological disorder. Multiple genetic



studies have associated polymorphisms in the genes BTBD9 and MEIS-1 to a higher risk of RLS. Furthermore, an altered dopaminergic system is associated with pathogenesis of RLS. However, the functions of BTBD9 and MEIS-1 in the dopaminergic system and RLS are not clear. Atbin utilized the simplicity of the *Caenorhabditis elegans* nervous system to better elucidate the role of BTBD9 in the dopaminergic system. His work further demonstrated similar results that were evolutionary conserved in mammals. He also examined the interaction between BTBD9 and MEIS1 homologs in *C. elegans* (*hpo-9* and *unc-62*, respectively), which demonstrated that the hyperactive egg-laying phenotype that was observed in *hpo-9* mutants was counteracted by inhibiting *unc-62* mRNA through RNAi. This work will help better explain the pathophysiology of RLS, and the Grants

in Aid of Research award tremendously supported the project's advancement.

**How has the project influenced him as a scientist?** The project introduced Atbin to the basics of scientific research. Particularly, the support provided by Sigma Xi's Grants in Aid of Research award has helped open multiple career opportunities for him. He is extremely grateful to Sigma Xi, as well as to his mentors throughout his career: Dr. Diane Tucker of University of Alabama at Birmingham, Dr. Samir Khleif of Georgetown University, Dr. Jack Yu of Medical College of Georgia, and Dr. Yuqing Li of University of Florida.

**Where is he now?** Atbin is currently a fourth-year surgery resident at the Medical College of Georgia. He is planning a career in plastic and reconstructive surgery as a surgeon-scientist.

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"Tallo was created to serve as a digital ecosystem where students and professionals can showcase the talents they're most proud of, and companies and colleges can discover them and foster early connections," stated Tallo's President & CEO Casey Welch.

Tallo is an online platform that connects talent with opportunities. The Tallo app assists students in designing a career pathway, educators in recruiting top talent to their schools, and employers in developing a stable, continuous talent pipeline. More than 850,000 students and professionals showcase their skills and abilities in their online profile, connect directly with companies and colleges, and match with over \$20 billion in scholarships.

To get started on Tallo, Sigma Xi student members should visit [www.tallo.com/sigma-xi](http://www.tallo.com/sigma-xi).

## Chapter Spotlight: Millicent E. Goldschmidt Seminar Series at Rice University–Texas Medical Center

Launched in November 2020 at Sigma Xi's virtual Annual Meeting and Student Research Conference, the Millicent "Mimi" E. Goldschmidt seminar series provides an opportunity for junior faculty at institutions in the Texas Medical Center (TMC) to share their research journey. These virtual events take place quarterly and are hosted by the Rice University–Texas Medical Center Chapter of Sigma Xi.

"The seminar series was established to honor Mimi's contributions to science and to women in STEM, by highlighting the accomplishments and unique career path of junior investigators at the Texas Medical Center," says former Chapter President Daniel Harrington. Goldschmidt, a Sigma Xi Fellow and professor emerita in the Department of Diagnostic and Biomedical Sciences in the School of Dentistry at the University of Texas Health Science Center at Houston, spent her life and career mentoring and advocating for women in STEM, even in the days when, according to Goldschmidt, "it wasn't very popular to be a woman, a scientist, and a mother."

Each seminar features two speakers who give presentations on their lab's work, followed by question-and-answer sessions with attendees. Visit [www.sxricetmc.org](http://www.sxricetmc.org) for speaker biographies, upcoming dates, and registration details.



Millicent E. Goldschmidt

## Breaking Barriers: Women in STEM



### Judith Klinman

*Professor Emerita in the Department of Molecular and Cell Biology, University of California, Berkeley*

I arrived at UC Berkeley in 1978 as the first woman in the physical sciences—a challenge, to say the least. There are now many successful women in chemistry, chemical engineering, and molecular and cell biology at Berkeley. Overcoming those initial hurdles was essential but came at some cost. I have no regrets. Over the many years that I have been pursuing science, my laboratory has made observations that go against mainstream thinking. I have had to learn to trust my intuition and stick to my guns!

The one person who impacted my career the most was Mildred Cohn, a biochemist at the University of Pennsylvania. She was in my field of research, took me under her wing, and became a friend. She was a rock, so smart both scientifically and professionally; it was wonderful to see her navigate the challenges of her life.



### Lakiesha N. Williams

*Associate Professor in the J. Crayton Pruitt Family Department of Biomedical Engineering, University of Florida*

I was proudly the first Black master of science student to finish in biological engineering from Louisiana State University, the first Black PhD student to graduate in biomedical engineering from Mississippi State University, and the first female and first Black tenure-track faculty member in that respective department. I have come to realize that I value trailblazing and entering spaces as the first and the only. I encourage other women to do the same. I am hopeful that my messages of challenges and triumphs are inspirational for many women, especially those who are underrepresented and aspire to pursue careers in STEM.

Let your integrity lead you. Be true to your discipline, yourself, and to others, even if it is costly. Working with a clear conscience and peace of mind makes life easier and allows us to be more effective in our pursuit as problem solvers. I have found this to be true, and it is one of the basic tenets by which I lead my lab.

Sigma Xi asked members to share their experiences overcoming the many barriers women face pursuing careers in STEM, along with advice they would pass on to the younger generation of women entering the STEM workforce.

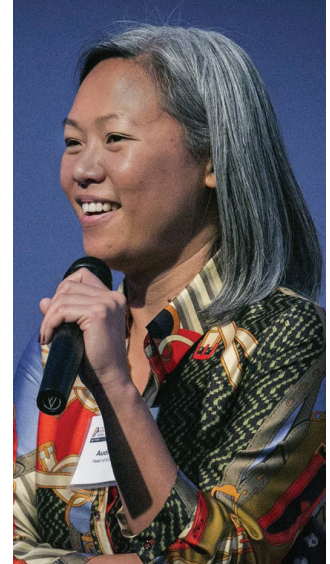


### Missy Cummings

*Professor of Electrical and Computer Engineering at the Pratt School of Engineering, Duke University*

While it is clear how I broke barriers in being one of the first female fighter pilots in the United States, as an academic, I would say the barrier I am trying to break is trying to change academia to consider the study of human interaction with technology (i.e., human-systems engineering) as a legitimate field. This is not really gender-specific, but given that women in engineering are still very much a minority, I am still fighting gender stereotypes as both an engineer and an academic.

“Put your oxygen mask on first.” This advice was given to me as a new parent, but I think it applies across all walks, especially for women. Women engineers and scientists spend too much time doing what they think is expected of them as opposed to keeping the focus on what they need from a career, family, or personal perspective.



### Audrey Chang

*Chief Operating Officer at the Alliance of Crop, Soil, and Environmental Science Societies*

Answering the question “How are you breaking barriers faced by women in your field?” makes me reflect on what I would define as “my field.” One could argue that I work at the intersection of science advocacy, operations management, and organizational development. In a very simple sense, we do not typically see many women in operations leadership positions, whether in for-profit or nonprofit organizations. We see even fewer women of color in these roles.

Do not be afraid to ask for what you believe you deserve for compensation, title, etc. Women tend to discount themselves because we perceive that opportunities are less plentiful for us, which is true, but if your market research shows that you deserve to earn a certain figure, stick with that.

Read more at [www.sigmaxi.org/2021-women-in-stem](http://www.sigmaxi.org/2021-women-in-stem).