

SCHEDULE

**SIGMA XI ANNUAL MEETING AND STUDENT RESEARCH CONFERENCE
NOVEMBER 14-17, 2019
MONONA TERRACE CONVENTION CENTER
MADISON, WISCONSIN**

Get schedule details in the meeting app: Search for “Sigma Xi Conference” in the Apple App Store or Google Play.

NOVEMBER 14, 2019

8:00 a.m.–7:00 p.m.	Registration	Level 4
10:00–11:00 a.m.	<i>Sigma Xi Chapter Development</i> Workshop: Money Doesn’t Grow on Trees— Chapter Finances Tom Hard, Treasurer, Columbia-Willamette Chapter Allen Taflove, President, Northwestern University Chapter Jasmine Shah, Director of Finance and Administration, Sigma Xi	Hall of Ideas Room J
11:00 a.m.–Noon	Delegate Orientation Eman Ghanem, Director of Membership, Chapters, and Programs, Sigma Xi Jasmine Shah, Director of Finance and Administration, Sigma Xi	Hall of Ideas Room J
Noon–1:00 p.m.	Lunch Break	
1:00–2:30 p.m.	Assembly of Delegates I Jamie L. Vernon, Executive Director and CEO, Sigma Xi Geraldine L. Richmond, President, Sigma Xi David W. Baker, Treasurer, Sigma Xi Sonya T. Smith, President-Elect, Sigma Xi Emma S. Perry, Chair of the Committee on Qualifications and Membership, Sigma Xi Eman Ghanem, Director of Membership, Chapters, and Programs, Sigma Xi	Lecture Hall
2:30–2:45 p.m.	Break	
2:45–3:45 p.m.	Regional Caucuses Mid-Atlantic Region (MA) North Central Region (NC) Northeast Region (NE) Northwest Region (NW) Southeast Region (SE) Southwest Region (SW)	Hall of Ideas Room G Hall of Ideas Room H Hall of Ideas Room J Hall of Ideas Room E Hall of Ideas Room F Hall of Ideas Room I

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3:45–4:00 p.m.	Break	
4:00–5:00 p.m.	Constituency Caucuses Area Groups, Industry, State, and Federal Laboratories Constituency (MI) Baccalaureate Colleges Constituency (BA) Canadian/International Constituency (CI) Comprehensive Colleges and Universities Constituency (CM) Membership-at-Large Constituency (MAL) Research and Doctoral Universities Constituency (RD)	Hall of Ideas Room J Hall of Ideas Room E Hall of Ideas Room F Hall of Ideas Room G Hall of Ideas Room I Hall of Ideas Room H
5:00–5:15 p.m.	Break	
5:15–6:30 p.m.	Assembly of Delegates II Geraldine L. Richmond, President, Sigma Xi John Nemeth, President-Elect Candidate, CGJC Enterprises Robert Pennock, President-Elect Candidate, Michigan State University Emma S. Perry, Chair of the Committee on Qualifications and Membership, Sigma Xi Eman Ghanem, Director of Membership, Chapters, and Programs, Sigma Xi Linda H. Mantel, Evan Ferguson Award for Service to the Society Recipient, Portland State University David W. Baker, Treasurer, Sigma Xi Jamie L. Vernon, Executive Director and CEO, Sigma Xi	Lecture Hall
6:30–7:30 p.m.	Dinner Break	
7:30–8:30 p.m.	<i>Sigma Xi Chapter Development</i> Workshop: Managing a Healthy Chapter Deborah Good, President, Virginia Tech Chapter Tina Gouin, President, District of Columbia Chapter Deepshikha Shukla, Vice President, Rockford University Chapter Noah Weisleder, Past President, Ohio State University Chapter	Hall of Ideas Room J

SCHEDULE - NOVEMBER 15

7:00 a.m.–8:00 p.m.	Registration	Level 4
8:00–8:30 a.m.	Opening Remarks Jamie L. Vernon, Executive Director and CEO, Sigma Xi Geraldine L. Richmond, President, Sigma Xi William J. Karpus, Dean of the Graduate School, University of Wisconsin–Madison	Lecture Hall

SCHEDULE - NOVEMBER 15

8:30–9:30 a.m.	Plenary: Decline and Fall of the Class <i>Insecta</i>: Update on the Insect Apocalypse May Berenbaum, Professor and Head of Entomology, Swanlund Chair, University of Illinois at Urbana-Champaign; Editor-in-Chief, <i>Proceedings of the National Academy of Sciences of the United States of America</i>	Lecture Hall
9:30–9:45 a.m.	Coffee Break	Capital Promenade
9:45 a.m.–Noon	Concurrent Sessions	
9:45–10:45 a.m.	<i>Our Changing Global Environment: Life and Health</i> Keynote: Challenges of Developing New Vaccines for Neglected Tropical Diseases Peter J. Hotez, Professor of Pediatrics and Molecular Virology and Microbiology, Dean of the National School of Tropical Medicine, Baylor College of Medicine; Co-Director of the Texas Children’s Hospital Center for Vaccine Development	Hall of Ideas Room E
9:45–10:05 a.m.	<i>Our Changing Global Environment: Energy</i> Maxwell Zombies: How the Thermodynamic Undead Might Help Save the World Daniel Sheehan, Professor of Physics, University of San Diego	Hall of Ideas Room F
9:45–10:45 a.m.	<i>Our Changing Global Environment: Water</i> Keynote: Smart Sea Level Sensors for Coastal Resilience in Savannah, Georgia Virtual Presentation Kim M. Cobb, Georgia Power Chair, ADVANCE Professor, and Director of the Global Change Program, Georgia Institute of Technology	Hall of Ideas Room G
9:45–10:45 a.m.	<i>Science Communication, Education, and Public Engagement</i> Keynote: Communication and the Future of Science Dietram A. Scheufele, Taylor-Bascom Chair in Science Communication and Vilas Distinguished Achievement Professor, University of Wisconsin-Madison and Morgridge Institute for Research	Hall of Ideas Room H
9:45–10:15 a.m.	<i>Research Ethics</i> Ethical Issues in Conducting Field Research Richard Miller, Professor of Psychology, Texas A&M University-Kingsville	Hall of Ideas Room I

SCHEDULE - NOVEMBER 15

10:00 a.m.–Noon	<i>Research Enterprise and Professional Development</i> Workshop Part I: Transitioning from a Technical Mindset to a Technical Leader Mindset Dennis W. Hess, Professor and Thomas C. DeLoach, Jr. Chair in the School of Chemical & Biomolecular Engineering, Georgia Institute of Technology	Hall of Ideas Room J
10:05–10:30 a.m.	<i>Our Changing Global Environment: Energy</i> Conflict Resolution in Climate Change Mitigation Micha Tomkiewicz, Professor of Physics, Brooklyn College and PhD Programs, Physics and Chemistry, CUNY/Graduate Center, New York	Hall of Ideas Room F
10:45–11:00 a.m.	Coffee Break	Capital Promenade
11:00 a.m.–Noon	Concurrent Sessions	
11:00–11:20 a.m.	<i>Our Changing Global Environment: Life and Health</i> Human Carrying Capacity Equation Scott Sinnock, Retired, Sandia National Laboratories	Hall of Ideas Room E
11:00–11:20 a.m.	<i>Our Changing Global Environment: Energy</i> Improving Indoor Air Quality for Cooks by Reducing Emissions from Biomass Cookstoves Deborah Gross, Professor of Chemistry, Carleton College	Hall of Ideas Room F
11:00 a.m.–Noon	<i>Our Changing Global Environment: Water</i> Mapping the U.S. Food–Energy–Water Nexus at the Mesoscale: the FEWSION Project and the Creation of the FEW-View™ Visualization System Richard Rushforth, Assistant Research Professor in the School of Informatics, Computing, and Cyber Systems, Northern Arizona University	Hall of Ideas Room G
11:00–Noon	<i>Science Communication, Education, and Public Engagement</i> Office Hours: Pre-Presentation Advice for Oral Presentations Darcy J. Gentleman, Principal, DJG Communications, LLC	Exhibit Hall A, Booth 14

SCHEDULE - NOVEMBER 15

11:00–11:20 a.m.	<i>Science Communication, Education, and Public Engagement</i> Earth Observation as Central Focus for Education and Communication on Digital Earth Tim Foresman, President, International Center for Remote Sensing Education	Hall of Ideas Room H
11:00 a.m.–Noon	<i>Research Ethics</i> Harnessing the Humanities for the Anthropocene Problem Alex Levine, Professor of Philosophy, University of South Florida	Hall of Ideas Room I
11:20–11:40 a.m.	<i>Our Changing Global Environment: Life and Health</i> Are Biological Responses to Pollutants Altered with Changing Temperatures? Michael C. Madden, Adjunct Professor of Environmental Sciences and Engineering, University of North Carolina at Chapel Hill	Hall of Ideas Room E
11:20–11:40 a.m.	<i>Our Changing Global Environment: Energy</i> Advances in Thermal Insulation for Buildings David Yarbrough, Vice President, R&D Services, Inc.	Hall of Ideas Room F
11:20–11:40 a.m.	<i>Science Communication, Education, and Public Engagement</i> Service-Learning as an Agent to Promote Civic Engagement and Sustainable Practices in the Context of Global Climate Change in a Non-Majors Introductory Biology Class Samiksha Raut, Assistant Professor of Biology, The University of Alabama at Birmingham	Hall of Ideas Room H
11:40 a.m.–Noon	<i>Our Changing Global Environment: Life and Health</i> ROS Induced Germ Line Specific Genomic Instability Associated with Male Infertility and Testicular Cancer Marijo Kent-First, Visiting Professor of Biology, Florida Agricultural & Mechanical University	Hall of Ideas Room E
11:40–Noon	<i>Our Changing Global Environment: Energy</i> Mitigating Climate Change and Improving Livelihoods: Greening the Production and Use of Charcoal Tsegaye Nega, Associate Professor of Environmental Studies, Carleton College	Hall of Ideas Room F

SCHEDULE - NOVEMBER 15

11:40 a.m.–Noon	<i>Science Communication, Education, and Public Engagement</i> Aquarium of the Pacific Jerry Schubel, President and CEO, Aquarium of the Pacific	Hall of Ideas Room H
Noon–1:15 p.m.	Luncheon Plenary: Strategies for Long Life Batteries— Inspiration from Batteries that Power Implantable Medical Devices Esther Takeuchi, Recipient of the 2019 Sigma Xi Walston Chubb Award for Innovation, SUNY Distinguished Professor, Department of Materials Science and Chemical Engineering, Department of Chemistry, Stony Brook University and Brookhaven National Laboratory	Ballroom A–B
1:00–4:30 p.m.	Headshot Photography	Hall of Fame Room–Level 2
1:15–1:30 p.m.	Break	
1:30–3:30 p.m.	Concurrent Sessions	
1:30–2:15 p.m.	Multidisciplinary Student Oral Presentations ♦ Brie Tripp (Graduate Student, Portland State University), Development of a Framework and Instrument to Measure Students’ Interdisciplinary Science Understanding ♦ Kazim Moncal (Graduate Student, Pennsylvania State University), In Situ Bioprinting of Bone Tissue Constructs for Craniomaxillofacial Repair ♦ Lisa Haas (Graduate Student, University of Wisconsin-Madison), Microbially-mediated Oxidation of Trace Element-bearing Pyrite in Wisconsin Sandstone	Hall of Ideas Room G
1:30–2:30 p.m.	<i>Our Changing Global Environment: Life and Health</i> Panel: Making Environmental Information Matter to Those Who Need It Most Curt Collier, National Youth Programs Director, Groundwork USA	Hall of Ideas Room E
1:30–2:30 p.m.	<i>Our Changing Global Environment: Energy</i> Keynote: On the Road to Sustainable Production of Fuels and Chemicals from Biomass Tim Donohue, Director of the Great Lakes Bioenergy Research Center, University of Wisconsin Foundation Chairman Fetzer- Bascom Professor of Bacteriology, University of Wisconsin- Madison	Hall of Ideas Room F

SCHEDULE - NOVEMBER 15

- 1:30–2:30 p.m. *Research Enterprise and Professional Development*
Workshop Part II: Transitioning from a Technical Mindset to a Technical Leader Mindset Hall of Ideas Room J
Dennis W. Hess, Professor and Thomas C. DeLoach, Jr. Chair in the School of Chemical & Biomolecular Engineering, Georgia Institute of Technology
- 1:30–3:30 p.m. *Research Enterprise and Professional Development*
Workshop: Scientists in Public Service—Running for Office as a STEM Candidate Meeting Room MN
Shaughnessy Naughton, Founder and President, 314 Action
- 1:30–2:00 p.m. *Science Communication, Education, and Public Engagement*
Advancing Science and Serving Society: Enlightenment and the Responsibilities of the Enlightened Hall of Ideas Room H
Bassam Z. Shakhashiri, Professor, Wisconsin Initiative for Science Literacy and Department of Chemistry, University of Wisconsin–Madison
- 1:30–3:30 p.m. *Research Ethics*
Symposium: Framing the Conversation—Scientists and Engineers as Collaborators with Communities to Co-Design Innovative Solutions for Resilience and Sustainability Hall of Ideas Room I
Symposium Organizer: Christopher Papadopoulos, Professor of Engineering Sciences and Materials, University of Puerto Rico, Mayagüez
- 2:00–3:30 p.m. *Science Communication, Education, and Public Engagement*
Panel: Science of Science Communication Hall of Ideas Room H
Moderator: Dietram A. Scheufele, Taylor-Bascom Chair in Science Communication and Vilas Distinguished Achievement Professor, University of Wisconsin-Madison and Morgridge Institute for Research
Panelists:
Todd P. Newman, Assistant Professor of Life Sciences Communication, University of Wisconsin-Madison
Emily Howell, PhD student at the Department of Life Sciences Communication, University of Wisconsin-Madison
Julia Nepper, Postdoctoral Research Associate, University of Wisconsin-Madison
John Durant, Director, MIT Museum
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SCHEDULE - NOVEMBER 15

2:30–3:30 p.m.	Multidisciplinary Student Oral Presentations ♦ Matthew Warren (Graduate Student, North Carolina State University), Dietary Vitamin D3 Super Dosage Effects on Older Laying Hens in Production ♦ Samantha Thomas (Graduate Student, Johns Hopkins Bloomberg School of Public Health), Understanding Behaviors and Attitudes Towards Snakes in Rural Northeastern Tanzania ♦ Ann Fuelle (Undergraduate Student, Oakland University), Impact of Microgravity on the Accumulation of DNA Damage in Human Embryonic Kidney Cells ♦ Farida Ahmed (Undergraduate Student, Fordham University), Air Pollution and Cardiovascular Disease: A Review of Clinical Guidelines	Hall of Ideas Room E
2:30–2:50 p.m.	<i>Our Changing Global Environment: Energy</i> Bringing the Circular Economy to Research Garry Cooper, CEO and Co-Founder, Rheaply	Hall of Ideas Room F
2:30–3:30 p.m.	<i>Our Changing Global Environment: Water</i> Keynote: Water—Environment and Health (Science and Regulations) Joseph Cotruvo, President, Joseph Cotruvo and Associates	Hall of Ideas Room G
2:30–2:50 p.m.	<i>Research Enterprise and Professional Development</i> Preparing Postdoctoral Scholars for Careers at Primarily Undergraduate Institutions via a Seminar Series Jennifer Mihalick, Professor of Chemistry, University of Wisconsin Oshkosh	Hall of Ideas Room J
2:50–3:10 p.m.	<i>Research Enterprise and Professional Development</i> The Case for Universal Technological Education William P. Schonberg, Professor of Civil, Architectural, and Environmental Engineering, Missouri University of Science & Technology	Hall of Ideas Room J
2:55–3:15 p.m.	<i>Our Changing Global Environment: Energy</i> Blockchain: A Transformative Force in the Energy Industry Janak Kalaria, Senior Director, ICF	Hall of Ideas Room F
3:00–4:00 p.m.	<i>Science Communication, Education, and Public Engagement</i> Office Hours: Pre-Presentation Advice for Oral Presentations Darcy J. Gentleman, Principal, DJG Communications, LLC	Exhibit Hall A, Booth 14

SCHEDULE - NOVEMBER 15

3:10–3:30 p.m.	<i>Research Enterprise and Professional Development</i> Light Pollution: Threats to Science from Space Joel Primack, Distinguished Professor of Physics Emeritus, University of California, Santa Cruz and Past President, Sigma Xi	Hall of Ideas Room J
3:30–5:00 p.m.	Professional Poster Session and Career Networking Refreshment Break	Exhibit Hall A
5:00–5:30 p.m.	Plenary: Tracking and Analyzing the Effects of Climate Change Vint Cerf, Vice President and Chief Internet Evangelist, Google	Lecture Hall
5:30–6:15 p.m.	Interview and Audience Q & A with Vint Cerf Joe Palca, Science Correspondent, NPR Vint Cerf, Vice President and Chief Internet Evangelist, Google	Lecture Hall
6:15–6:30 p.m.	Break	
6:30–7:30 p.m.	Reception in Honor of Vint Cerf	Grand Terrace
7:30–7:45 p.m.	Break	
7:45–8:45 p.m.	<i>Sigma Xi Chapter Development</i> Workshop: Fruits of Their Labor—Chapter Program Showcase Nancy Parri, Vice-President and Treasurer, State University College at Plattsburgh Chapter Doug Jardine, Past President, Kansas State University Chapter Ashley Edwards, Secretary, Louisiana Tech University Chapter David McDowell, Vice-President and Secretary, Georgia Institute of Technology Chapter	Hall of Ideas Room I
8:00–10:00 p.m.	Student Pre-Conference Session and Orientation Darcy J. Gentleman, Principal, DJG Communications, LLC Janelle G. Simmons, Manager of Programs, Sigma Xi	Exhibit Hall A

SCHEDULE - NOVEMBER 16

7:00 a.m.–7:00 p.m.	Registration	Level 4
8:00–9:00 a.m.	Power Up Continental Breakfast	Exhibit Hall B
8:00–8:30 a.m.	Judge Orientation for Student Poster Session Eman Ghanem, Director of Membership, Chapters, and Programs, Sigma Xi	Hall of Ideas Room J
9:00 a.m.–Noon	Student Poster Session, Exhibits, and Graduate School Fair	Exhibit Hall A
Noon–1:15 p.m.	Plenary and Luncheon: Coastal Wetland Blue Carbon: The Best Climate Change Solution You Have Never Heard Of? Ariana Sutton-Grier, Recipient of the 2019 Sigma Xi Young Investigator Award; Visiting Associate Research Professor, University of Maryland, College Park	Ballroom A-D
1:15–5:15 p.m.	Headshot Photography	Hall of Fame Room–Level 2
1:30–2:30 p.m.	<i>Science Communication, Education, and Public Engagement</i> Keynote: Journalism in the Post-Factual World—Is Telling the Truth Enough? Joe Palca, Science Correspondent, NPR	Lecture Hall
2:30–5:30 p.m.	Concurrent Sessions	
2:30–4:00 p.m.	Multidisciplinary Student Oral Presentations ♦ Darryl Jennings (Graduate Student, Howard University), Enhanced Cooling Through Integration of Microchannel Heat Sinks (MCHS) and Hydrophobic Nanostructures ♦ Ramya Reddy (Undergraduate Student, Johns Hopkins University), Restoration of TDP-43 Mediated Splicing Repression in Mice Lacking TDP-43 in Their Forebrain Neurons Attenuates Neurodegeneration ♦ Arjun Moorthy (High School Student, Basis Scottsdale High School), CancerVision: A Novel In Silico Virtual Biopsy Platform to Personalize Breast Cancer Treatment ♦ Tanya Mehta (High School Student, Parkland High School), Effect of Cytokines on Functional Performance of Human Mesenchymal Stem Cells (hMSC) Encapsulated in Synthetic Wound Healing Scaffolds ♦ Eniya Krishnaraj (High School Student, American Heritage School Plantation), Investigating the Effect of Up-regulating the GABA and PKG Pathways as a Potential Therapy for Epilepsy ♦ Kishen Mitra (High School Student, West Shore Jr. Sr. High School), Organ-on-a-Chip System Using 3D Bioprinting for Detection of Cardiovascular Disease	Meeting Room MN

SCHEDULE - NOVEMBER 16

2:30–3:45 p.m.	<i>Science Communication, Education, and Public Engagement</i> Symposium: Radio Pioneers Leslie Gruis, Mathematician, National Security Agency (retired) Vijayanand Kowtha, Electronics Engineering, Naval Research Laboratory Renato Camarda, Patents and Technology Management, CACI International, Inc.	Hall of Ideas Room J
2:30–4:30 p.m.	<i>Research Enterprise and Professional Development</i> Workshop: Business Not Taught in Science Class Joseph Sabol, Chemical Consultant	Hall of Ideas Room G
2:30–5:30 p.m.	<i>Science Communication, Education, and Public Engagement</i> Workshop: Principles of Slides-Based Talks Darcy J. Gentleman, Principal, DJG Communications, LLC	Hall of Ideas Room I
3:30–4:20 p.m.	<i>Science Communication, Education, and Public Engagement</i> A Science Comedian’s Guide to Communicating Science Brian Malow, Science Comedian	Hall of Ideas Room H
3:30–5:30 p.m.	Exhibits and Graduate School Fair	Exhibit Hall A
4:30–5:30 p.m.	<i>Research Enterprise and Professional Development</i> Panel: Our Changing Academic Environments Presented by: Deborah J. Good, Associate Professor of Human Nutrition, Foods, and Exercise and Associate Department Head for Diversity Initiatives, Virginia Tech; Eman Ghanem, Director of Membership, Chapters, and Programs, Sigma Xi	Hall of Ideas Room J
4:30–5:20 p.m.	<i>Science Communication, Education, and Public Engagement</i> Can Social Media Save the Planet: The Use of Modern Communication Tools in Conservation Biology David Shiffman, CEO, David Shiffman Scientific and Environmental Consulting	Hall of Ideas Room H
5:30–6:30 p.m.	Plenary: Strategies for Advancing Oceanography and Student Research Conference Awards Ashanti Johnson, Recipient of the 2019 Sigma Xi John P. McGovern Science and Society Award; Visiting Associate Chemistry Professor, Fort Valley State University	Lecture Hall

SCHEDULE - NOVEMBER 16

6:30–7:00 p.m.	Break and Student Score Sheet Pickup	Level 4
7:00–7:30 p.m.	Reception Enjoy a cash bar and networking before the banquet.	Grand Terrace
7:30–9:30 p.m.	Sigma Xi Banquet Gold Key Award Video; Lecture: How a Sentence Changed Climate Science by Ben Santer, Recipient of the 2019 Sigma Xi William Procter Prize for Scientific Achievement and Atmospheric Scientist, Lawrence Livermore National Laboratory; Recognition of Immediate Past-President; Student Choice and Student Oral Presentation Awards Announcement; New Member Induction Ceremony, Preview of 2020 Meeting by Sonya Smith, President-Elect, Sigma Xi	Ballroom A-D
9:30–11:00 p.m.	Entertainment Members of the Ho-Chunk Nation perform traditional dances. All conference participants will be invited to learn an Earth dance.	Ballroom A-D

**YOU'RE INVITED:
STEM ART AND FILM FESTIVAL
NOVEMBER 17
MONONA TERRACE CONVENTION CENTER
MADISON, WISCONSIN
9:00 A.M.-4:00 P.M.
FREE ADMISSION**