

SCHEDULE OF EVENTS

FRIDAY, OCTOBER 23

Noon–1:30 p.m.

Young Investigator Award Keynote Luncheon

Ticket required for entry

Science That Is More Than the Sum of Its Parts

Melissa A. Kenney, Sigma Xi's 2015 Young Investigator Award Winner in recognition of her excellent, active Sigma Xi membership within 10 years of her highest earned degree; Research Assistant Professor in Environmental Decision Science and Indicators at the University of Maryland, Earth System Science Interdisciplinary Center

Multidisciplinary science combines several disciplines within the physical, natural, and social sciences. To solve societal problems requires that we combine the disciplinary parts into a more holistic, multidisciplinary science that creates something larger than its individual pieces. Thus, the next wave of major scientific contributions will necessarily move away from competitive single-investigator disciplinary insights to multidisciplinary collaboration—embracing unique combinations of qualitative and quantitative methods, new technologies, and modes of communication. As a multidisciplinary scientific society, Sigma Xi is in a unique position to support the scientists who will be transforming our current understanding and solving our most vexing problems.

Chicago Ballroom



1:30–3:45 p.m.

Professional Research and Chapter Poster Session

Professional researchers and Sigma Xi chapters present their work. Discover and ask questions about their projects.

Exhibit Hall B

3:45–4:00 p.m.

Participants Move to New York Ballroom

4:00–4:30 p.m.

Virtual Q & A with Miles O'Brien

Miles O'Brien, Science, Technology, and Aerospace Journalist; Sigma Xi 2015 Honorary Member Inductee

Moderator: **Heather Thorstensen**, Sigma Xi Manager of Communications

Award-winning journalist Miles O'Brien will join us by teleconference to share his advice for communicating with the public about science topics in the news. O'Brien is a producer and correspondent for *PBS NewsHour* and a producer and director for the PBS science documentary series *NOVA*. He is also a regular correspondent for the PBS documentary series *FRONTLINE* and the National Science Foundation Science Nation series. He serves as an aviation analyst for CNN. Sigma Xi will induct O'Brien as an honorary member this year.

New York Ballroom



SCHEDULE OF EVENTS

4:30–6:00 p.m.

Dinner on Your Own

Concurrent Evening Events

Join us at venues around Kansas City for Science Cafés. Participants are responsible for purchasing their own food and beverages. Or, head to the room called Van Horn C at the Sheraton for a demonstration from the Robotics Showcase. See the following details.

6:00–8:00 p.m.

Lessons from “The Hot Zone”

A Streetcar Named Desire

Jerry Jaax, DVM, ACLAM, COL, USA (ret)

Associate Vice President for Research Compliance and University Veterinarian, Kansas State University

The session will relate events and issues associated with an unexpected outbreak of Ebola fever in monkeys in the U.S. featured in *The New York Times* #1 Bestseller, “The Hot Zone.” Additionally, there will be information about bio- and agro-terrorism, biological arms control and counter proliferation, and the new federal initiative in Manhattan, Kansas, to improve biological agricultural research infrastructure. Finally, there will be discussions about vulnerabilities and lessons learned during the ongoing outbreak of Ebola in West Africa and during its introduction into the U.S. During this Science Café, food and drinks will be available for purchase.

Location: A Streetcar Named Desire

Crown Center Shops, Level 1

Crown Center is located at 2450 Grand Blvd, Kansas City

www.crowncenter.com/maps/A-Streetcar-Named-Desire

6:00–8:00 p.m.

Here’s the Science Behind the Beer

Border Brewing

Eric Martens, the Brewer

Learn about the science of beer making. The program begins at 6:30 p.m. No food is available in the brewery, but Grinders and other restaurants are nearby.

Location: Border Brewing

406 E 18 St., Kansas City

www.borderbrewco.com

6:00–7:00 p.m.

VEXU Demonstration

Van Horn C

This activity will expose Sigma Xi members to the current leading-edge design tools used by engineers in research and design centers.

SCHEDULE OF EVENTS

SATURDAY, OCTOBER 24

- 8:00–8:15 a.m.** **Student and Judge Orientation** **New York Ballroom**
Jamie Vernon, Sigma Xi Director of Science Communications and Publications; Interim Co-Director of Operations
Emma Perry, Past Chair of Sigma Xi’s Grants-in-Aid of Research Committee
Welcome to the Student Research Conference! Presenters and judges receive an orientation for the evaluation of student presentations and awards.
- 8:15–9:15 a.m.** **Power Up Breakfast** **Exhibit Hall B**
Enjoy a continental breakfast prior to student poster presentations.
- 9:00–11:45 a.m.** **Student Research Poster Presentations** **Exhibit Hall B**
Students present their research for evaluation by career professionals. Meanwhile, watch the Robotics Showcase’s Capture the Flag and VEXU demonstration.
- 11:45–Noon** **Participants Move to Chicago Ballroom**
- Noon–1:30 p.m.** **John P. McGovern Award Luncheon** **Chicago Ballroom**
Ticket required for entry
Bee-nomics: Can Science Save the Honey Bee?
May Berenbaum, Recipient of Sigma Xi’s 2015 John P. McGovern Science and Society Award for an outstanding contribution to science and society; Professor and Head of the Department of Entomology at University of Illinois at Urbana–Champaign
The sequence of the honey bee genome was published with great fanfare in 2006; the timing proved opportune in that unprecedented bee losses associated with what is now known as Colony Collapse Disorder. The availability of the bee genome proved transformative in elucidating basic bee biology and investigating the stresses experienced by America’s honey bees, providing new insights and new tools for investigating the health of *Apis mellifera*, the world’s premier managed pollinator.
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- 1:30–1:45 p.m.** **Break**

SCHEDULE OF EVENTS

1:45–2:45 p.m.

Concurrent Sessions

Panel Discussion: Speaking Up for Science

Empire A, Empire B

Moderator: **Jamie Vernon**, Sigma Xi Director of Science Communications and Publications; Interim Co-Director of Operations

Josh Rosenau, Programs and Policy Director at the National Center for Science Education

Jack Schultz, Director of the interdisciplinary Christopher S. Bond Life Sciences Center at the University of Missouri in Columbia, MO

Experts from the field of science communication will address the politicization of science and the ongoing conversation about science denial. The panelists will discuss how to communicate and teach controversial science in the current political environment based on their past experiences and what the social sciences are telling us. Attendees will also learn about training resources and opportunities available for students and scientists to address these challenges.

Workshop: Successful Grant Writing Using GIAR

Empire C

Host: **Emma S. Perry**, Associate Professor of Marine Biology / Center for Biodiversity at Unity College in Maine

The Grants-in-Aid of Research process is similar to, and serves as a model for, many grants. Bring your grant proposal with you and use this workshop to refine your message. We will examine the instructions and discuss both good practice and common mistakes.

2:45–3:00 p.m.

Break

SCHEDULE OF EVENTS

3:00–3:45 p.m.

Concurrent Sessions

Panel Discussion: Science, Technology, and Entrepreneurship

Empire A, Empire B

Moderator: **Jamie Vernon**, Sigma Xi Director of Science Communications and Publications; Interim Co-Director of Operations

Dane Stangler, Vice President of Research and Policy at the Ewing Marion Kauffman Foundation

Katie Boody, CEO and co-founder of the Lean Lab

The startup culture is on the rise, particularly among students and professional scientists. This panel will explore the importance of entrepreneurship to education and economic development. The panelists will share their personal stories about launching an entrepreneurial enterprise and advocating for entrepreneurship. The discussion will also highlight resources to help new entrepreneurs achieve their goals.

Workshop: Using Social Media for Science

Empire C

Host: **Heather Thorstensen**, Sigma Xi Manager of Communications

Scientific networking and outreach have changed through the advent of social networking sites like Facebook, LinkedIn, and Twitter. This workshop will introduce basic social media tools and techniques. Attendees will participate in a demonstration of how to engage with other scientists and science communicators digitally.

Workshop: Inside the Peer Review Process

Chouteau A

Host: **Beverly Lindeen**, Managing Editor, Allen Press, Inc., Lawrence, Kansas

Peer review is generally accepted as an essential part of scientific publication. Scientists are often invited to review articles in their field, despite having little or no training. This workshop will provide insight into the peer review process and offer tips on how to be an effective peer reviewer. Participants will learn about different types of peer review, the ethical issues of being a reviewer, how to write a peer review, and what happens after the review is submitted.

3:45–4:00 p.m.

Break

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4:00–4:30 p.m.

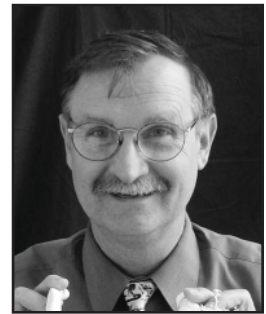
Evan Ferguson Award Keynote Lecture

Sigma Xi and You

Larry Johnson, Recipient of Sigma Xi's 2015 Evan Ferguson Award in recognition of his outstanding service to Sigma Xi and its mission; Professor of Veterinary Integrative Biosciences at Texas A&M University

Larry Johnson, who has held every officer position possible for the Texas A&M University Chapter of Sigma Xi and received their Chapter Science Communicator Award, will share what being a member of Sigma Xi means to him and what it can potentially mean to others.

New York Ballroom



4:30–5:00 p.m.

Student and Chapter Awards Presentation

Superior presenters in the Student Research Conference will receive medals and a nomination to join Sigma Xi in recognition of their exemplary work. These presenters are invited to be inducted on October 25 during the Closing Session. The District of Columbia Sigma Xi Chapter-sponsored Student Choice Award will be announced. Award-winning Sigma Xi Chapters will also be recognized, including the winner of this year's new member retention award.

New York Ballroom

5:00–6:00 p.m.

Break

6:00–8:00 p.m.

Sigma Xi Banquet and Procter Prize Keynote Lecture

Ticket required for entry
Seeing Through the Retina

David Williams, Recipient of Sigma Xi's 2015 William Procter Prize for Scientific Achievement for his outstanding contribution to scientific research and a demonstrated ability to communicate this research to scientists in other disciplines; University of Rochester's Dean for Research in Arts, Science, and Engineering; Director, Center for Visual Science, William G. Allyn Professor of Medical Optics

Although the human eye is correctly heralded as a remarkable achievement of evolution, it is nonetheless imperfect. All eyes suffer from dozens of optical defects or aberrations that blur the optical image formed on the retina. Glasses and contact lenses can correct three of the largest aberrations, but leave all the rest uncorrected. Williams's laboratory has developed a way to measure all the aberrations in the eye quickly and accurately. This has engendered new approaches to contact lens design and refractive surgery that are improving vision in patients throughout the world. Ongoing work at the University of Rochester also points the way to a new method of vision correction that may eventually avoid the need for glasses, contacts, or invasive surgery.

Chicago Ballroom



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His team has also developed a related technology, the original idea for which was borrowed from astronomy, to correct the eye's aberrations with unprecedented accuracy while taking pictures of the retina inside the living eye. This technology, called adaptive optics (AO), has made it possible to image the retina noninvasively at microscopic, cellular resolution. The eye's pupil provides a natural window through which we can now view the neural circuitry responsible for vision and even monitor the electrical signals the retina sends to the brain. This high-resolution imaging capability is helping to complete our understanding of the computations the retina performs that allow us to see, and may also eventually help to restore vision in the blind.

The Procter Prize Recipient chooses a younger scientist to receive funding through a grant-in-aid of research. David Williams has selected **Sarah Walters**, a PhD student in the Institute of Optics and Center for Visual Science, University of Rochester.

8:00–10:00 p.m. **After Party** **Chicago Ballroom**
Dance the night away at our DJ dance party.

SUNDAY, OCTOBER 25

7:00–8:00 a.m. **Breakfast** **New York Ballroom Foyer**
A light breakfast will be provided.

8:00–10:00 a.m. **Closing Session** **New York Ballroom**
All participants are welcome as we wrap up this year's meeting. We will induct student award winners into Sigma Xi. Caucuses will report their goals for the year.

10:15–10:30 a.m. **Buses to Airport** **Hotel Lobby**
Ticket purchase is required
Buses will leave at 10:15 and 10:30 to take participants to the Kansas City International Airport.