

# Sigma Xi Today

A NEWSLETTER OF SIGMA XI, THE SCIENTIFIC RESEARCH HONOR SOCIETY

## Sigma Xi Elections Begin November 9

Active members will receive a ballot on November 9 from elections@vote-now.com to vote in the Sigma Xi elections. All who receive a ballot can vote for the president-elect, as well as for other open positions in their region and constituency. Voting will end on November 22.

**President-Elect:** The president-elect serves a three-year term starting July 1, 2021: the first year as president-elect, the second year as president, and the third year as past president.

**Directors:** Directors serve a three-year term, starting July 1, 2021. Director positions up for election serve the Baccalaureate Colleges Constituency, Canadian/International Constituency, Northwest Region, and Southeast Region.

**Associate Directors:** Associate directors serve a three-year term, starting July 1, 2021. Associate director positions up for election serve the North Central Region, Southwest Region, Membership-at-Large Constituency, and Research and Doctoral Constituency.

**Representatives on the Committee on Nominations:** Representatives on the Committee on Nominations serve a three-year term, starting immediately after the election. Committee positions up for election serve the Mid-Atlantic Region; Northeast Region; Area Groups, Industries, State, and Federal Laboratories Constituency; and Comprehensive Colleges and Universities Constituency.

Read candidates' statements at <https://www.sigmaxi.org/2020-elections>.

Sigma Xi Today is  
managed by Heather Thorstensen  
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## From the President

### Rarefied Air

Dear Sigma Xi members,

Oscar Wilde once wrote, "There are only two tragedies in life: one is not getting what one wants, and the other is getting it." Unfortunately, when I speak with senior female colleagues in academia and in industry, this seems to be our plight. We have successfully worked our way up the academic/corporate ladder, thereby "getting" what we and our institutions want. However, we often find that the climate at the top of the ladder becomes more hostile toward us, even though we have achieved the success metrics of our organizations.

As we in the sciences strive to encourage more women and underrepresented minorities to follow our paths, we often find ourselves responding to difficult questions from our students and postdocs, such as, "Why would you encourage us to enter this profession? Look at what's happening to you?"

Such questions are troubling, but not surprising. Recent research on gender differences in the sciences suggests that covert discrimination, implicit biases, career preferences, and lifestyle choices are some of the current problems hindering women's participation in STEM fields. Thus, women in leadership are often caught "between a rock and a hard place," being subjected to extreme perceptions as a consequence of their success. Other research from Catalyst, a leading research and advisory organization, asserts the following:

"When women act in gender-consistent ways—that is, in a cooperative, relationship-focused manner—they are perceived as 'too soft' leaders. On the other hand, when women act in gender-inconsistent ways—that is, when they act authoritatively, show ambition, and focus on the task—they are viewed as 'too tough.'"

At Sigma Xi, I am fortunate to enjoy a welcoming climate and supportive colleagues. But I do not enjoy this in other spaces I occupy, nor do many of my female colleagues of color. As a community of scholars, we must lead by example to combat implicit bias and hostile work climates. It does not serve the nation's nor our institution's best interests to have people who could otherwise be role models not make our profession look appealing to those who are considering entering.

Laura McCullough of the University of Wisconsin-Stout has stated, "As more women take on STEM leadership roles, understanding what their experiences are can help promote other women's aspirations to, and success in, leadership."

I write this letter shortly after the death of Supreme Court Justice Ruth Bader Ginsberg. Many women of my generation and beyond owe our access to our scientific careers and leadership to her advocacy for women's rights. At Sigma Xi, we will take the baton Justice Ginsberg has passed to us to champion equity and inclusion in scientific research. May she rest in power.



Sonya T. Smith

## Grants in Aid of Research Recipient Profile: Meng Jia

**Grant:** \$2500 in Spring 2020 thanks to a gift to the Grants in Aid of Research program from the San Antonio Lighthouse for the Blind and Vision Impaired

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

**Project Description:** I will use this grant to purchase drugs and antibodies for my experiment. My project is about investigating the role of the Yap1 protein in regulating photoreceptor differentiation during retinal regeneration. Humans have limited ability to restore vision in response to retina injuries and diseases. Most people suffering retinal damage will eventually lose their sight. The ultimate

goal of investigating the mechanisms of retinal regeneration in zebrafish is to explore possible pharmaceutical strategies to restore sight for blind people. This research may reveal a novel role of Yap1 played during a retinal regeneration process, which will advance the understanding of natural retinal regeneration mechanisms.

**How the project has influenced you as a scientist:** This project is a subproject of my PhD dissertation. This project sparked my curiosity in the regeneration field. I wish to explore more about natural regeneration processes in future.

**Where are you now?** University of Notre Dame, Indiana



## Explore Interdisciplinary Collaborations at the Annual Meeting and Student Research Conference



Featuring a wide variety of session topics, the Sigma Xi Annual Meeting and Student Research Conference on November 5–8, 2020, is a virtual conference for STEM students and professionals who want to explore interdisciplinary collaborations, including those between STEM and the arts. The following is a preliminary list of sessions. More sessions will be posted at <https://www.sigmaxi.org/amsrc20>.

### Move Track

*Symposium: Emotion and Cognition for Robotics Using Animal Inspiration*  
Vijay Kowtha, MASER, Inc.

Organizers: Joseph Cotruvo, President, Joseph Cotruvo & Associates, LLC, and Sonya Smith, Professor of Mechanical Engineering, Howard University

### See Track

*Research Presentation: Advancing Art Therapy Research Using Contemporary Neuroimaging Technologies*  
Juliet King, Associate Professor of Art Therapy, George Washington University

*Workshop: Lighting Up the Senses: Science Communication Through Video*  
Presenters: Allison Coffin, Associate Professor, Washington State University Vancouver and Kirsten (Kiki) Sanford, Broader Impacts Productions

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

*Panel Discussion: The Lead Risk Problem: Historical and Current Status*

### Research Enterprise and Professional Development Track

*Workshop: Crafting an Application for Non-academic Careers: How to*

### Highlight Transferable Skills

Presenters: Adriana Bankston, Principal Legislative Analyst, University of California Office of Federal Governmental Relations, and Nicole Catanzarite, PhD candidate, University of Maryland Neuroscience and Cognitive Science Program

### Research Ethics Track

*Panel Discussion: Look Out for Privacy Pirates! The Need for Ethics in Algorithms*

Organizers: Leslie Gruis, National Security Agency (retired) and Ramon Barquin, CEO, Barquin Solutions, LLC

## Walter E. Massey to Receive the Gold Key Award

Walter E. Massey, PhD, is the 2020 recipient of the Society's most prestigious award, the Sigma Xi Gold Key Award. It is the highest honor presented to a member who has made extraordinary contributions to his or her profession, and who 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.

"As one of the most influential and exemplary scientists in history, we are proud to have Dr. Massey as a member of Sigma Xi, and we are honored to designate him as the recipient of the Sigma Xi Gold Key Award," Jamie L. Vernon, executive director and CEO of Sigma Xi, announced.

Massey will accept the Gold Key Award and address the Society on November 7 during the Annual Meeting and Student Research Conference, which will be held virtually.

Massey joined Sigma Xi in 1966. His exceptional career includes a wide range of distinguished positions including the following:

- President Emeritus, School of the Art Institute of Chicago (SAIC)
- President of SAIC, 2010–2016
- Chair, Giant Magellan Telescope Board
- Chair, City Colleges of Chicago Trustees
- President Emeritus, Morehouse College
- Former Director, National Science Foundation
- Former Director, Argonne National Laboratory
- Former Chairman, Bank of America
- Former President and Chair, American Association for the Advancement of Science



## 2020 Sigma Xi Prizes and Awards Recipients



### William Procter Prize for Scientific Achievement

**Marcetta Y.**

**Darenbourg**

*Texas A&M University*

For significant contributions to bioinorganic chemistry and her work on the chemistry of the diiron hydrogenases. She joined the faculty at Texas A&M University, College Station, Texas, in 1982.



### John P. McGovern Science and Society Award

**Bonnie J. Dunbar**

*Texas A&M University*

For leadership and contributions in aerospace engineering; work spanning industry, academia, and government; a commitment to furthering engineering and science education at Texas A&M University; and K-12 outreach.



### Walston Chubb Award for Innovation

**Gerard L. Cote**

*Texas A&M University*

For leadership in the development of biomedical optical systems for an array of medical applications with clinical impact. His research focuses on biomedical sensing for diagnostic and monitoring applications.



### Young Investigator Award

**Charles A. Kamhoua**

*U.S. Army Research Laboratory*

For his outstanding leadership and contribution to game theory applied to cyber security. He is senior electronics engineer at the Network Security Branch of the U.S. Army Research Laboratory (ARL) in Adelphi, Maryland.



### Evan Ferguson Award for Service to the Society

**Pamela K. Kerrigan**

*College of Mount Saint Vincent*

For her commitment to Sigma Xi beyond local chapters and her passion for science education and student development. Her research involves the synthesis and purification of porphyrins.

Award recipients will be honored, and most will be plenary speakers, at the virtual Sigma Xi Annual Meeting and Student Research Conference from November 5–8, 2020. <https://www.sigmaxi.org/amsrc20>. Nominations for Sigma Xi awards are accepted through January 31 annually. See <https://www.sigmaxi.org/awards> for nomination requirements.

# The Inaugural Cohort of Sigma Xi Fellows

*Sigma Xi congratulates the inaugural cohort of Sigma Xi Fellows. They will be recognized during the virtual Annual Meeting and Student Research Conference, November 5–8, 2020.*

*The Fellow of Sigma Xi distinction is awarded on a competitive basis to members who have been recognized by their peers. A fellow must be an active (dues-paying), full member for the last 10 years continuously, or a life member, with distinguished service to Sigma Xi and outstanding contributions to the scientific enterprise.*

*The Fellow distinction will be awarded to a new class of members annually. Nominations are due by February 1 of each year. See <https://www.sigmaxi.org/fellow-nominations>.*



## **James F. Baur**

*Science Solutions Inc.*

For exceptional dedication to the accomplishment of the missions of Sigma Xi and the vitality of its chapters

## **Henry A. (Gus) Buchtel** *University of Michigan*

For distinguished contributions to the University of Michigan Chapter and the North Central Region of Sigma Xi

## **Scott F. Burns**

*Portland State University*

For distinguished contributions to geology, soil science, terroir and wines, Sigma Xi, community organizations, teaching, mentoring, lifelong learning, and colleagues worldwide

## **Lisabeth A. DiLalla**

*Southern Illinois University School of Medicine*

For distinguished contributions to the field of psychology and the broader scientific endeavor, achieved through dedication to research, teaching, mentoring, and service

## **Edward L. Fink**

*Temple University*

For distinguished scholarly contributions to the field of science and distinguished service to Sigma Xi chapters at the University of Maryland and Temple University

## **Millicent E. Goldschmidt**

*University of Texas Health Science Center at Houston*

For distinguished scholarship, service to science and society, and for paving the road for women in STEM

## **Tee L. Guidotti**

*International Consultant on Health, Safety, and Environmental Management and Sustainability*

For distinguished service to Sigma Xi as president and member and for helping assure public health and safety worldwide through teaching, research, and ethical consulting

## **Linda K. Meadows**

*The Ohio State University*

For showcasing Sigma Xi as a bright light and noble voice for scientific research in many venues during an unparalleled service progression as chapter president, director, Society president, and executive director

## **M. Patricia Morse**

*University of Washington*

For distinguished contributions to research in invertebrate zoology, STEM education, and scientific society leadership as president of Sigma Xi and the Society for Integrative and Comparative Biology

## **Ampalavanar Nanthakumar** *State University of New York at Oswego*

For distinguished contributions to the Sigma Xi State University of New York at Oswego Chapter and remarkable research results in statistics and astrophysics

## **Donna J. Nelson**

*The University of Oklahoma*

For distinguished service to Sigma Xi, other scientific organizations, the public, and for contributions to understanding additions to alkenes in research and in teaching

## **John C. Nemeth**

*Education and Research Consulting*

For distinguished, ethical contributions to the scientific enterprise through university teaching and research, environmental consulting, community service, and non-profit administration including as Sigma Xi CEO

## **Mark E. Peebles**

*Nationwide Children's Hospital The Ohio State University*

For distinguished, outstanding scientific research, particularly with respiratory syncytial virus infections in children, and a record of teaching excellence and tireless work on behalf of Sigma Xi

## **Joseph W. Rachlin**

*Lehman College*

For distinguished contributions and achievements in the biological sciences, science education, and scientific mentorship

## **Subrata Saha**

*University of Washington*

For distinguished contributions in biomedical engineering and bioethics, and for founding the Southern Biomedical Engineering Conference and the International Conference on Ethics in Biology, Engineering, and Medicine

## **Paul R. Sanberg**

*University of South Florida*

For pioneering research and bioengineering of innovative cell therapies for neurodegenerative conditions, and for national leadership in advancing academic innovation

## **Gene P. Siegal**

*University of Alabama at Birmingham*

For distinguished contributions as a physician scientist and for exemplary scholarship as a teacher, mentor, author, reviewer, and editor, and as a leader in academic medicine

## **Allen Taflove**

*Northwestern University*

For pioneering work on finite-difference time-domain (FDTD) computational solutions of Maxwell's equations of electrodynamics, and for devoted service to Sigma Xi

## **Virginia L. Trimble**

*University of California, Irvine*

For distinguished contributions to the field of astrophysics, for exemplary scholarship as an educator and mentor, and for her dedication to Sigma Xi

## **Sarah E. Wyatt**

*Ohio University*

For distinguished contributions in research, teaching, and outreach and for her leadership of the Ohio University Chapter and commitment to science literacy through Science Café