

Kathryn Sullivan to Receive Sigma Xi's McGovern Award



Former astronaut Kathryn D. Sullivan, the first U.S. woman to walk in space, will receive Sigma Xi's 2011 John P. McGovern Science and Society Award.

Since 1984, a highlight of Sigma Xi's annual meeting has been the McGovern Lecture, which is made by the recipient of the McGovern Medal. Recent recipients have included oceanographer Sylvia Earle and Nobel laureates Norman Borlaug, Mario Molina and Roald Hoffmann.

Sullivan was awarded a bachelor in Earth Sciences from the University of California, Santa Cruz in 1973, as well as a Ph.D. in geology from Dalhousie University in 1978.

As a member of the NASA astronaut corps, she became the first U.S. woman to walk in space in 1984. Six years later, Sullivan was part of the shuttle mission that deployed the Hubble Space Telescope.

She served as an oceanography officer in the U.S. Naval Reserve with the rank of Captain and as chief scientist for the National Oceanic and Atmospheric Administration.

After leaving NASA, Sullivan served as president and CEO of the COSI Columbus, an interactive science center in Columbus, Ohio. She currently serves as director for The Ohio State University's Battelle Center for Mathematics and Science Education Policy and as a volunteer science advisor to COSI. She was appointed to the National Science Board by President Bush in 2004.

In 2004, Sullivan was inducted into the Astronaut Hall of Fame. In 2009, Sullivan was elected to a three-year term as the Chair of the Section on General Interest in Science and Engineering for the American Association for the Advancement of Science (AAAS).

Sullivan is an adjunct professor of geology
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From the Executive Director



Annual Report

In my report last year I challenged the membership to consider the characteristics of successful associations. I suggested that we emulate what successful associations do that others do not. This year as I reflect back on the previous fiscal year, I suggest that we need to go even further.

We have intangible assets that could, if converted to tangible outcomes, add to the value of active membership in Sigma Xi. I believe that standing up for high ethical standards, encouraging the earlier career scientist and networking with colleagues of diverse disciplines is still very relevant to our professional lives. Membership in Sigma Xi still represents recognition for scientific achievements, but the value comes from sharing with companions in zealous research.

Stronger retention of members through better local programs would benefit the Society in many ways. It appears that we have continued to initiate new members in numbers similar to past years but retention has declined significantly. In addition, the source of the new members is moving more and more to the "At-large" category and less and less through the Research/Doctoral chapters.

While Sigma Xi calls itself a "chapter-based" Society, we have found that only about half of our "active" members are affiliated with chapters in "good standing." As long as chapters remain a focal point for programs, we must identify methods to revitalize and work together with the shared goals.

On the positive side, this past year has seen several new efforts and continuation of other important programs at Sigma Xi.

- Public Radio International and Sigma Xi continued our collaboration, made possible by a National Science Foundation grant. The program has been successful in launching a weekly science podcast, associated website and interactive online science discussions with expert hosts.
- The Board of Directors initiated the launch of a new networking opportunity with a Sigma Xi community on the ResearchGATE platform. ResearchGATE is a rapidly growing community of scientists and engineers in over 200 countries. The value of the network lies in the potential to encourage greater communication and research collaboration among Sigma Xi members in North America and around the world.
- The National Academy of Sciences has once again renewed its contract with Sigma Xi to distribute a special pool of NAS funds through our Grants-in-Aid of Research program. This marks the 26th year of this collaboration. Since 1922, the Society has awarded small grants to more than 30,000 undergraduate and graduate student researchers.
- The *Science in the News* e-newsletter has proven to be a popular free subscription for members and non-members. Subscribers tell us that the daily newsletter is a valuable time-saver that helps them keep up with developments in science and technology reported in the mainstream media.
- A special group of advisors met last June to discuss ethical issues related to peer review and authorship. Insights shared at the summit will help shape Sigma Xi's proposed new ethics training initiatives. We are interested in developing a companion publication to our ethical guidebooks *Honor in Science* (1984) and *The Responsible Researcher: Paths and Pitfalls* (1999). In anticipation of celebrating our 125th anniversary at the 2011 annual conference, we have selected ethics as a theme for the year.

Finally, Sigma Xi members are committed to improving the human condition through their positions as engineers and scientists. The value of membership should never be equated with the "fast-food value"—where the value of a membership lasts about as long as it takes to consume a hamburger or burrito. Let's make what we have go further by fostering integrity in research, enhancing the health of the research enterprise and promoting the public's understanding of science. Let's move forward through the remainder of 2011 with vigor and enthusiasm for our Society.

Jerome F. Baker

Sigma Xi History 1936-1961

This is the third in a series of articles about Sigma Xi's history as part of our 125th anniversary celebration.

The Society's semicentennial celebration, held at Cornell University in June 1936, attracted the attention of the *New York Times*, among other national press, through the awarding of research prizes in the physical and biological sciences. Among the young members participating in the celebration were Isidor I. Rabi and Barbara McClintock, who both later received Nobel Prizes.

With the semicentennial's success and improving economic conditions in the hope for the 1930s, Sigma Xi seemed ready for further growth. In 1937 the Executive Committee formed a Committee on Policy, whose report in 1938 suggested major changes for the *Sigma Xi Quarterly*, among other things.

The *Quarterly* had grown beyond its newsletter function and sometimes published broadly interesting articles. But it had never had an official editor or editorial board. The Society Secretary simply assembled material submitted by members and chapters.

Some members urged expansion of the *Quarterly* into a journal "within the field of science more or less equivalent to the *American Scholar* [published by the United Chapters of Phi Beta Kappa] in the field of arts and literature." But others disagreed, and the Executive Committee formed

yet another committee to consider the *Quarterly's* future.

In 1939, the special committee urged a major redefinition of the *Quarterly*, recommending an increase from 200 or so pages to "some 500 to 600 pages per year." Further, while agreeing that "the *Quarterly* should continue to report" Sigma Xi news, the committee recommended an emphasis on articles presenting "recent advances in the various fields of science."

To oversee the revised journal, it recommended an editorial board and an independent (and salaried) editor in chief, authorized to commission (and pay for) "special summaries of research."

In 1941, Sigma Xi President and Yale University biologist George Baitsell, was elected Society Secretary and editor in chief of its journal. In assuming his new duties, Baitsell moved Sigma Xi's offices to Yale and focused his attention on the journal. From 1941 on, he devoted more space than ever before to articles of general scientific interest.

In 1943, G. Evelyn Hutchinson, a fellow Yale biologist, began contributing personal musings on different scientific topics to a regular feature called "Marginalia," and with his fine prose style and eye for interesting subjects he attracted many readers. "The Scientist's Book Shelf," a book review section also first appeared that year.

Emphasizing science in general, the *Quarterly* in 1942 became *American Scientist*, a name first suggested in the late 1930s.

Wartime support for science brought Sigma Xi to new heights. Firms that had previously perceived research laboratories as luxuries now saw them as golden opportunities to attract federal dollars. Instrument makers, chemical suppliers and scientific publishers all advertised their products widely, and *American Scientist's* circulation rose to more than 35,000 in 1947. Other aspects of Sigma Xi also flourished under the animated leadership of President Harlow Shapley, director of the Harvard Observatory since 1921.

Sigma Xi chartered its 100th chapter in 1948, and by 1950, it boasted about 42,000 active members. In 1947, a group of Sigma Xi members formed the Scientific Research Society of America (RESA) to encourage research in government and industrial laboratories, in the same way that Sigma Xi encouraged research in the academic community.

Throughout the 1950s and 1960s, Sigma Xi's growth continued until it had more than doubled in size.

American Scientist,
September-October 1986 •

1936

Sigma Xi celebrates 50 years




1942

Enrico Fermi (SX 1939) assembled the first artificial nuclear reactor



1945

Sigma Xi Quarterly becomes *American Scientist*



1942

J. Robert Oppenheimer (SX 1928) scientific director of the "Manhattan Project"

1945

Vannevar Bush's (SX 1934) "Science—the Endless Frontier" letter appears



1947

Scientific Research Society of America (RESA) founded (chapters later became Sigma Xi chapters)

John Bardeen (SX 1929), Walter Brattain (SX 1925) and William Shockley (SX 1932) invent the first transistor



New Sigma Xi Chapters • 1936-1962

Carnegie-Mellon Univ.
George Washington Univ.
Oregon State Univ.
Univ. of Utah
Rice Univ.-TX Med. Ctr.
Univ. of Florida
Univ. of MA
Wellesley College
Univ. of Alabama
West Virginia Univ.
Univ. of Southern CA
Virginia Tech Univ.
Bryn Mawr College
Oberlin College
Illinois Inst. of Tech.
IL State Univ./IL Wesleyan Univ.
Louisiana State Univ.
Utah State Univ.
Polytechnic/SUNY Old Westbury
Tufts Univ.
Depauw-Wabash
Emory Univ.
NC State Univ.
Saint Louis Univ.
Vanderbilt Univ.
Wayne State Univ.
Abbott Laboratories
Catholic Univ. of America
Univ. of TX SW Med. Ctr.
Univ. of Connecticut
Corning Inc.
Univ. of Georgia
Vermont
Lynchburg
Socony Mobil
Rockford College
Univ. of CA-Davis
Univ. of Hawaii
San Diego
TN A & I Fisk-Meharry
Univ. of Maine
Frederick
Oklahoma State Univ.
Roche Research
Temple Univ.

Amherst College
Auburn Univ.
Brigham Young Univ.
Butler-Indianapolis
CA State Univ.-Fresno
CDC
China Lake
Montana State Univ.
Naval Research Lab.-Edison
Univ. of Denver
Univ. of Tennessee
Albany
G. E. Electronics Lab.
NY Univ. College of Dentistry
Texas A & M Univ.
Alamo
Alfred Univ.
Argonne National Lab.
Boston Univ.
Columbia-Willamette
DuPont
Franklin Research Ctr.
Hanscom
Kansas City
Texaco Research Ctr.
Triple Cities New York
Univ. of Notre Dame
Alcoa
Colorado State Univ.
Georgia Inst. of Tech.
GTE Labs.
M.W. Kellogg
Beloit College
Rollins College
San Jose State Univ.
Tuskegee Univ.
Univ. of AK-Fayetteville
Univ. of RI
Brooklyn College
Franklin & Marshall College
Lamar Univ.
Univ. of Redlands
Lever Research Ctr.
MO Univ. of S&T
Oak Ridge
Stevens Inst. of Tech.

Univ. of NH
Univ. of NM
Univ. of TX Med. Branch
Atlanta Univ. Ctr.
CA Polytechnic State Univ.
Florida State Univ.
Hughes Labs.
Louisville
Univ. of LA at Lafayette
Univ. of North Texas
Boston College
Humboldt State Univ.
Loyola Univ.
Texas Womens Univ.
Univ. of MN at Duluth
Univ. of TN Memphis
Alaska
American Univ. of Beirut
Army Research Lab. (ARL)
Chesapeake
Denison Univ.
Howard Univ.
Natick
New Mexico State Univ.
New Orleans
Ohio Wesleyan Univ.
Southern Univ.
Univ. of AL-Birmingham
Univ. of South Dakota
CA State Univ.-Chico
Fordham Univ.
Drake Univ.
Gulf Coast
Midland
Monsanto Science
Naval Postgraduate School
Rockefeller Univ.
Saint John's Univ.
Tahoma
Univ. of SC
Adelphi Univ.
Villanova Univ.
Andrews-Whirlpool
Knox College
Nalco Chemical
Northern Westchester

Southern Indiana
Univ. of Delaware
Vassar College
Ventura County
Wooster Ohio
Albion College
Claremont Colleges
Hollins Univ.
Jacksonville
Marquette Univ.
NM Highlands Univ.
Olin
Portland State Univ.
San Fran. State Univ.

Texas Tech Univ.
Univ. of MA-Lowell
Boeing NA
Eckerd College
Ford Motor Company
Lafayette College
Ohio Univ.
South Dakota State Univ.
Univ. of New Orleans
Univ. of PR at Mayaguez
Ball State Univ.
CA State Univ.-Hayward
Central Michigan
Hartford

LCA Research
Rosalind Franklin Univ.
SUNY at Stony Brook
Univ. of LA at Monroe
Tidewater Virginia
Univ. of The South
Whitman College-Walla Walla Univ.
RESA Chapter
Disbanded
Now part of Greater New Orleans
Now part of Univ. of WI

Sigma Xi Nobel Laureates

Chemistry

1946 John H. Northrop
1946 James B. Sumner
1948 Arne Tiselius
1949 William F. Giauque
1951 Edwin M. McMillan
1951 Glenn T. Seaborg
1954 Linus Pauling
1955 Vincent du Vigneaud
1959 Jaroslav Heyrovsky
1960 Willard F. Libby
1961 Melvin Calvin

Peace

1962 Linus Pauling

Physics

1937 Clinton Davisson
1938 Enrico Fermi
1939 Ernest Lawrence
1943 Otto Stern
1944 Isidor Isaac Rabi
1945 Wolfgang Pauli
1946 Percy W. Bridgman
1952 Felix Bloch
1952 E. M. Purcell
1955 Polykarp Kusch
1955 Willis E. Lamb
1956 John Bardeen
1956 Walter H. Brattain
1956 William B. Shockley

1957 Chen Ning Yang
1959 Owen Chamberlain
1959 Emilio G. Segrè
1960 Donald A. Glaser
1961 Robert Hofstadter

Physiology or Medicine

1943 Henrik Dam
1943 Edward A. Doisy
1944 Joseph Erlanger
1944 Herbert S. Gasser
1946 Hermann J. Muller
1947 Carl Cori
1947 Gerty Cori
1950 Philip S. Hench
1950 Edward C. Kendall
1951 Max Theiler
1952 Selman A. Waksman
1953 Fritz Lipmann
1954 John F. Enders
1954 Frederick C. Robbins
1954 Thomas H. Weller
1956 Dickinson W. Richards
1958 George Beadle
1958 Joshua Lederberg
1958 Edward Tatum
1959 Arthur Kornberg
1961 Georg von Békésy
1962 Francis Crick
1962 James Watson

1948

100th Sigma Xi chapter was chartered



The National Science Foundation is created

1950

1952

Grace Hopper (SX1934) developed the first compiler for a computer language

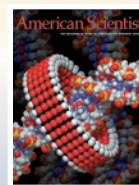


1953

Jonas Salk (SX 1945) developed polio vaccine



Francis Crick (SX 1954) and James Watson (SX 1959) discovered the structure of DNA



Amundsen-Scott South Pole Station established

The first communications satellite, Echo 1, is launched

1957

1960

McGovern Award

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at The Ohio State University and a Fellow of the AAAS and the American Institute of Astronautics and Aeronautics. A Sigma Xi member since 1989, she is also a member of the Woods Hole Oceanographic Institution, the Explorers Club, the Society of Woman Geographers and Association of Space Explorers.

She has been awarded honorary degrees by five universities. Her honors include the *Aviation Week & Space Technology* Aerospace Legend Award; Astronaut Hall of Fame; and the Public Service Award from the National Science Board, in recognition of lifelong commitment to science education.

She has also received the Juliette Award for National Women of Distinction, Girl Scouts USA; the Lone Sailor Award, U.S. Navy Memorial Foundation; NASA Medal for Outstanding Leadership; AIAA Haley Space Flight Award; AAS Space Flight Achievement Award; and the National Air and Space Museum Trophy, Smithsonian Institution.

In January 2011, Sullivan was nominated by President Barack Obama to be an assistant secretary of commerce. •



U.S. Rep. David Price Named Honorary Sigma Xi Member

U.S. Congressman David Price (D-North Carolina) will be inducted as an honorary member of Sigma Xi at the Society's annual meeting next November in Raleigh, North Carolina.

Beginning in 1983, distinguished individuals not otherwise eligible for membership in Sigma Xi, who have served science, or the Society, in a manner or to a degree that merits such recognition, have been elected honorary life members by the Board of Directors.

Price was named a "Champion of Science" by the Science Coalition, a non-profit, nonpartisan organization of 50 of the leading public and private research universities in the U.S. The North Carolina chapter of the Sierra Club has also recognized him as their "Legislator of the Year."

Among other accomplishments, Price authored a bill to establish the National Science Foundation's Advanced Technological Education program, which helps community colleges upgrade their training programs for jobs in high-tech fields. From his position on the Appropriations Committee, he supported the effort to double funding for the National Institutes of Health over five years and has pressed for a similar boost to the National Science Foundation.



He is a recipient of the American Political Science Association's Hubert H. Humphrey Public Service Award and also has been recognized by Voices for AmeriCorps, the NC Low-Income Housing Coalition, the NC Public Transportation Association,

the Association of Community College Trustees, the National Association of Land-Grant Colleges and State Universities, and other organizations for his work in housing, education, and transportation policy.

Before going to Congress in 1987, Price was a professor of political science and public policy at Duke University. He is the author of four books on Congress and the American political system.

Born in 1940, Price grew up in the small town of Erwin in eastern Tennessee. His father was a high school principal, and his mother was an English teacher.

Price was a Morehead Scholar at the University of North Carolina at Chapel Hill. He earned his B.A. in 1961 and continued his education at Yale University, where he received a Bachelor of Divinity degree and a Ph.D. in political science. •

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