

Sigma Xi Today

NOVEMBER/DECEMBER 2001 · VOLUME 10, NUMBER 6

Chamberlin Receives Monie Ferst Award



Michael J. Chamberlin

In October, noted biochemist Michael J. Chamberlin received the 2001 Monie A. Ferst Award during a symposium in his honor at the University of California at Berkeley that focused on the research accomplishments of his former students.

The Georgia Institute of Technology Chapter of Sigma Xi has presented this national award annually since 1977. It honors those who have made outstanding contributions to research through teaching and supervising graduate students.

A professor of biochemistry and molecular biology at UC-Berkeley, Chamberlin was born in Chicago in 1937, the oldest of five children. While at Harvard University, he was mentored by John Edsall.

His graduate career at Stanford University was marked by strong guidance from thesis advisor Paul

Berg and department chair Arthur Kornberg.

Chamberlin's research has focused in recent years on the regulation of gene expression, and particularly on the regulation of transcription, in both prokaryotic and eukaryotic organisms.

At UC-Berkeley, he has demonstrated a strong ethic of being an educator and a collaborator within the department. All 37 of his Ph.D. students have experienced a laboratory environment of exceptional scientific rigor, providing a solid grounding in science.

Chamberlin's many honors include election to the National Academy of Sciences, the American Academy of Arts and Sciences and the American Academy of Microbiology.

However, he counts the successes of his students among his greatest scientific and personal rewards, and he has encouraged their progress long after their departure from his Berkeley laboratory.

The Monie Ferst Award consists of a medal and \$5,000 and recognizes scientists who have inspired their colleagues to significant scientific achievements. It is named for an outstanding engineer and businessman who was a graduate of Georgia Tech.

Complete nomination guidelines are available at <www.sigmaxi.org> in the Programs section.

Nominations should be sent by November 30 to Mark G. White, School of Chemical Engineering, Georgia Institute of Technology, Atlanta, GA 30332-0100. He also welcomes inquiries at 404-894-2822 or mark.white@che.gatech.edu.

Forum Features New Play 'Oxygen'

A presentation of *Oxygen* will be among the highlights of the 2001 Sigma Xi Forum *Science, the Arts and the Humanities: Connections and Collisions*. (See page 575.)

The playwrights, distinguished Sigma Xi members Carl Djerassi and Roald Hoffmann, describe *Oxygen* as "a play about priority and competition in science and the moral consequences of these."

Hoffmann will introduce the play, to be presented by the San Diego Repertory Theatre. He is a Nobel laureate in chemistry at Cornell University and a frequent columnist for *American Scientist*. Djerassi is a professor of chemistry at Stanford University who received Sigma Xi's 1998 William Procter Prize. He is best known as developer of the oral contraceptive pill.

Held in conjunction with National Chemistry Week, this is a joint program with the North Carolina Section of the American Chemical Society. Additional jointly-sponsored events include "Violinmaking: Is It Art or Is It Science?" featuring biochemist Joseph Nagyvary and violinist Zina Schiff, and awards for a student research symposium to take place during the Sigma Xi annual meeting following the forum.

I N S I D E

On the Trail of Tortoises	574
Asian Countries Need Magazines and Journals	574
2001 Sigma Xi Forum	575
Nominations Sought	576
Buenos Aires Group	576

On the Evolutionary Trail of Tortoises



James Ford Parham

The following profile is part of a series on Sigma Xi Grants-in-Aid of Research recipients. Visit www.sigmaxi.org for more information on the grants program.

As a graduate student in integrative biology at the University of California at Berkeley, James Ford Parham is using his Sigma Xi grant to study the origins of modern tortoises, turtles that have forsaken the aquatic home of their ancestors to invade the land.

Parham is a National Science Foundation fellow and a recipient of the prestigious George D. Louderback Award. He has co-published several papers on the skeletochronology and relationships of sea turtles.

Skeletochronology involves determining the age of animals from growth marks on their skeletons.

"Although living tortoises are familiar to specialists and non-specialists alike, their origins are complex and poorly understood," he says.

"The overall significance of my research lies not only in the fascinating story of how tortoises left the water to inhabit the forests, deserts and savannas of five continents, but also in demonstrating how the rec-

onciliation of multiple lines of evidence can be a powerful tool for evolutionary studies."

In order to unravel tortoise origins, he is combining data from the DNA of living tortoises, spectacular fossils from the desolate badlands (once lush subtropical forests) of Northern Wyoming and Utah, and comparisons to extinct turtle lineages that have independently evolved a terrestrial lifestyle.

"Fossils play a key role in my study, and I hope to show that the data of the fossil record are not restricted to shapes of petrified bones," Parham says.

"In addition to recording the morphology of extinct organisms, every fossil has a temporal, geographical and ecological context, and all of these lines of evidence may be useful for understanding the evolutionary relationships of plants and animals."

He has learned that advanced tortoises evolved multiple times. The high-domed shells and columnar, elephantine feet of living forms are specializations for terrestrial life that evolved independently on each continent.

This was an unexpected result because, since most living tortoises have these features, it was assumed they inherited them from a common ancestor.

Over the past six years Parham has traveled extensively around western North America looking for living and fossil animals.

"I will go anywhere that is mostly safe," he says. "I have been to several provinces in China, including Tibet and Hainan; Turkey, Greece, Russia and a few other countries."

Since 1927, Sigma Xi Grants-in-Aid of Research have provided a helping hand to nearly 30,000 young scientists and engineers with small grants to further their careers.

Asian Countries Need Magazines and Journals

You can help scientists and students in Asia by putting past issues of *American Scientist* on empty university library shelves.

Bridge to Asia, a San Francisco-based non-profit organization, sends donated issues of *American Scientist*, as well as textbooks and academic journals, to students and teachers in Asia. Just ship them tightly packed in manageable-sized boxes to one of the following addresses.

On the West Coast, send donations to: Bridge to Asia, Foreign Trade Services, Pier 23, San Francisco, CA 94111. From the Midwest or East, send them to: Bridge to Asia, c/o Follett Campus Resources, 2211 West Street, River Grove, IL 60171-1800.

All donations and shipping costs are tax-deductible in the U.S. Each copy of *American Scientist* qualifies for a deduction of \$4.75. Receipts for tax purposes are provided upon request. See the Bridge to Asia Web site at www.bridge.org.

Newton X. Liu and Jeff Smith were inspired to start the Bridge to Asia program while working and teaching in China, where they saw firsthand the barren shelves of most university libraries.

They say the primary need is for science and technology materials, including college- and graduate-level texts and references and scholarly and professional journals.

According to Liu, "*American Scientist* is in high demand in Asia. Many Sigma Xi members have been kind enough to send additional materials, including textbooks, references, conference proceedings and more. Their response has been caring and generous, and we remain grateful for all that they and Sigma Xi have done."

2001 Sigma Xi Forum November 8-9, 2001 Sheraton Capital Center, Raleigh, NC

Science, the Arts and the Humanities: Connections and Collisions

In conjunction with the Sigma Xi Annual Meeting November 9-11, 2001

2001 SIGMA XI FORUM



Science, the Arts & the Humanities

CONNECTIONS & COLLISIONS

Raleigh, North Carolina November 8-9, 2001

Through performances, paintings, film, photographs, poetry, talks and discussions, the 2001 Sigma Xi Forum will focus on the reciprocal influences of science, in its endeavor to

understand nature; the humanities, in their essential role as the shapers of values; and the arts, as acts of creation that speak to our emotions.

More than 50 scientists, artists and writers will offer a rich panorama of these influences, both historic and contemporary. Organized in cooperation with Phi Beta Kappa and the National Humanities Center, this two-day forum will span a variety of contexts, ranging from the quest for beauty in science to the use of science and technology to create beauty.

Among those providing support for the program are the American Chemical Society Matching Gift Fund, the Burroughs Wellcome Fund, Duke University and GlaxoSmithKline.

Oxygen, van Gogh and Fish

The new Fletcher Opera Theater in downtown Raleigh, near the conference hotel, will be the setting for three performances of the play *Oxygen*, written by distinguished chemists and authors Carl Djerassi and Roald Hoffmann. (See page 573.)

Other topics will include science's ability to provide insights and dispel myths concerning such historical figures as Vincent van Gogh and King George III.

Another session will focus on art conservators, who combine skills in studio art with knowledge of art history and a

technical understanding of the chemical and physical properties of paint, canvas and wood, among other materials.

A sculptor and a biologist will discuss how models, or physical abstractions, of fish and other organisms have provided insights about basic biological functions, such as swimming, with applications for scientists and engineers.

Three seismologists will perform "Earthquake Quartet #1 for trombone, cello, voice, and earthquakes."

Performances

OXYGEN

A play by Carl Djerassi and Roald Hoffmann. Performed by the San Diego Repertory Theatre. Introduction and post-performance discussion, **Roald Hoffmann**, Cornell University

VIOLINMAKING: IS IT ART OR IS IT SCIENCE?

Joseph Nagyvary, Texas A&M University; **Zina Schiff**, violinist

THE MUSIC OF EARTHQUAKES:

WAVEFORMS OF SOUND AND SEISMOLOGY
Andrew J. Michael,
Stephanie Ross, U.S. Geological Survey;
David Schaff, Columbia University

Plenary Sessions

ONE CULTURE: THE COMMONALITIES AND DIFFERENCES BETWEEN THE ARTS AND THE SCIENCES

Roald Hoffmann, Cornell University

INTERSECTIONS IN RESEARCH BETWEEN THE ARTS AND SCIENCES

Moderator: **Douglas Foard**, Loudoun Museum and Phi Beta Kappa;
Panelists: **Felice Frankel**, MIT;
Minor Myers, Illinois Wesleyan;
George Saliba, Columbia University;
Richard Taylor, University of Oregon

SCIENCE, THE ARTS AND THE HUMANITIES: MAKING THE PUBLIC CASE

Moderators: **George Bugliarello**, Polytechnic University; **Catharine R. Stimpson**, New York University;
Panelists: **Robert Connor**, National Humanities Center;
Jack Gibbons, Resource Strategies;
Gail Lewtich, Federation of State Humanities Councils

BRINGING THE METHODS OF THE HARD SCIENCES TO THE HUMANITIES

Wilfred Niels Arnold,
University of Kansas Medical Center

A NEW TRIVIAM AND QUADRIVIUM

George Bugliarello,
Polytechnic University

THE ART AND HUMANITY OF ENGINEERING

Henry Petroski, Duke University

THE STIMULUS AND VALUE OF COMBINING ART AND SCIENCE FOR HUMANIST BENEFIT

Charles Pell, Nekton Research;
Steve Wainwright,
Duke University and Seesaw Studio

THE CONSERVATION CENTER: WHERE ART MEETS SCIENCE

Terry T. Schaeffer,
Los Angeles County Museum of Art

CREATIVE CO-DEPENDENTS: SCIENCE, THE ARTS AND THE HUMANITIES

Catharine R. Stimpson,
New York University

Concurrent Sessions

SCIENCE ON STAGE

SCIENCE AND LITERATURE

SCIENCE FOSTERING ART: PAINTING, OPTICS AND THE CAMERA OBSCURA

WORLDS IN CONCERT: SCIENCE AND HUMANITIES CONNECTIONS

THE LITERARY SCIENTIST

WESTERN HEMISPHERE KNOWLEDGE PARTNERSHIPS: UNIFIED KNOWLEDGE UNIVERSALLY SHARED

A DIALOGUE ON SCIENCE AND ART AS COMPLEMENTARY ACTIVITIES

CAN THE INTERNET HELP TEACH COMPLEX PROBLEMS?

FILM, TECHNOLOGY AND SCIENCE

POLYMATHS, META-CREATION AND MENTAL MODEL BUILDING

For additional information, visit
www.sigmaxi.org

Nominations Sought for Sigma Xi President and Board Members

Beginning April 1, 2002 the Sigma Xi Committee on Nominations will begin selecting at least two nominees for president of the Society, one of whom will be elected at the 2002 Annual Meeting to serve a one-year term as president-elect before becoming president on July 1, 2004.

Sigma Xi members are urged to submit nominations for president to the committee via the Society's administrative offices by April 5, 2002.

The deadline is May 1, 2002 for nominations from geographic regions and constituency groups for either directors, associate directors or members of the Committee on Nominations, who will serve three-year terms. Candidates will be elected during the 2002 Sigma Xi Annual Meeting in Galveston, Texas.

Nomination forms are available at <www.sigmaxi.org>, but members should also feel free to submit a nominee's name, address, brief biography and a brief statement of support by e-mail to ctte-nominations@sigmaxi.org.

Geographic Regional Nominations

NORTHEAST REGION

Committee on Nominations*

NORTH CENTRAL REGION:

Associate Director

NORTHWEST REGION

Associate Director

MID-ATLANTIC REGION

Committee on Nominations*

SOUTHEAST REGION

Associate Director

SOUTHWEST REGION

Associate Director

Constituency Groups Nominations

COMPREHENSIVE COLLEGES & UNIVERSITIES

Committee on Nominations*

AREA GROUPS, INDUSTRIES, STATE & FEDERAL LABORATORIES

Committee on Nominations*

BACCALAUREATE COLLEGES

Director

CANADIAN/INTERNATIONAL

Director

RESEARCH & DOCTORAL UNIVERSITIES

Associate Director

**Term begins November 2002
All other terms begin July 2003*

Buenos Aires Group Forming Under Packard Initiative

A core group of researchers in Buenos Aires, Argentina, have become the first to sign a memorandum of understanding and receive a \$2,500 award under Sigma Xi's Packard International Science Networking Initiative.

Funded by a three-year grant from the David and Lucile Packard Foundation, the Packard Initiative is a major effort to create networks of scientists and engineers in developing countries and to foster long-term partnerships with those communities, established Sigma Xi chapters and scientists and engineers throughout the world.

Sigma Xi Past President V. Elving Anderson met with the Buenos Aires group and presented the award during a trip to the 24th International Epilepsy Congress. Brothers Esteban and Ismael di Tada hosted Anderson and his wife for a tour of Buenos Aires and a luncheon. Later at the University of Palermo, they were joined by José Dadon, Enrique Grünhut, Celia Lombardi and Ricardo Popovsky, rector of the university.

"It was a personal pleasure to be at this significant meeting and to see firsthand the great opportunities for further growth of Sigma Xi activities in this major Latin American cultural center," Anderson reported. Recently, the Buenos Aires group also hosted a short course on "Population Modeling with Application to the Study of Epidemics and HIV" presented by Fabio Milner from Purdue University.

International Survey

In connection with the Packard Initiative, Sigma Xi is conducting a survey to ascertain the current status of the research environment in developing countries. All researchers with experience in developing countries are encouraged to complete the questionnaire online via the Packard Initiative link under the "Programs" section at <www.sigmaxi.org>.

Those without Web access can contact the international program coordinator at cpiggee@sigmaxi.org or 919-549-4691 ext. 246 to get a copy of the survey. The results from this survey will help Sigma Xi tailor efforts under the Packard Initiative.