

UC SANTA BARBARA

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x000B PROMOTING NEUROSCIENCE RESEARCH OF THE HIGHEST QUALITY

An Investment in Excellence

Life scientists at the University of California, Santa Barbara are contributing new information about the functioning of the human nervous system.

Much research is focused on vision, the development of the nervous system and on diseases such as age-related macular degeneration, multiple sclerosis, and Alzheimer's disease.

In recognition of that ground-breaking research and the overall excellence of the university, Ellie and Tom Harriman, of Santa Barbara, have made a major gift to establish an endowed chair in the Neuroscience Research Institute to promote neuroscience research of the highest quality.

The donors created the endowment to attract and support a renowned neuroscientist to lead the institute into the next century of discovery, responding to a recommendation of a distinguished panel of external reviewers.

The couple, who are devoted university volunteers and benefactors, also launched a critical needs fund in support of the institute's highest priorities.

In honor of their gift, the chairholder will be officially named The Eleanor L. and Thomas J. Harriman Professor and Director of the Neuroscience Research Institute.

"This generous gift is a wonderful statement of their commitment to excellence at UCSB and the future of the Neuroscience Research Institute, and is a tremendous honor for the university to receive," said UCSB Chancellor Henry Yang.

"This gift is an inspiration to our neuroscientists who contribute to the improvement of the quality of our lives through their research discoveries."

Endowed chairs are highly prized academic positions that are supported by earnings from invested funds.

While the state budget pays for the faculty member's salary, the proceeds generated by the endowment provide flexible funds for research and instruction that are important in the recruitment and retention of the world's greatest scholars.

"UCSB's Neuroscience Research Institute, comprising interdisciplinary researchers from biology, chemistry, engineering, and psychology, is contributing immensely to our knowledge of the cellular and molecular mechanisms underlying the nervous system," said France Córdova, UCSB vice chancellor for research.

"The donors' close association with the institute over the years has given them a special appreciation of the challenges of doing leading-edge research on the biochemistry, molecular biology and biophysics of neurodegenerative diseases."

The couple became acquainted with the NRI through UCSB's General Affiliates, which provides opportunities for community involvement with UCSB through public programming.

Tom Harriman serves on the board of directors of the affiliates and is a past president of the organization.

"The kind generosity of the donors has touched the lives of many at the NRI, and the establishment of the endowed chair assures that they will have a profound effect on the future of neuroscience research at UCSB," said Steven K. Fisher, director of the NRI, and professor in the Department of Molecular, Cellular and Developmental Biology.

The range of scientific interests at the NRI extends across basic cellular and molecular biology and medicine, biochemistry, psychology, chemistry, and biophysics.

Areas of emphasis include research on the genetic control and structural organization of a developing nervous system, the structural and functional organization of the retina and visual system, the cellular and molecular responses of the nervous system to injury, and its ability to regenerate.

Two centers established within the NRI focus on specific problems: the Center for the Study of Age-related Macular Degeneration, and the Center for Neurodegenerative Disorders.

The institute supports about 40 researchers and 100 students.

Last year, the NRI received more than \$3.7 million in external funding for a variety of studies on the basic nature of the brain and the central nervous system.

"We recommend that fellow citizens get to know the university through the General Affiliates or other town and gown groups, find the department or organized research unit that interests them, and participate in the great institution that UCSB has become," the Harrimans said in a written statement.

UCSB has a total of 25 endowed chairs in disciplines that span the academic spectrum.

NOTE TO REPORTERS:

An overview of important research underway at the Neuroscience Research Institute is attached.

Overview of Research at the Neuroscience Research Institute. University of California, Santa Barbara

Center for the Study of Macular Degeneration

Scientists trained in cell biology, biochemistry and molecular biology are pursuing research that will provide understanding of the underlying causes of this blinding disease. While a number of theories have been proposed, little is known about the processes responsible for the devastating visual loss associated with macular degeneration. Current research focuses on drusen, age-related deposits that form in the macular region in the eyes of individuals with macular degeneration. New information recently discovered at the center indicates that drusen are similar in molecular composition to plaques and deposits in other age-related diseases such as

Alzheimer's disease and atherosclerosis.

Electrical Signaling in Neurons and Muscle

Recently, significant progress was made in the study of potassium channels, in research headed by Carol A. Vandenberg, associate professor of molecular, cellular and developmental biology. These channels are central to electrical signaling in neurons and muscle, where they are involved in processes such as regulation of heart rate and regulating the secretion of insulin from the pancreas. Researchers are also studying the interactions between the subunits of the potassium channel. This class of channels is a drug target for the control of cardiac arrhythmia, hypertension and diabetes, and an understanding of the channel structure and function is important for the design of specific therapeutic channel blockers.

Chemotherapy Studies

The cancer chemotherapeutic agent taxol and how it works is the subject of research headed by Mary Ann Jordan, adjunct professor of molecular, cellular and developmental biology. Researchers are also studying the mechanism of action of several important new and promising anticancer drugs including cryptophycin 52, curacin A, and cemadotin. Recently, new studies have begun regarding how resistance to chemotherapeutic drugs develops and how resistance might be overcome.

Color Vision Research

This research program headed by Gerald H. Jacobs, professor of biopsychology and psychology, is concerned with several fundamental aspects of the interrelationships between photopigments, neural organization and visual behavior. Two major projects pursued during the past year exemplify this effort. The first involves study of a transgenic mouse that has incorporated a human photopigment gene. The second project involves ongoing efforts to understand photopigments and color vision in primates. During the past year photopigment measurements were carried out on several species of nonhuman primates. These results move researchers closer to an eventual understanding of the evolution of color vision in primates.

Center for the Study of Neurodegenerative Disorders

The purpose of the center, headed by Cynthia Husted, research engineer, is to bring together an interdisciplinary group of investigators with a common interest in neurodegenerative conditions in order to conduct basic biomedical research into the molecular, cellular and genetic causes underlying their onset - for a variety of diseases from Alzheimer's to Multiple Sclerosis. Researchers bring a wide range of technologies and intellectual perspectives to bear on these problems including genetics, cell biology, biochemistry, molecular biology, biophysics and bioengineering. In the center's MS research, investigators are testing the hypothesis that the structure of myelin, the sheath that surrounds nerve tissue, is altered in MS and that this structural defect contributes to immune system attack. They are also characterizing the early chemical changes that occur to myelin after the immune system has been activated. The results of this research will increase understanding of myelin membrane structure and function in the central nervous system, and will provide insights into the mechanisms of myelin membrane destruction in MS.

About UC Santa Barbara

The University of California, Santa Barbara is a leading research institution that also provides a comprehensive liberal arts learning experience. Our academic community of faculty, students, and staff is characterized by a culture of interdisciplinary collaboration that is responsive to the needs of our multicultural and global society. All of this takes place within a living and learning environment like no other, as we draw inspiration from the beauty and resources of our extraordinary location at the edge of the Pacific Ocean.