

New Program to Boost Membership

Sigma Xi's new Member-Get-A-Member program gives all active Sigma Xi members a chance to earn a free year of membership by recommending five new members during a one-year period.



Active Sigma Xi members should recommend their qualified friends, students, colleagues and fellow scientists and engineers to the honor of Sigma Xi membership. Any active Sigma Xi member who recommends five new members who are then approved for membership between now and June 30, 2012 will receive one free year of Sigma Xi membership.

Potential new members must list their Sigma Xi recommender on the "Recommended by" line at the bottom of their nomination forms. A "Recommended by" line has also been added to the online nomination form at www.sigmaxi.org. The recommender's name must be included on the nomination form to receive credit for the recommendation.

The following stipulations apply to the Member-Get-A-Member program:

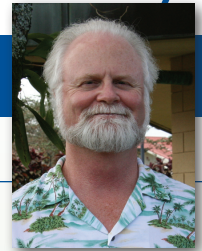
The program is open to all active (dues-paid) Sigma Xi members, regardless of whether they are full or associate, student, transitional, emeritus, or regular, or whether they belong to a chapter or are an at-large member. The recommender does not have to be a nominator but can be one of the nominators. However, each new member can only be recommended by one Sigma Xi member, so both nominators can not get credit for one individual.

All five new members must be approved, processed and paid during the same fiscal year (July 1–June 30) to count toward the program.

Free membership will be credited to the recommender for the next fiscal year (July 1–June 30) once membership for all five new members has been processed and paid in full. If the recommender has already paid for the next fiscal year of membership, credit

(continued on page 352)

From the President



Dear Colleagues and Companions in Zealous Research

It is indeed an honor for me to have been elected president of our international honor society for scientists and engineers. Sigma Xi was created 125 years ago with high ideals, a worthy mission and an inspiring vision that remain critical to science and engineering in the 21st Century. As incoming president, I will seek to further the mission of Sigma Xi.

Public confidence in the fundamental truths derived from application of science is perhaps more critical now than at any time in the history of our honor society. From openness in research to accuracy in conducting and reporting research to integrity in the peer review process and authorship, we have an obligation to our members and the public to focus on these issues.

I applaud my friend and colleague, our immediate past-president, Joe Whitaker. Dr. Whitaker deserves our gratitude for providing outstanding leadership and initiating a new hope for the evolution of our esteemed honor society. My intention will be to build upon the spark Joe ignited during his tenure, and implement an enabling strategy focused on substance and action that will propel us forward. My unbridled passion will be to do all I can to advance Sigma Xi to a new level of international prominence and recognition as *the* international honor society.

The Framework for Action that I presented a year ago for actions needed to enable long-term growth and achievements consistent with our Society's mission and vision are as follows:

Pro-Active Engagement with Global Issues - Sigma Xi must become more pro-active in reaching out to international organizations and partnering with them to develop policies and programs that address global problems such as: sustainable energy, disease, natural resource management, climate change, etc.

Evolution of *American Scientist Magazine* - The greatest visible product of Sigma Xi must evolve, and it must be viewed as globally inclusive and more clearly reflect the vision of the Society.

Realignment of Sigma Xi Regions - Current regional organizational structure of Sigma Xi should be redefined as world regions. Initially, there could be 9 regions: 6 U.S. regions, 1 Canada region, 1 Europe Region, and 1 Global Region-at-Large (to include any individual or chapter not in a currently qualified defined region).

Annual Meeting and Research Conference Transition - Our Annual Meeting format and venues should be revised such that the current Annual Meeting would be held on a biennial basis and be referred to as the Global Meeting. In alternate years, only regional meetings will be held. The venues and formats for the individual regional meetings would be determined by the regions themselves.

It is time for us to focus on our core values of fostering cooperation among scientists and engineers, promoting honor, integrity and honesty in all scientific activities, and nurturing the next generation of zealous companions in research around the world. At a grassroots level, this evolution has already begun.

Please join me in November to celebrate the 125th anniversary of Sigma Xi, The International Scientific Research Society, when we will honor the past and look to the future with a conference theme focus on fostering integrity in science.

Michael Crosby

Sigma Xi History 1961-1986

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

In 1974, the Scientific Research Society of America (RESA) merged with Sigma Xi, under the name of Sigma Xi, The Scientific Research Society of North America. A few years later, the present name was adopted: Sigma Xi, The Scientific Research Society.

The merger brought the membership to an all-time high—along with the number of chapters and size of our financial assets. Sigma Xi's programs expanded during this period, reflecting both an increase in organizational requirements (including the purchase of a new more spacious building) and in social concerns. The Distinguished Lectureship, Grants-in-Aid and Science-and-Society programs evolved most dramatically.

As part of this evolution, the Society's executive director Ian Jackson began to foster and enhance the Society's confederal nature—altering the function of headquarters

from simply managing the national affairs and producing *American Scientist* to helping to build and promote the activities of the local chapters.

In 1983, Sigma Xi began inducting noted science advocates, top science journalists and friends of research who have made

important contributions to science but are ineligible for Sigma Xi membership as Honorary Members.

Recognizing that integrity in scientific research is vital to the advancement of knowledge and to the maintenance of public confidence in science, the Society published its first ethics booklet *Honor in Science* in 1984.

Sigma Xi's Centennial in 1986 provided an opportunity to address issues of importance to science and society in the decades ahead.

With support from the National Science Foundation, Sigma Xi sought to develop "A New Agenda for Science," a project that identified seven important areas for ongoing consideration: public understanding of science, science in the policy development process, interdisciplinary research, science education, the international dimension, cooperation in science and technology, and ethical issues in research.

American Scientist, September-October 1986 •

Sigma Xi Nobel Laureates

Chemistry

1965 Robert B. Woodward
1966 Robert S. Mulliken
1968 Lars Onsager
1970 Luis Leloir
1972 Christian B. Anfinsen
1972 Stanford Moore
1972 William H. Stein
1973 Geoffrey Wilkinson
1974 Paul J. Flory
1976 William Lipscomb
1979 Herbert C. Brown
1980 Paul Berg
1980 Walter Gilbert
1981 Roald Hoffmann
1983 Henry Taube
1984 Bruce Merrifield
1985 Herbert A. Hauptman
1985 Jerome Karle
1986 Dudley R. Herschbach

Economics

1969 Ragnar Frisch
1972 Kenneth J. Arrow
1978 Herbert A. Simon

Peace

1962 Linus Pauling
1970 Norman Borlaug

Physics

1963 Maria Goeppert-Mayer
1963 Eugene Wigner
1964 Charles H. Townes
1965 Richard P. Feynman
1965 Julian Schwinger
1967 Hans Bethe
1968 Luis Alvarez
1969 Murray Gell-Mann
1972 Leon N. Cooper
1972 Robert Schrieffer
1972 John Bardeen
1973 Ivar Giaever
1975 Ben R. Mottelson
1975 James Rainwater
1976 Burton Richter
1977 Philip W. Anderson
1977 John H. van Vleck
1978 Arno Penzias
1978 Robert Woodrow Wilson
1979 Sheldon Glashow
1980 James Cronin
1980 Val Fitch
1981 Nicolaas Bloembergen
1981 Arthur L. Schawlow
1982 Kenneth G. Wilson
1983 Subramanyam Chandrasekhar
1983 William A. Fowler

Physiology or Medicine

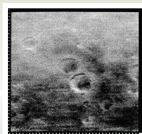
1962 Francis Crick
1962 James Watson
1964 Konrad Bloch
1966 Charles B. Huggins
1966 Peyton Rous
1967 Haldan K. Hartline
1967 George Wald
1968 Robert W. Holley
1968 Marshall W. Nirenberg
1969 Max Delbrück
1969 Alfred D. Hershey
1969 Salvador E. Luria
1970 Julius Axelrod
1971 Earl W. Sutherland, Jr.
1972 Gerald M. Edelman
1974 Christian de Duve
1974 George E. Palade
1975 David Baltimore
1975 Howard M. Temin
1976 D. Carleton Gajdusek
1977 Andrew V. Schally
1977 Rosalyn Yalow
1979 Allan M. Cormack
1980 George D. Snell
1981 David H. Hubel
1981 Roger W. Sperry
1983 Barbara McClintock
1986 Stanley Cohen
1986 Rita Levi-Montalcini

1964

Michael DeBakey (SX 1935) is first to perform a successful coronary artery bypass



Edward Lorenz publishes discovery of the 'butterfly effect', significant in the development of chaos theory



First photographs of another planet's surface by the Mariner 4 mission to Mars



Neil Armstrong, mission commander of Apollo 11, becomes the first man to walk on the moon

1970

American Scientist adopts a full-color, magazine format



1971

Francis G. Howarth (SX 1969) discovers communities of specialized cave animals living in lava tubes at Hawaii Volcanoes National Park



1973

Herbert Boyer (SX 1962) and Stanley Cohen (SX 1979) pioneer gene therapy and the biotechnology industry



New Sigma Xi Chapters • 1963-1986

- Central AR College of The Holy Cross
ICI Americas ♦♦
Marathon ♦♦
Mount Holyoke College
ND State Univ.
UC-Riverside
Univ. of the Sciences in Philadelphia
VA Commonwealth Univ.
Wittenberg Univ.
Air Force Dayton ■
American Univ.
BASF Corp. ♦♦
Central TX Research Society ♦♦
Crompton Corp. ♦♦
Magic Valley ■
NW State Univ. of LA
St. Bonaventure Univ.
Sam Houston State Univ.
Seton Hall Univ.
Univ. of MT
Wichita State Univ.
Bartlesville ♦
Arizona State Univ.
Black Hills Regional Cincinnati Fed. Environmental
CO School of Mines
Dubuque
Hamilton College
Marshall Univ.
Merrimack College
Northeastern Univ.
Orange County
Panama City ■
Picatinny ■
SUC at Plattsburgh
Stephen F. Austin State Univ.
TX A & M - Commerce
Tulsa
Univ. of NV-Las Vegas
- Univ. of WI-Oshkosh
Wabash Valley
Wake Forest Univ.
Charlotte
Clemson Univ.
College of William And Mary
Duchesne
Fairleigh Dickinson Univ.
Greensboro
Idaho State Univ.
Ithaca College
Medical College of GA Club ♦
MS State Univ.
MT Tech Univ.
Roanoke College
Southern IL Univ.-Carbondale
SUC at Fredonia
SUC at New Paltz
TN Technological Univ.
Univ. of Bridgeport
Univ. of Houston
Univ. of KS Medical Center
Ursinus College
Weber State Univ.
West TX State Univ. ♦
Western WA Univ.
Eastern KY Univ.
Eastern NM Univ.
Eastern WA Univ-Spokane
Georgetown Univ.
John Deere ■
Kent State Univ.
Loyola Marymount Univ.
Northern Arizona
OH Northern Univ.
Oneonta
Santa Clara Univ.
Sonoma State Univ.
Southern Appalachian
SUC at Buffalo
TX Christian Univ.
Thomas Jefferson Univ.
- Tri-Cities WA
U.S. Naval Academy
Univ. of MS Medical Center
Univ. of PR at San Juan
Univ. of Southern MS
Upper OH Valley ♦
Western KY Univ.
Western PA
Wilkes Univ.
AR State Univ.
Baylor Univ.
CO State Univ. - Pueblo
Dartmouth College
Geneva
Gustavus Adolphus College
Lake Forest College
Louisiana Tech Univ.
Manhattan College
Manitoba
Middle TN State Univ.
MN State Univ., Mankato
Morehead State Univ. ♦
NM Inst. of Mining and Tech
Northern MI Univ.
Pacific Univ. ♦
Queens College
Regis College
Slippery Rock Univ.
Southern IL Univ.-Edwardsville
SUC at Brockport
SUNY at Cortland
Tampa Bay
Tifton
Univ. of Central MO
Univ. of Northern CO
Univ. of Scranton
Univ. of WI-La Crosse
Western Carolina Univ.
Central MO State Univ. ♦
CA State Univ., Fullerton ♦
Appalachian State Univ.
- Bangkok Thailand
Delta
Eastern MI Univ.
GA Southern Univ.
Hope College
Hunter College
IN Univ. Medical Center
IN Univ. of PA
Medical College of OH at Toledo ♦
Monterrey, Inst. of Tech.
Naval Air Warfare Center Training Systems ■
Northern IL Univ.
Rider Univ.
SUNY Health Science Center at Brooklyn
Tri-State Univ.
Univ. of Akron
Univ. of Central FL
Univ. of Memphis
Univ. of Miami
Univ. of Nevada
Westchester ■
Western IL Univ.
Williams College
Wright State Univ.
York College of CUNY
Emmanuel College ♦
Albany, NY ■
CA State Polytechnic Univ.
CA State Univ.-Sacramento
CA State Univ.-San Bernardino
FL Inst. of Tech.
McDaniel College
McMaster Univ.
Muskingum College
St. Cloud State Univ.
SW MO State Univ.
State Univ. of NY at Oswego
UC-Santa Barbara
Univ. of Central OK
- Univ. of CT Health Center
Univ. of Hartford
Univ. of MA-Dartmouth
Univ. of Richmond
Univ. of TN at Martin
Univ. of WI-Green Bay
Youngstown State Univ.
C.W. Post College
City College of the CUNY
Clarkson Univ.
DOE/NRC
East Stroudsburg Univ. of PA
FDA ■
George Mason Univ.
Longwood/Hampden Sydney Colleges
MI Technological Univ.
MS Delta ♦
Montclair State Univ.
Prairie View A & M Univ.
St. Joseph's Univ.
San Joaquin Valley
State Univ. of West GA
Suffolk Univ. ♦
Univ. of West FL ♦
Center For Naval Analyses
Drexel Univ.
FL Atlantic Univ.
Miami Univ.-OH
Shreveport
Univ. of MS
Univ. of TX at Arlington
VA State Univ.
Academy of Natural Sciences
Avalon
CA State Univ.-Northridge
David W. Taylor
Environmental Research and Tech., Inc. ♦♦
GM R&D Center ■
- Highland Rim ♦
Newark ■
Rush Univ.
Univ. of WI-Milwaukee
CA State Univ.-Bakersfield
East Carolina Univ.
Fort Hays
Pace Univ.
Peoria
Pikes Peak
Sangamon State Univ.
Univ. of WI-Eau Claire/Stout
Boise State Univ.
Bowling Green State Univ.
Central Savannah River Area
Lehman College
Oakland Univ.
Omaha
Ramapo College of NJ
Towson
Univ. of British Columbia
Univ. of Dayton
Univ. of Hawaii-Hilo
Univ. of South AL
Univ. of TN at Chattanooga
Univ. of TX at El Paso
Amoco Research Center ♦
Calspan Corp.
Johnson & Johnson
Loma Linda Univ.
Mt. Sinai School of Med.
NIST
NJ Inst. of Tech.
Southern Methodist Univ.
Univ. of OK Health Science Center
Univ. of Toledo
Kean College of NJ ♦
Abbott Labs.
Guelph
- Southcentral PA
CA State Univ.-Dominguez Hills
Minot State Univ.
Murray State Univ.
Western CT State Univ.
IN Univ. at South Bend ♦
Quinnipiac
Univ. of Calgary
IN State Univ. ♦
Charleston
Northeastern OK State Univ.
Univ. of AL in Huntsville
FLA & M Univ.
Univ. of WI-Stevens Point
Louisiana State Univ. Medical Center ♦
Ottawa
Univ. of Northern IA
Univ. of TX at Dallas
Univ. of Toronto
Mercy College ♦
Grand Valley State Univ.
IN Univ.-Purdue Univ. at Ft. Wayne
Philadelphia College of Osteopathic Medicine
Southeast MO State Univ.
Greenbrier Valley
Northwestern PA
RI College
Allegheny Univ. of Health Sciences ▲
Australian
Four Corners
Univ. of NC-Wilmington
Univ. of NE at Kearney
Univ. of NC-Asheville

- RESA Chapter
- ♦ Disbanded
- ▲ Now part of Drexel Univ.

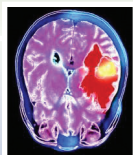
1975

Victor Wouk (SX 1940) creates prototypes of electric and gasoline-electric hybrid vehicles



1977

Magnetic Resonance Imaging invented by Raymond V. Damadian (SX 1972)



First baby conceived by *in vitro* fertilization, Louise Joy Brown, is born (British scientists Robert Edwards and Patrick Steptoe)

1983

Sally Ride (SX 1978) becomes first American woman in space



Seymour Cray develops the Cray-1, the first supercomputer

1984

Sigma Xi publishes *Honor in Science*



A high-temperature super-conductor is invented by J. Georg Bednorz and Karl A. Muller

Honor in Science

1975



The Altair 8800 hobbyist micro-computer using an Intel 8088 micro-processor becomes the first "personal computer"

1978

1979

1986

2011 Spirit of Innovation Award Winners Announced

Congratulations to the grand prize winners taking home the coveted title of 2011 Pete Conrad Scholars sponsored by Lockheed Martin Corporation in April 2011. The winning teams were:



Aerospace Exploration

- **Ouroboros**, Upper St. Clair High School, Pittsburgh, PA for their Perpetual Harvest Space Nutrition System that takes organic waste created during long duration space flight and creates compost that is then used to grow fresh foods also serving as an air filter for human habitation.
- **NSBRI Aerospace Award- Morpheus**, North Carolina School of Science and Mathematics, Durham, NC

Clean Energy

- **West Philly EVX Team**, West Philadelphia High School Auto Academy, West Philadelphia, PA - their Electric Very Light Car (EVLC) is being prepared for commercial market and will set the standard for efficiency with electric vehicles.
- **Constellation Renewable Energy Award-CIRPSICSR**, Alexandria, VA

Cyber Security

- **Unisecurity**, North Carolina School of Science & Mathematics, Durham, NC - for their Med PAL smartphone application that works with a Bluetooth enabled heart rate monitor worn by the user. MedPAL will automatically contact a call center and/or personal emergency contacts based on GPS coordinates should irregularities occur.

People's Choice Awards

- **Aerospace- Ouroboros**, Upper St. Clair High School, Pittsburgh, PA
- **Clean Energy- CIRPSICSR**, Thomas Jefferson High School for Science and Technology, Alexandria, VA

Sigma Xi is the official science advisor for the annual nationwide competition, founded on the legacy of Apollo 12 Commander Pete Conrad, for which Sigma Xi members serve as mentors and judges.

The program challenges teams of high school students to create innovative products using science, technology and entrepreneurship to solve real-world 21st century problems. For more information, visit conradawards.org.

Sigma Xi Awards at Intel International Science and Engineering Fair

Sigma Xi presented special awards for interdisciplinary research at the 2011 Intel International Science and Engineering Fair (ISEF) in Los Angeles in May 2011.

The First Place Award of \$2,500 went to the team of Arianne Elizabeth Papa and Jane Elizabeth Smyth of Lido Beach, New York, for their project "Mussels, A Natural Approach to Sewer Treatment: Evaluation Geukensia Demissa as Biofilters of Local Bay Pollution." This team also won an award in the Environmental category.

The Second Place Award of \$1,500 went to the team of Mike Wu and Stephen Yu of San Diego, California for their project "Position and Vector Detection of Blind Spot Motion with Horn-Schunck Optical Flow."

And the Third Place Prize of \$1,000 went to sisters Lisa and Tess Michaels of Plano, Texas for a project titled "Neuroscience of Longevity: Effects of Stress and Antioxidant Genes on the Lifespan of Transgenic Drosophila Melanogaster." This team also won an award in the biomedicine category.

Matthew Feddersen and Blake Marggraff from Lafayette, California were awarded the top prize at the ISEF, a program of Society for Science & the Public. They received \$75,000 and the Gordon E. Moore (SX 1953) Award, in honor of the Intel co-founder and retired chairman and CEO, for developing a potentially more effective and less expensive cancer treatment that places tin metal near a tumor before radiation therapy.

Taylor Wilson from Reno, Nevada was named an Intel Foundation Young Scientist Award winner and received \$50,000. Taylor developed one of the lowest dose and highest sensitivity interrogation systems for countering nuclear terrorism.

The team of Pornwasu Pongtheerawan, Arada Sungkanit and Tanpitcha Phongchaipaiboon from Thailand also received an Intel Foundation Young Scientist Award. This team determined that a gelatin found in fish scales could be successfully used in modern day fish packaging—an invention that could have positive, long-term effects for the environment.

"The innovation, the methodology, the quality of research—I am so encouraged when I see how bright these young people are. I can only be optimistic about our future with these students as the next generation of leaders in science," said Sigma Xi Executive Director Jerome Baker.

In addition to the winners mentioned above, more than 400 finalists received awards and prizes for their groundbreaking work. Awards included 17 "Best of Category" winners who each received a \$5,000 prize. The Intel Foundation also awarded a \$1,000 grant to each winner's school and the Intel International Science and Engineering Fair-affiliated fair they represent.

This year, more than 1,500 young entrepreneurs, innovators and scientists were selected to compete in the Intel International Science and Engineering Fair, the world's largest high school science research competition. They were selected from 443 affiliate fairs in 65 countries, regions and territories, including for the first time France, Tunisia, United Arab Emirates and Macao SAR of the People's Republic of China.

DeCusatis Named Winner of 2011 Walston Chubb Award

Casimer DeCusatis is an IBM Distinguished Engineer based in Poughkeepsie, New York, where he currently serves as an architect for network and I/O solutions, including extended distance connectivity.

The Walston Chubb Award for Innovation is designed to honor and promote creativity among scientists and engineers. The award carries a \$4,000 honorarium and an invitation to give a lecture at Sigma Xi's annual meeting.

DeCusatis is an IBM Master Inventor with more than 85 patents, and the recipient of several industry awards, including the IEEE Kiyo Tomiyasu Award, the EDN Innovator of the Year Award, the Mensa Research Foundation Copper Black Award for Creative Achievement, and the IEEE/HKN Outstanding Young Electrical Engineer Award. He is co-author of more than 100 technical papers, book chapters, and encyclopedia articles, and editor of the *Handbook of Fiber Optic Data Communication* (now in its 3rd edition).

He is a member of the IBM Academy of Technology and co-leader of the Academy study "Innovation Ecosystems." DeCusatis received M.S. and Ph.D. degrees from Rensselaer Polytechnic Institute and his B.S. magna cum laude in the Engineering Science Honors Program from the Pennsylvania State University.

He is a Fellow of the IEEE, Optical Society of America, and SPIE (the international optical engineering society), a member of the Order of the Engineer, Tau Beta Pi, Eta Kappa Nu, Mensa, and various other professional organizations and honor societies. He also serves as founder and director of Hudson Valley FIRST Lego League, which offers more than 1,000 students each year the opportunity to pursue their interest in science and technology. •

NAS Elects 23 Sigma Xi Members

Twenty-three Sigma Xi members were among the 72 new members and 18 foreign associates elected this spring to the National Academy of Sciences (NAS) in recognition of their distinguished achievements in original research. The spring election brings the total number of NAS active members to 2,113.

The NAS is a private organization of scientists and engineers dedicated to the furtherance of science and its use for the general welfare.

It was established in 1863 by a congressional act of incorporation signed by Abraham Lincoln that calls on the Academy to act as an official adviser to the federal government, upon request, in any matter of science and technology.

Newly elected Sigma Xi members and their affiliations at the time of the election are:

Rebecca H. Buckley (SX 1971), J. Buren Sidbury Professor of Pediatrics and professor of immunology, Duke University.

Richard L. Edwards (SX 1990), George and Orpha Gibson Chair of Earth Systems Sciences and Distinguished McKnight University Professor, department of geology and geophysics, University of Minnesota, Minneapolis.

John J. Eppig (SX 1968), senior staff scientist and professor, Jackson Laboratory, Bar Harbor, Maine.

Tom Fenchel (SX 1981), professor and director, Marine Biology Laboratory, University of Copenhagen, Helsingor, Denmark.

David Gabai (SX 1976), Hughes-Rogers Professor of Mathematics, department of mathematics, Princeton University.

Michael S. Gazzaniga (SX 1966), director, Sage Center for the Study of the Mind, University of California, Santa Barbara.

Fred Gould (SX 1982), William Neal Reynolds Distinguished Professor, department of entomology, North Carolina State University.

Donald K. Grayson (SX 1969), professor, department of anthropology, University of Washington, Seattle.

Keith O. Hodgson (SX 1968), David Mulvane Ersham and Edward Curtis Franklin Professor of Chemistry, and associate director for photo science, SLAC National Accelerator Laboratory, Stanford University.

Noel S. Hush (SX 1966), covener of the molecular electronics group and Foundation Professor Emeritus of Theoretical Chemistry, School of Molecular and Microbial Biosciences, University of Sydney, Australia.

James T. Hynes (SX 1965), professor, department of chemistry and biochemistry, University of Colorado, Boulder.

William L. Jorgensen (SX 1978), Sterling Professor of Chemistry, department of chemistry, Yale University.

Ching Kung (SX 1969), Vilas Professor of Genetics and Molecular Biology, departments of genetics and molecular biology, Laboratory of Cell and Molecular Biology, University of Wisconsin, Madison.

Leslie B. Lomport (SX 1960), principal researcher, Microsoft Research, Mountain View, California.

Lynne E. Maquat (SX 1978), J. Lowell Orbison Chair and professor of biochemistry and biophysics, department of biochemistry and biophysics, University of Rochester.

Ira S. Mellman (SX 1973), vice president of research oncology, Genentech Inc., South San Francisco, California.

Piermaria J. Oddone (SX 1965), director, Fermi National Accelerator Laboratory, Batavia, Illinois.

John P. Perdew (SX 1979), professor of physics, department of physics and engineering physics, School of Science and Engineering, Tulane University.

H. Vincent Poor (SX 1980), dean of engineering and applied science and Michael Henry Strater University Professor of Electrical Engineering, Princeton University.

Geraldine L. Richmond (SX 1981), Richard M. and Patricia H. Noyes Professor, department of chemistry, University of Oregon.

George H. Rieke (SX 1964), Regents Professor of Astronomy, and deputy director, Steward Observatory, University of Arizona.

Stephen T. Warren (SX 1977), William Patterson Timmie Professor and chair, department of human genetics, Emory University.

Edward L. Wright (SX 1976), David Saxon Presidential Chair in Physics and professor, department of physics and astronomy, University of California, Los Angeles. •

Award Nominations Due October 1

Know an outstanding scientist or engineer whom Sigma Xi should honor? The Society's prestigious annual awards recognize excellence in research and communication. The nominations deadline is October 1. Visit www.sigmaxi.org for guidelines, past recipients and other details.

William Procter Prize



Presented annually since 1950, the Procter Prize recognizes a scientist or engineer who has made important contributions to research and demonstrated an ability to communicate that research to scientists in other disciplines. Past recipients include E. O. Wilson, Jane Goodall and Philip Morrison.

John P. McGovern Award



Since 1984, the McGovern Award has honored those who have made outstanding contributions to science and society. Past recipients include Sylvia Earle, David Suzuki and Mario Molina.

Walston Chubb Award



The Chubb Award honors and promotes creativity among scientists and engineers.

Young Investigator Award



Honoring researchers early in their careers, this award alternates between the physical sciences and engineering, including mathematics, and the life and social sciences.

Evan Ferguson Award

Named for Sigma Xi's longtime deputy director, the Ferguson Award recognizes service to the Society.

Honorary Membership

Honorary membership is bestowed on those 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. •

Supriyo Datta to Receive 2011 Procter Prize



Engineer-physicist Supriyo Datta at Purdue University has been called "one of the most original thinkers in the field of nanoscale electronics." Datta is widely recognized for his seminal scientific contributions to the theory of quantum transport in nanoscale electronic devices and molecular electronics.

Each year Sigma Xi awards the William Procter Prize for Scientific Achievement to a scientist who has made an outstanding contribution to scientific research and has demonstrated an ability to communicate this research to scientists in other disciplines.

Datta's interdisciplinary work on quantum mechanical transport spans chemistry, physics and electrical engineering and has produced: a sound, conceptual understanding of electronic conduction at the molecular scale; the first rigorous quantum simulations of nano- and molecular scale electronic devices; and the first concept for a spintronic switch (the so-called Datta-Das spin transistor) and more recently for a new kind of spin-based memory.

His conceptual approach and computational methods are now widely used by scientists and engineers throughout the world, and his ideas

for spintronics focused international attention on the field. Since the invention of the transistor in 1947, progress in electronics has occurred by shrinking the size of the basic device (transistor) and increasing the number of them on an integrated circuit chip.

The critical dimensions of a transistor are now less than 50 nanometers (in the horizontal direction) and less than 2 nanometers in the vertical.

This dramatic decrease in physical dimensions has created the need for new and improved theories to deal with the implications of electronics devices of these dimensions.

Through his books, seminars, tutorials, short courses, and full courses at Purdue and online, Supriyo Datta's ideas are shaping the future of electronic devices.

Datta received his BTech degree from the Indian Institute of Technology and his M.S. and Ph.D. from the University of Illinois where he was a visiting assistant professor until joining Purdue in 1981.

He was named the Thomas Duncan Distinguished Professor in Electrical and Computer Engineering in 1999. He is also director of the NASA Institute for Nanoelectronics and Computing. •

Membership

(continued from page 347)

will be given for the following fiscal year. Notification of free membership will be sent to the recommender by e-mail.

Each member who participates in the program can receive only one free year of membership, even if they recommend more than five nominees during one fiscal year.

Members who recommend a new member will receive credit once the person becomes a member. All information will be verified by Sigma Xi staff.

Note to Chapter Officers and members of Chapter Nominating Committees: Please

understand that the goal of this program is to increase Sigma Xi membership. We hope that any recommendations you claim will supplement the processes you have already established at your institution for identifying potential new members.

And remember that these nominees do not have to come from your institution or even your local area. Feel free to recommend a qualified individual you know in another part of the country or the world.

Questions? E-mail membership@sigmaxi.org or call 800-243-6534 or 919-549-4691. •