

Sigma Xi

The Scientific Research Society

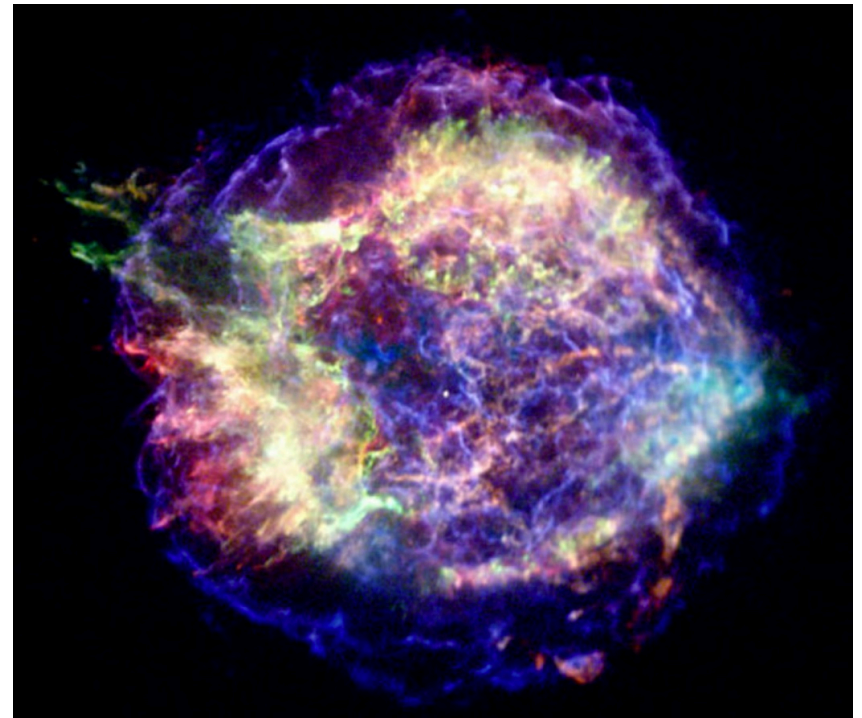
Sigma Xi was founded in 1886 by a group of Cornell students and a faculty member who believed the time had come to establish an honor society for scientists and engineers. The purpose of the society was to reward excellence in scientific research as well as to encourage a sense of companionship and cooperation 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.***"

2018 ANNUAL BANQUET

Sigma Xi



The University of Michigan Chapter
Weber's Inn
Atrium Ballroom

April 19, 2018

5:30 P.M.

OFFICERS

	2017-2018	2018-2019 Slate of Officers
President	Henry A. Buchtel	Henry A. Buchtel
Vice-President	E. Margaret Evans	E. Margaret Evans
Recording Secretary Membership Sec'y	George Graham	George Graham Francine Dolins
Treasurer	Richard Robertson	Richard Robertson
Council Members	Karen Adams Marilee Benore Francine Dolins Cynthia Marcelo Peter Woo	Karen Adams Cynthia Marcelo Peter Woo

2018 Science/Math Teacher of the Year Award

Dr. Peter Woo is an organic chemist retired from pharmaceutical research and development at Pfizer Inc., which provides 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 winner of the award.

Biography

Stephen Armstrong (Pioneer High School, Ann Arbor). Mr. Armstrong grew up here in Ann Arbor and went to Pioneer High School, where his father taught and coached for over 24-years. He earned his BS from EMU in 1987 with an undergraduate degree in both Physics & Mathematics along with a teaching certification. He earned his Masters degree from EMU in 1994 in Physics-Education (his thesis was writing a lab manual that is now called Inquire-Based Labs). He started teaching at Pioneer in the fall of 1987 so this is his 31st year of teaching. During that time he has taught Physics, AP Physics, Conceptual Physics and Astronomy in the Science Department as well as Algebra (1 & 2), Geometry, Pre-Algebra and Pre-Calculus in the Math Department. For 20-years he taught a 2-hr Physics-Math Analysis class for which he wrote the curriculum. The objective of the course was to show the inter-dependencies and the relationships that exist between Physics and Math. The kids stayed with him for 2 hours and received both a science and math credit. He describes it as a GREAT "ah-haaa" class as it often opened the kids eyes about what math was used for. He is currently the Department Chair of the Science Department and for the past 17 years he has coached the Varsity Ice Hockey team at Pioneer. He organizes and administers the Pioneer Science Fair, which is very much a collaborative project by the whole department. There are 14 science teachers in the department and all of them find a way to contribute making it a doable project. Their goal is to get kids fired up about science. His favorite projects are the projects that students come up with that are directly within their own lives, for example studying something within their sport, their musical instruments, and their hobbies.

Fifty-Year Members (1968-2018)

David L. Anderson (024: Elected by the University of Wisconsin Chapter).

Dr. Anderson received a PhD in Electrical Engineering from the University of Wisconsin, Madison. He joined the UM College of Engineering and Medical School in 1970 and established a laboratory to conduct research in the area of neural signals and the neurobiology of the auditory and vestibular systems. He helped develop the 'Michigan Probe' which is now an important tool in neuroscience. [See insert for further information]

William D. Becher (016: Elected by the University of Michigan Chapter).

BSRE 1950 Tri-State, MSE 1961 & PhD 1968 U of M. P. E. Michigan & New Jersey. **Retired:** ERIM Emeritus 1990, U of M EECS 1995. **Formerly:** EE Professor & Chair U of M-Dearborn; Dean, NJIT; Radar Lab Head & Associate Director, ERIM; & Adjunct Professor EECS. **Research:** Ultrasonic systems, MTI & SAR Radar, Missile Defense systems, Machine Vision, and Analog & Digital Computer systems.

James J. Duderstadt (043: Elected by the California Institute of Technology).

Dr. Duderstadt was the President of the University of Michigan from 1988 to 1996. He currently holds the title of President Emeritus and University Professor of Science and Engineering at the University. In 2015, he received the prestigious Vannevar Bush Award for his leadership in science and technology and his substantial contributions to the welfare of the nation through public service activities in science, technology and public policy.

John W. Gesink (016: Elected by the University of Michigan Chapter).

Dr. Gesink is Professor Emeritus in the Department of Electrical and Computer Engineering, College of Engineering and Applied Sciences, Western Michigan University, Kalamazoo, Michigan. He was educated at the University of Michigan-Dearborn (BSME in 1965) then the U of M Ann Arbor (MSEE in 1969, MS Bioengineering in 1972 and PhD in Bioengineering in 1973). [See insert for further information]

Orin G. Gelderloos (022: Elected by the Northwestern University Chapter)

Philip D. Gingerich (060: Elected by the Princeton University Chapter)

Dr. Gingerich received his PhD in geology and vertebrate paleontology from Yale University in 1974 and taught at the University of Michigan from 1974 until 2014. He is now Professor Emeritus of Earth and Environmental Sciences, Ecology and Evolutionary Biology, and Anthropology, and continues research on early Cenozoic mammals, the origin and early evolution of whales, and rates of evolution.

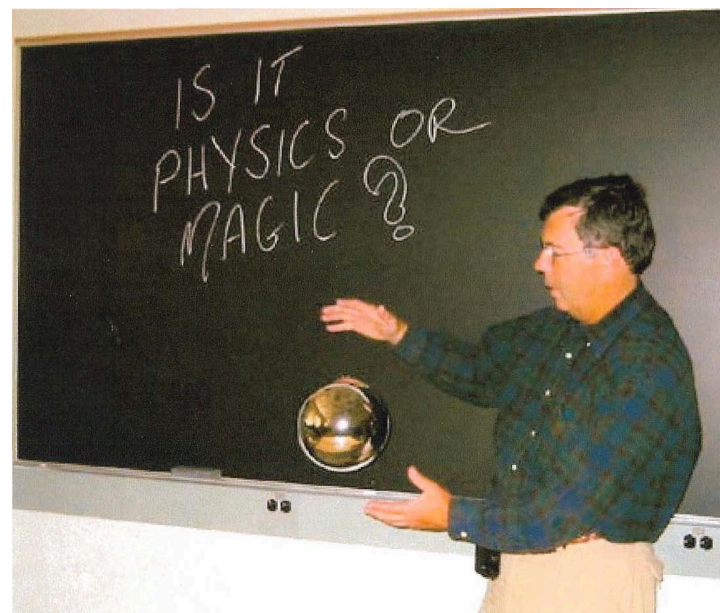
John W. Henderson (042: Elected by the Johns Hopkins University Chapter)

Dr. Henderson received his PhD in physical organic chemistry from Johns Hopkins University and taught undergraduate chemistry/ organic chemistry/biochemistry for almost thirty years at Science University of Malaysia, Trinity College in Washington DC and Jackson Community College. He retired from teaching in 2000 and worked in the pharmaceutical industry until his final retirement in 2011. [See insert for further information]

J. Michael Moore (016: Elected by the University of Michigan Chapter)

2018 *Sigma Xi* Banquet Address

Magic and the Michigan Magicians of Science



Frederick D. Becchetti, Ph.D.
Emeritus Professor of Physics
Physics Department
University of Michigan

Professor Becchetti and his group produce and study nuclear reactions with short-lived unstable nuclei, such as ^6He , ^8Li and ^7Be . The research group also develops special instrumentation and nuclear detector systems related to this research. Studies of nuclear reactions involving unstable nuclei provide new, detailed information on the creation of the elements in the Big Bang and the present density and distribution of matter in the Universe. Recently, Professor Becchetti's group has been developing techniques to provide magnetic confinement of the dose from electron and x-ray beams used in cancer therapy. Professor Becchetti is a Fellow of the American Physical Society.

NEW MEMBERS & PROMOTIONS - 2018

Full Members

**Frederick Daniel Becchetti
Ernest Robert Behringer
Georges Curtis Benjamin**

**Rowena Ng
Fariz Bin Abdul Rahman
John Stratton**

Associate Members

**Amy Katherine Bakerjian
Wassim W El-Sayed
Kiran Ariel Gafa
Hallea Josephine Garcia
Megan Hoangvi Huynh
Emily C. Laub**

**Mariam Hussein Nasser
Megan Kerri O'Bryan
Julene Justine Pummill
Natalie Radosevich
Maryellen Catherine Zbrozek**

PROGRAM

Reception & Banquet

Welcome Henry (Gus) Buchtel

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

Science Fair Awards George Graham and Karen Adams

Junior Division

Jack Johnson (Explorers Home School Association-Middle School. Teacher: Denise Kratz): "Why Were Crushable Cars Invented?"

John Paul Myers (Explorers Home School Association-Middle School. Teacher: Denise Kratz): "Mars Metals"

Senior Division

William Chung and Ryan Gudal (Huron High School. Teacher: Andrew Collins): "Evaluating Survey Instruments in Plastic and Reconstructive Surgery"

Arundhathy Suresh (Pioneer High School. Teacher: Brittany Banura): "Identifying the Components in Basil That Protect Lung Cells from Pneumonia"

Science & Math Teacher of the Year Award - 2018 Peter Woo
Stephen Armstrong (Pioneer High School)

Ethics Symposium Report Francine Dolins

Recognition of 50-year Sigma Xi Members Cynthia Marcelo

Approval of 2018-2019 Slate of Officers Margaret Evans

Introduction of 2018 Sigma Xi Lecturer Ovide Pomerleau

Sigma Xi Banquet Lecture Frederick Becchetti

Adjournment Henry A. Buchtel

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 and Cynthia Marcelo are also gratefully acknowledged.