

# Sigma Xi Today

A NEWSLETTER OF SIGMA XI, THE SCIENTIFIC RESEARCH SOCIETY

## From the President

### Planning for Sigma Xi's Future

Previously, I have shared my view that Sigma Xi has evolved in directions, both financially and strategically, that limit the Society's ability to fulfill its mission and meet the expectations of its membership. As evident for years, the continuing and rapid decrease in Sigma Xi membership (a steady 75 percent decline over 35 years, and a 50 percent decrease over the past decade) clearly reflects a declining relevancy to its members. The resultant decrease in income, coupled with years of budgeting in support of deficit spending, have created significant financial instabilities. Obviously, such conditions are unsustainable, a reality requiring the immediate attention of not only the Society's leadership, but of all Sigma Xi members.

The central challenges include: (1) the financial commitments associated with the Sigma Xi Center building in North Carolina; (2) the organizational structure and operational function of the Sigma Xi Center itself, especially with respect to program

management, membership services, donor giving, and the publication of *American Scientist*; and (3) the value of the Sigma Xi mission to its membership, both established and those most recently nominated.

Since initiating my presidency, these realities have motivated a comprehensive review of the organizational structure, financial commitments, activities and programs, and the overall relationship of the Society to its members. As noted in my earlier communications, extensive discussions concerning major reforms with respect to all these challenges have commanded the attention of the Executive Committee representing the Board of Directors. It is now appropriate to announce, on behalf of the Board of Directors, that several important decisions have been made.

1. An agreement has been reached to sell the Sigma Xi Center building in Research Triangle Park, North Carolina, to Research Triangle High School (RTHS). RTHS plans to use the building as its main teaching facility, a purpose completely consistent with the Society's original purpose of serving the science and engineering communities. This transaction was completed in early March 2015. By July 2015, the Sigma Xi headquarters' operation will be moved to a new, high-quality space within

Research Triangle Park. The detailed design of the new space, developed with the Sigma Xi staff, is optimized to improve operational performance at significantly reduced cost. Several items symbolic of Sigma Xi (e.g., the walls that honor Sigma Xi's Nobel Prize laureate members, etc.) will be preserved for future use by the Society. The operation of the Sigma Xi headquarters, including the publication of *American Scientist*, is not expected to be significantly hindered during this transitional period.

2. The continuing reorganization of Sigma Xi headquarters, initiated in mid-2014 by appointing two co-directors for internal operations, outsourcing of human resources, and reducing staff, focuses on enhancing the quality and efficiency of membership services, reprioritizing the Society's mission, and strengthening *American Scientist*, all essential to the continued pursuit of excellence for the Society.

3. Detailed discussions continue throughout the Society's leadership concerning how Sigma Xi can improve its mission, both historic and potentially expanded, to increase its relevancy to its membership and to the broader community. While taking advantage of opportunities provided in its new space, the Society seeks to provide those services prioritized

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The building that Sigma Xi, The Scientific Research Society has used as its headquarters in Research Triangle Park, North Carolina, has been sold.

## Delivering Credible Science to Communities

Imagine you're a scientist in the center of a room, surrounded by approximately 45 people. They are college students and faculty, other scientists, and representatives from the government, private sector, and local community. You have five minutes to explain your position on the topic of your expertise. Then, the group asks you questions to learn directly from you and to see how your knowledge will affect their individual choices and community decisions.

This is a new type of debate. It was



Dr. George Atkinson, founder and executive director of the Institute on Science for Global Policy and president of Sigma Xi, moderated a demonstration of ISGP's debate format during the 2014 Sigma Xi Annual Meeting.

pioneered by the Institute on Science for Global Policy (ISGP) to put credible science directly into the hands of policy makers and community members. Once one has a better understanding of a scientific issue that can impact one's life, one can make more informed decisions when creating and implementing policies. At the same time, the debate can give scientists a better appreciation for the challenges faced by policy makers.

After the debates, participants meet in small-group caucuses to identify areas of consensus and actionable next steps they want to take. ISGP's debate/caucus model has been successfully used to examine a wide range of critical issues such as infectious diseases, food safety and security, and climate change.

Sigma Xi, The Scientific Research Society has joined forces with ISGP to bring two of these events to college campuses in April. The conferences, which were organized in conjunction with the colleges' students and faculty, are open to the public. In the summer, ISGP and the Society will host a training workshop for Sigma Xi's chapter leaders who are interested in becoming involved in the ISGP debate and caucus model in their local areas.

## President's Letter


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by Sigma Xi members and develop new roles identified as important by the scientific community writ large. Of specific interest is whether the ongoing relationship with programs at the Institute on Science for Global Policy (ISGP) can assist in achieving these goals. It is anticipated that decisions will be reached before July 1, 2015, the end of my term as Sigma Xi president.

While fully recognizing that many questions will appropriately arise concerning the changes announced here, I can assure you that the Society's entire leadership has approached these challenges in an exceptionally thoughtful and professional way. As regretful as some of these changes may be, the realities emanating from previous decisions in the past decades must be addressed if Sigma Xi is to recapture its influence on critical issues facing science and how science and technology are used in modern societies.

Finally, it is critical to note that these changes will not conclusively solve all the immediate challenges; these decisions have been necessary, but will not be sufficient. Once enacted, these changes provide Sigma Xi with enough stability and time to focus on ways to further improve the efficiency of its operations and the relevancy of its mission. Both are required if Sigma Xi is to provide meaningful benefits to its members and increase support from the public and broad scientific communities. It is only through such improvements, arising from deliberative discussions, that Sigma Xi can regain the financial stability and professional credibility needed to ensure a long, productive, and influential future.

I hope the motivations and background efforts associated with the changes announced here are described with sufficient clarity to garner your support. I certainly welcome questions and encourage all members to contact me through the Sigma Xi Center at executiveoffice@sigmaxi.org.

  
George H. Atkinson

### The ISGP-Sigma Xi Conferences

#### **Food Safety, Security, and Defense: Safeguarding**

#### **the American Food Supply**

April 10–11, 2015

Ursinus College,  
Collegeville, Pennsylvania

#### *Speakers:*

#### **Robert L. Buchanan, PhD**

Director of University of Maryland's Center for Food Safety and Security Systems

#### **Karen Everstine, PhD, MPH**

Research Associate at the National Center for Food Protection and Defense, a Department of Homeland Security Center of Excellence based at the University of Minnesota

#### **H. Morgan Scott, DVM, PhD**

Veterinary Epidemiologist and Professor in the Veterinary Medicine and Biomedical Sciences College at Texas A&M University

#### **Food Security: Production and Sustainability**

April 24–25, 2015

Eckerd College,  
St. Petersburg, Florida

#### *Speakers:*

#### **Alison Van Eenennaam, PhD**

Cooperative Extension Specialist in Animal Genomics and Biotechnology at University of California, Davis

#### **Rachel Goldstein, MBA**

Global Sustainability Manager for Scientific and Regulatory Affairs at Mars, Incorporated

#### **Lee DeHaan, PhD**

Staff Member of The Land Institute, Focused on Development of Kernza (Wheatgrass) as a Perennial Grain

For more details on these events, visit  
<https://www.sigmaxi.org/meetings-events/isgp-sigma-xi-events>.

## See You in Kansas City!



Get ready to visit the City of Fountains! Sigma Xi will host its 2015 Annual Meeting and Student Research Conference in Kansas City, Missouri. Members and students will convene October 22–25 at the Sheraton Kansas City Hotel at Crown Center. To sign up to attend, or to inquire about sponsorship and exhibitor opportunities, please contact [meeting@sigmaxi.org](mailto:meeting@sigmaxi.org).

Below, members of the 2015 Planning Committee welcome you to their region!



The Sheraton Kansas City Hotel at Crown Center



**Dr. Tina Niemi, President of the Kansas City Chapter**

My colleague at the University of Missouri–Kansas City, Professor Emeritus Richard Gentile, has been the driving force behind the Kansas City Chapter of Sigma Xi and has kept us moving forward. I think I speak for Dick and all of us in saying that we hope this meeting will be a catalyst for stimulating dialogue across the vibrant community of scientists working in academia, government, industry, and nonprofits across the region and the nation.

**When you're here, don't miss** one of my favorite BBQ places, Jack Stack, and Lidia's Italian Food in the Crossroads Arts District. Union Station is a beautiful place and features Science City. Crown Center shopping and Hallmark Visitors Center are next door.



**Dr. Tom Marrero, President of the University of Missouri Chapter**

Participants to the annual Sigma Xi meeting will be well able to realize the strong connections between different science disciplines. At the meeting, scientists from many disciplines will present their current understanding of myriad topics under "one roof." These presentations are often informal discussions with experts over coffee. Such communications are a fun way to learn, devise new experiments, and make friends that enhance your career.

**When you're here, and if you like history, don't miss** the Steamboat Arabia Museum (buried treasure in Missouri River from 1856 sunken steamboat) and Negro Leagues Baseball Museum. Try Arthur Bryant's BBQ (several locations/KC claims to be the BBQ capital of the world). See the animals in the 200-acre Kansas City Zoo. Or go to Country Club Plaza, the first planned suburban shopping center (1922).



**Dr. Doug Jardine, Past President of the Kansas State University Chapter**

I am thrilled to have Sigma Xi meeting in Kansas City. Kansas City is a hidden gem. It is centrally located, meaning many attendees will be able to drive and for others it is a reasonable flight time from almost anywhere. You can find it all here: history, art, sports, shopping, great barbecue, and more.

**When you're here, don't miss** the Negro Leagues Baseball Museum, Steamboat Arabia Museum, NCAA Collegiate Basketball Hall of Fame, National World War I Museum at Liberty Memorial, The Nelson-Atkins Museum of Art, Jack Stack Barbecue, shopping at Country Club Plaza, or spending an evening with friends in the Westport District or the Power & Light District.

## First African American Member Honored by University

Approximately 150 people gathered at the University of Chicago on February 21 to honor the life of a medical and research pioneer, Dr. Julian H. Lewis. Lewis was Sigma Xi's first African American member. He was inducted into the Society in 1913 by the University of Chicago Chapter. This was one of many "firsts" for Lewis. In 1915, he became the first African American to earn a PhD in physiology/pathology at the University of Chicago. Then in 1917, he became the first African American to join the university's faculty.

Speakers discussed Lewis and his work, which included his book *The Biology of the Negro* (1942). In this book, Lewis stated that there is no evidence that African Americans are biologically inferior to other groups in the human race. Lewis's work was cited by Gunnar Myrdal in *An American Dilemma: The Negro Problem and Modern Democracy*, a work that was cited in the *Brown v. the Board of Education* decision that said racial segregation in public schools

was unconstitutional.

Lewis has also been noted for being a mentor to African American University of Chicago students and faculty members.

A portrait of Lewis was unveiled that

will be featured in the Smithsonian National Museum of African American History and Culture in Washington, DC. The museum is scheduled to open next year. Members of his family were also recognized.

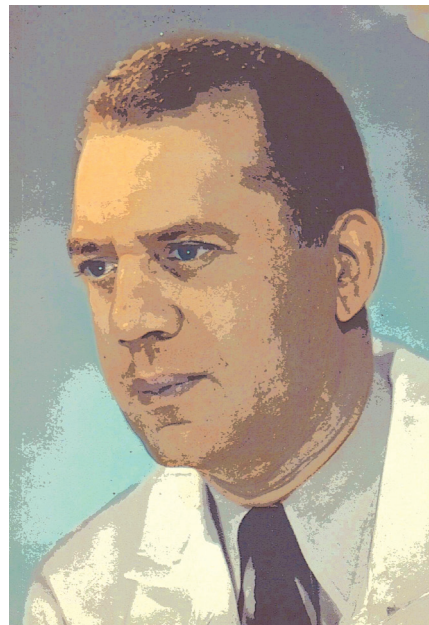
One of Sigma Xi's past presidents, Dr. Joseph A. Whittaker, attended to represent the Society. Lewis deserves recognition, Whittaker said, not only for his science but the quality of his work and the impact he had. Whittaker noted that Lewis was active in sending medical aid to other countries.

"This was an era of segregation but this guy was able to navigate working in a predominantly white institution as a minority and still was able to perform at top level," said Whittaker.

What is surprising today, Whittaker added, is that we are still having the discussion about underrepresented minorities in society. Rather than shy away from it, it's time for the issues to be addressed.

"The challenges underrepresented minorities face in the sciences still is a major issue in this country," he said. "I think people need to start looking at some of the policies and practices and inherent biases that still exist, not just personally but within organizations and systems and start thinking proactively about how to effectively address them."

A role exists for professional societies, such as Sigma Xi, and federal funding agencies in this process, he said. However, they rely heavily on academic institutions. Those institutions can improve on the way they en-



Dr. Julian H. Lewis (Image courtesy of University of Chicago Office of Events Planning)

gage young people coming out of high school to give them tools to succeed during college.

"It always comes down to leadership: Do you have the right leaders who are willing to step out and get out of the box?" said Whittaker.

The event about Lewis was sponsored by the Robbins Historical Society and Museum. Co-sponsors were the University of Chicago Civic Knowledge Project, the Office of Campus and Student Life, Theta Chapter of Alpha Phi Alpha Fraternity, and University of Chicago Black Alumni.



Dr. Joseph A. Whittaker

## It's Your Community

Last fall, Sigma Xi opened The Lab: Members to Members, a new online community for active members. Now we want your input to develop it into a valuable place to make research connections, share ideas, and learn. Let us know what you want to see in The Lab! Are you interested in interviews with prominent scientists? Do you want more frequent updates from Sigma Xi's leadership? Send your suggestions to [memberinfo@sigmaxi.org](mailto:memberinfo@sigmaxi.org) with the subject line "Idea for The Lab." If you haven't visited The Lab yet, check it out at [community.sigmaxi.org](http://community.sigmaxi.org). Your username is your email that Sigma Xi has on file. You will need to create a password. Once you're in, join the discussions!

**JOIN THE DISCUSSION:**

Ask or answer questions from your peers.



## Meet Your Fellow Companion: I.J. Wilk

*Sigma Xi promotes companionship among researchers so we highlight our members through the Meet Your Fellow Companion series. Sigma Xi member Dr. I.J. Wilk fought in World War II, worked in the chemical industry with his PhD in physical-organic chemistry, and testified for science issues in the California legislature. He spoke with Sigma Xi's Heather Thorstensen from his home in Menlo Park, California.*

**After graduating from college, with a bachelor's degree in chemistry, you went into the army in World War II. Did your chemistry degree help you during your time in the army?**

In a way because we still had to worry about chemical warfare. And since I was the only one with any chemistry in my background—I think they call it a chemical warfare expert—because of that, I got sent for months to the chemical warfare school. So yeah, I used it.

**Were you helping other troops for the potential of chemical warfare or how to use chemical warfare?**

Yeah, this was for the whole division. We had to train others just in case. For instance, one thing we were still using, although more so in the Pacific, were flame throwers. This is part of chemical warfare. So we had kind of a school, teaching others how to use flame throwers. And some people got scared. They couldn't turn it off and it was kind of tricky.

**Now that you're retired, what do you do during your days?**

You can look at my last presentation at the scientific meeting [at the American Chemical Society] that was just a couple of years ago. It was about anti-science legislation in California, shows you how much false and misinformation has been spread. So many people apparently don't like science. They got

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edited by Heather Thorstensen  
and designed by Spring Davis.

things that make no sense to those who know but when you talk to the general public or most of the members of the news media, well, they just swallow it all instead of checking. So I have been involved in something like that for a few years. And you got to keep active. In my case, one way to keep healthy is my daily dose of red wine. Most people don't know this, but red wine contains certain chemicals at reasonable concentration which are antimicrobial. I'm very much interested in wine, the chemistry of wine, composition, and the physiological activities.

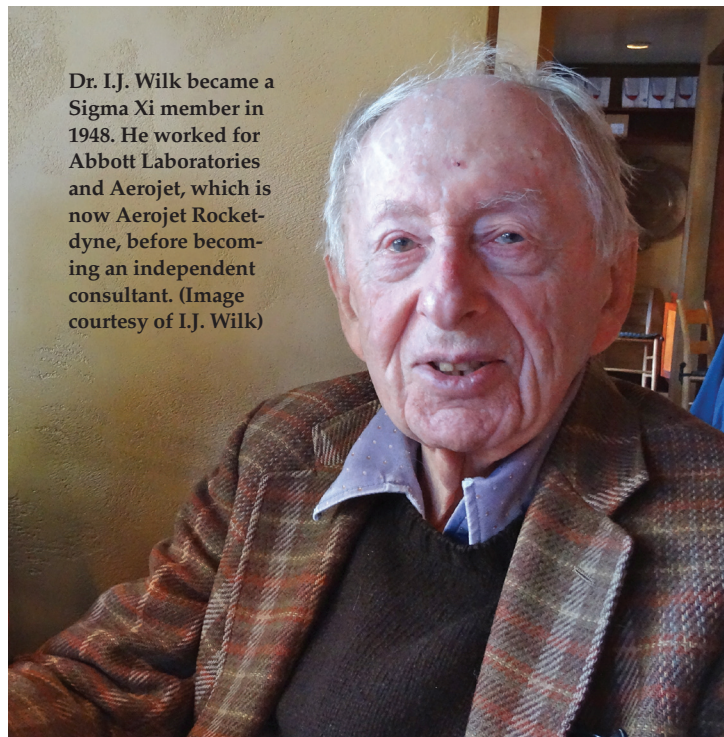
**How exactly have you been involved with helping the public try to understand science?**

Years ago, when I lived in Sacramento, I used to go to the California legislature. They had something, for instance, on air pollution. So I would appear at hearings and testify and had a chance to talk to a lot of people who were in the research of air pollution. You testified and whether it does any good, I don't know. And then you write. In my case, it was mostly presentations at meetings.

**What, in your opinion, is one of the biggest misconceptions of public health when it comes to chemicals?**

There's a good book called *The Dose Makes the Poison* [*The Dose Makes the Poison: A Plain-Language Guide to Toxicology* by Patricia Frank and M. Alice Ottoboni]. In other words, when you listen to the media, they say "this is a toxic substance" or "it's a carcinogenic substance." They never talk about the concentration. And that makes all the difference in the world.

Dr. I.J. Wilk became a Sigma Xi member in 1948. He worked for Abbott Laboratories and Aerojet, which is now Aerojet Rocketdyne, before becoming an independent consultant. (Image courtesy of I.J. Wilk)



So why don't they? They don't know. When you try to talk to them, they don't listen. This is a major problem.

**Is there a source that you would recommend to the public about how to find information about concentrations and when to know if something is actually dangerous?**

I think a good place is the National Library of Medicine. They have excellent people there. You can go to, for instance, Society of Toxicology or the American Chemical Society. [The American Chemical Society has] special sections. One would be Chemical Safety, where I've been active for many years. But you can just go to the computer and look things up and you'll see that they always list the safe dose and when it becomes toxic, along with exposure. These are all things that are covered. It just takes a little ingenuity instead of swallowing whatever somebody tells you. Don't believe them.

To watch the full interview with Dr. Wilk, visit <https://www.sigmaxi.org/news/meet-your-fellow-companions/ij-wilk>.

## Meet Your Fellow Companion: Mary Lee Jensvold

*Dr. Mary Lee Jensvold has dedicated her career to studying communication in chimpanzees. She is an associate professor in the Anthropology Department and Primate Behavior and Ecology Program at Central Washington University. She is also a Sigma Xi Distinguished Lecturer. This year, she is on research leave at Fauna Foundation, an animal sanctuary near Montreal. She moved there to continue studying two chimps from CWU, Tatu and Loulis, who know American Sign Language. After they became the final two surviving chimps at CWU, Tatu and Loulis were moved to Fauna Foundation so they could be with other chimps.*

### What work are you doing at the Fauna Foundation?

I'm working with Friends of Washoe, who are responsible for the care of Tatu and Loulis, and Fauna Foundation to develop internships. We had a lot of educational programs at Central Washington University and when the chimps left, the

institute closed and so a lot of educational opportunities were lost. So we're recreating those here at Fauna Foundation.

### Your job at Fauna Foundation is a mixture of building those educational opportunities, but you are also still doing your research and some grant writing, right?

Yes, writing private grants, mostly for operating because Fauna Foundation and Friends of Washoe are both nonprofit organizations. And then we're expanding their volunteer program ... So much of what we do is teach humane husbandry practices. At the same time, we're teaching noninvasive research practices.

I have been systemically recording Tatu and Loulis for the time of their transition. How has their behavior changed? ... It looks like they are much more social here. And then the other most interesting thing is the signing. What will happen? Tatu and Loulis

have always been in an environment surrounded by signing chimpanzees. The question was what will happen when they meet chimps that don't sign? They didn't know there was such a thing until they arrived at Fauna. I am looking at the frequency of the signing to see whether the chimp-to-chimp signing is maintained or dropping off. We know that chimps adjust to their conversational partners. We required [all humans] to know sign language and that's not a requirement at Fauna Foundation. How do the chimps adjust to

those individuals? I'm recording information in that regard as well. I'm quite interested in looking at other chimps. Will their gestures be affected by the gestures of Tatu and Loulis?

### What has surprised you the most out of your research on chimpanzee communication?

The thing they really do well is the whole pragmatic aspect of sign language. In the interaction, we use words and we use grammar and those kinds of things but it's seeded in a context of pragmatics of this social interaction. There's this study in nonverbal behavior: how it's regulated by shifts in our eye gaze, pauses, starts, stops, change in vocal intonation ... When we look at those kinds of behaviors in the chimps' interactions, they really excel. They do fantastic. Then the other thing that was so interesting as I had children: the conversations with the chimps are so reminiscent.

### What are the goals of your research?

The end goal is about understanding communication. Also, the more that I understand what complex, sentient beings chimpanzees and other apes are and we look at the things that we're doing to them, keeping them in captivity and the various ways that they're utilized and exploited in captivity, [it] really starts raising ethical issues ... My research has focused some on "We can't send them back to Africa. How are we going to make their life and condition better?" I firmly believe because they're such social beings that the crux of it is to make sure that they are in a positive social environment. I think it's important for other organizations that have captive chimps to understand that. If my research can help us understand chimps better and develop better ways to promote their well-being while they're in captivity, then I feel successful in my goal.

*To watch the full interview with Dr. Jensvold, visit [www.https://www.sigmaxi.org/news/meet-your-fellow-companions/mary-lee-jensvold](https://www.sigmaxi.org/news/meet-your-fellow-companions/mary-lee-jensvold).*



Dr. Mary Lee Jensvold with chimpanzees Tatu, sitting on the tire, and Loulis, left. The chimps communicate with Jensvold by using American Sign Language. (Images courtesy of Mary Lee Jensvold)