

Sigma Xi

The Scientific Research Honor Society

Sigma Xi was founded in 1886 by a group of Cornell students and a faculty member who believed the time had come to establish an honor society for scientists and engineers. The purpose of the society was to reward excellence in scientific research as well as to encourage a sense of companionship and cooperation among scientists in all fields. The University of Michigan Chapter was established as the 16th Chapter of Sigma Xi in 1903 when thirty-five faculty and students were granted a charter to establish a Chapter at Michigan. The first President of the local Chapter was Professor J. Playfair McMurrich.

Since 1886, *Sigma Xi* has grown to include more than 800 Chapters throughout the world. The Society now has approximately 90,000 Members and Associate Members. Chapters are found wherever scientific research is undertaken in nations throughout the world, in universities, colleges, industrial research facilities and government laboratories.

Sigma Xi Pledge: ***"I hereby pledge myself, in accordance with the purposes and objectives of Sigma Xi, The Scientific Research Society, to encourage original investigations in science, to foster companionship and cooperation among scientists, to maintain honor, integrity and honesty in all scientific activities, and to assume the other continuing responsibilities of membership."***

2019 ANNUAL BANQUET

Sigma Xi



The University of Michigan Chapter
Weber's Inn
Atrium Ballroom

May 1, 2019

5:30 P.M.

OFFICERS

	2018-2019	2019-2020 Slate of Officers
President	Henry A. Buchtel	Henry A. Buchtel
Vice-President	E. Margaret Evans	John Mansfield
Secretary	George Graham Francine Dolins	Francine Dolins
Treasurer	Richard Robertson	E. Margaret Evans
Council Members	Karen Adams	Karen Adams
	John Mansfield	George Graham
	Cynthia Marcelo	Cynthia Marcelo
	Peter Woo	Richard Robertson
		Peter Woo

2019 Science/Math Teachers of the Year Award

Dr. Peter Woo is an organic chemist retired from pharmaceutical research and development at Pfizer Inc., which provides half the funding for these awards. Dr. Woo organizes and coordinates the choice of the Teacher(s) of the Year Awards; this year he will be presenting awards to the following co-winners of the award.

Brief Biographies

[Please see inserts for full biographies]

Mr. Michael Jones (Skyline High School, Ann Arbor). Mr. Michael Jones received two nominations by his students, one of whom wrote: "Mr. Jones is one of my favorite teachers. In lessons he is very interactive and appeals to everyone's learning styles. On numerous occasions he has stayed before, during, or after school with students to help their understanding of concepts. He genuinely cares about students' understanding and their success. He is very versed in his education/teaching; he has helped me not only with my AP Chemistry work but my math and English also. He makes harder-to-comprehend concepts within grasp by relating them to everyday experiences/applications. Lessons in his class are fun because he is entertaining, funny, and witty, making learning a lot more interesting."

Dr. Deano R. Smith (Greenhills High School, Ann Arbor). From the nomination by Robert Ause, Science Department Chair and Colleague: "Deano joined Greenhills in 2007 and immediately added excellent Physics teaching skills to the faculty. As our Science Department sought to increase the enrollment of all students and particularly girls in our physics classes, Deano along with Dr. Jim Lupton (former Sigma Xi Teacher of the Year in 2013) developed two levels of first-year physics: Physics and Honors Physics. In addition, Deano developed a new course in "Conceptual Physics" for first year students. These changes increased the number of girls taking physics from 50% to 90%. Two Years later he developed another new course called 'Earth, Solar System and Universe.' Deano encourages his students not just to 'learn' science but to 'do' science as well, pursuing scientific questions through Science Fair and other extracurricular activities."

Fifty-Year Members (1969-2019)

John R. Barker (071: Elected by Carnegie Mellon University Chapter).

Dr. Barker is Professor Emeritus in the Department of Climate and Space Science & Engineering, College of Engineering at the University of Michigan. He was educated at Hampden-Sydney College (BS, 1965) and Carnegie-Mellon University (M.S., Ph.D. 1969). His post-doctoral studies were at the University of Washington and Brookhaven National Laboratory. After this, his first appointment was as research scientist at Stanford Research Institute (later SRI International). He joined the faculty at the University of Michigan as Professor in 1985 and retired as Professor Emeritus in 2014. During his career, he studied and published in diverse areas, including atmospheric chemistry, combustion chemistry, fundamental chemical kinetics, molecular energy transfer, and interstellar light emission. His greatest impact was in helping to develop the hypothesis that polycyclic aromatic hydrocarbons are responsible for infrared emissions observed from interstellar dust clouds (the "PAH hypothesis"), for which he shared the H. Julian Allen Award in 1986. He has also made important contributions to the chemical kinetics of atmospheric reactions and to developing theory and computer software for performing master equation simulations of complex gas phase unimolecular reaction systems. During his career, he served as an editor of several specialist volumes and he continues to serve as an Editor of *Advances in Atmospheric Chemistry*, a specialist series that he helped to launch.

Galen B. Fisher (012: Elected by the Stanford University Chapter).

Ronald H. Louks (016: Elected by the University of Michigan Chapter)

Richard W. Munt (016: Elected by the University of Michigan Chapter)

Ovide F. Pomerleau (014: Elected by the Columbia University Chapter).

Dr. Pomerleau received a Ph.D. from Columbia University in 1969. He came to the University of Michigan in 1985 as Professor of Psychology in Psychiatry and served as Director of the Behavioral Medicine and Nicotine Research Programs. He is the Founding President of the Society for Research on Nicotine and Tobacco. His laboratory was the first to quantitate the release of beta-endorphin and other hypophyseal hormones in response to nicotine administration. His laboratory was also part of a consortium identifying genetic-risk polymorphisms for smoking and nicotine addiction. [See insert for further information]

2019 *Sigma Xi* Banquet Address What Happens to Extreme Weather in a Changing Climate?



Perry Samson, Ph.D.

Department of Climate and Space Sciences
And Engineering
University of Michigan

Heat waves, tornadoes, hurricanes, thunderstorms and floods all have produced catastrophic damage and death for as long as records have been kept. But in a warming atmosphere can we expect these events to be more frequent or more severe? This presentation highlights the physics behind extreme weather and what is known and unknown about how future extreme events may be affected by a changing atmosphere. The talk will include examples of field expeditions and satellite missions led by the Department of Climate and Space Sciences and Engineering to explore extreme weather and climate change globally.

NEW MEMBERS & PROMOTIONS - 2019

Full Members

(*Induction today)

Ulysses G.J. Balis*
Cynthia Z. Burton*
Elise K. Hodges*
David F. Marshall*

Carol C. Persad*
Perry Samson*
Kai Sun*
X.Z. Shawn Xu

Associate Members

(*Induction today)

Catherine Barnier
Naincy R. Chandan
Christopher R. Friese
Jozet B. T. Channey*
Matthew S. Galliher
Blake Hardin*
Alexander Hill
Tanisha Hill-Jarrett*
Danielle L. Labotka*
Anna-Lisa E. Lawrence
Hojae Lee
Amanda H.C. Maher*

Sai Mohan Majhi*
Elizabeth A. North*
Matthew P. Nelson*
Kaitlin A. Oswald*
Michael V. Potter
Matthew K. Schnizlein
Briana A. Sealey
Carolyn Suh
Ariana S. Tart-Zelvin*
Field M. Watts
Steven R. Woodruff

The Chapter is grateful for a very generous donation from Ms. Cathleen Zepelin to establish a fund in memory of Dr. Harold Zepelin, a *Sigma Xi* member, who died in 2006. The fund helps maintain the honorary nature of election to membership by paying initiation and membership fees for new members. The Chapter is also very grateful for a grant from Pfizer Foundation (established by Pfizer Inc, the pharmaceutical company) that is used for our awards for the Teachers of the year. Finally, donations in support of Chapter activities from Henry Buchtel, Margaret Evans, Cynthia Marcelo and Peter Woo are also gratefully acknowledged.

PROGRAM

Reception & Banquet

Welcome Henry (Gus) Buchtel

Induction of New Sigma Xi Members Richard Robertson and Henry Buchtel
and Sigma Xi Pledge for New (and Current) Members

Science Fair Awards George Graham and Karen Adams

Junior Division

Madison Bruck (St. Patrick School - Carleton. Teacher: Maureen Wickenheiser):
"Bacterial Profiles of Soil for Identifying Locations"

Sarah Busen (St. Patrick School - Carleton. Teacher: Maureen Wickenheiser):
"Evaluation of Asphalt Effect on Water Quality"

Drew Bylow (St. Patrick School - Carleton. Teacher: Maureen Wickenheiser):
"Investigating Natural Alternatives to Chlorine in Treating Contaminated Water"

Mazin Mehmood (Michigan Islamic Academy Middle School. Teacher: Falaknaz Ali):
"The Smart Solar Tracker"

Senior Division

Bhuvna Murthy (Huron High School. Teacher: Andrew Collins): "The Use of Micellar Water to Aid Filtration of Oil-Based Contaminants in Pools"

Anirudh Cowlagi (Huron High School. Teacher: Andrew Collins): "Novel IOT-based Monitoring and Feedback System for Off-Grid PV Modules"

Science & Math Teachers of the Year Awards - 2019 Peter Woo

Michael Jones (Skyline High School)
Deano Smith (Greenhills High School)

Recognition of 50-year Sigma Xi Members E. Margaret Evans

Approval of 2019-2020 Slate of Officers Richard Robertson

Introduction of 2019 Sigma Xi Lecturer Karen Adams

Sigma Xi Banquet Lecture Perry Samson

Adjournment Henry A. Buchtel