

THE SAGE LETTERS

Issue 4, Spring 2002

The University of Texas Health Science Center at San Antonio

The UTHSCSA nearing the pinnacle in aging research

As president of The University of Texas Health Science Center at San Antonio, I am pleased to share my reflections and predictions for our university's Aging Program.



Francisco G. Cigarroa, MD
President, UTHSC

For more than 20 years, scientists at The University of Texas Health Science Center at San Antonio (UTHSC) have sought clues into how and why we age. During this time, our researchers have been credited with major discoveries in areas such as nutrition and aging, the genetic and molecular bases of aging, and health care issues unique to our elderly Hispanic population.

Thanks to efforts of Drs. Edward Masoro and Arlan Richardson, the past and current directors of the UTHSC's Aging Research and Education Center (AREC), we have one of the most comprehensive and vigorous aging programs in the nation. At present, AREC faculty members have more than \$100 million in total funding to their credit for ongoing aging research and training programs.

Many of the more than 150 faculty members affiliated with the AREC have distinguished themselves through their professional activities, earning a variety of awards this year. This issue of *The Sage Letters* highlights some of their research and professional accomplishments.

Dreams realized

Building on our already solid reputation for excellence in aging research, we now stand on the threshold of exciting new directions for aging studies in San Antonio. Our vision of a major research center dedicated solely to the scientific

study of the genes involved in aging became a reality earlier this year when The University of Texas System Board of Regents established The Sam and Ann Barshop Center for Longevity and Aging Studies, naming the Center in honor of the former U. T. Regent and his wife.

Mr. and Mrs. Barshop, who are ardent and constant advocates for higher education and the UTHSC, generously donated the pivotal \$4 million needed to begin construction of the \$20 million, 50,000 square-foot, state-of-the-art Center. Their donation crowns the building fund-raising that began in 1999 with a \$6 million challenge grant from The Brown Foundation, Inc. of Houston.

Overland Partners is the architectural firm selected by the U. T. System Board of Regents to plan and design the Barshop Center. This San Antonio-based firm is the recipient of many architectural awards, notably for its design and construction of the Lady Bird Johnson Wildflower Research Center in Austin and the South Texas Blood and Tissue Center in San Antonio. We look forward



The Sam and Ann Barshop Center for Longevity and Aging Studies
Overland Partners, Architects

to late summer when the construction will begin on the Center, which is located adjacent to the South Texas Centers for Biology in Medicine and the Institute of Biotechnology at the Texas Research Park in western Bexar County.

The best and the brightest

With millions of Americans entering the "senior" ranks within the next few decades, we are striving for the scientific



Mr. and Mrs. Sam Barshop

Mr. Barshop served on the University of Texas System Board of Regents from 1987 to 1993. He is the founding partner and chairman of Barshop & Oles Company, LP; the founder and CEO of La Quinta Inns, Inc., and serves on corporate boards and public agencies including Southwest Airlines, the Texas Turnpike Authority, and the Boys and Girls Clubs of America.

breakthroughs that ultimately will lead to an enhanced quality of life for our aging population. To this end, we are recruiting the top scientists in the field (see page 4, "exceptional") to join the Sam and Ann Barshop Center for Longevity and Aging Studies. These researchers are using the latest investigative tools such as microarrays, transgenic animal models, and cell transplantation to find ways to arrest the disabling processes of aging. The scientific knowledge gained from these studies eventually will lead to longer, healthier, and more independent lives for us all.

We are grateful to Sam and Ann Barshop for their generosity in helping to make our dream of this world-class research Center a reality. Our deepest appreciation also goes to The Brown Foundation, Inc., especially to Mr. and Mrs. Thomas I. O'Connor, for their steadfast support of the Center, and to the

National Institutes of Health and The University of Texas System for their show of confidence in the creation of this Center and for the work of its researchers.



David Espino, MD, professor and chief of community geriatrics, department of family and community medicine, was named to the Advisory Council of National Institute on Aging.

Meghan Gerety, MD, professor, department of medicine, was elected president of the American Geriatrics Society for 2003.

Peter Hornsby, PhD, professor, department of physiology, is the 2001 recipient of the Glenn Foundation Award for Aging Research by the Gerontological Society of America.

Michael J. Lichtenstein, MD, professor, department of medicine, received a U.S. registered trademark for *Stealth Gerontology*[®], a component of his project, *Positively Aging*[®].

Robert Marciniak, MD, PhD, assistant professor of medicine and cellular and structural biology, received the Beeson Physician Faculty Scholar Award from the American Federation of Aging Research for 2002-2005.

Recent Awards & Honors to AREC Faculty Members

Roger J. M. McCarter, PhD, professor, department of physiology, was elected chair of the 2002 Biosciences Section of the Gerontological Society of America.

Toni Miles, MD, PhD, professor, department of family and community medicine, named Outstanding Physician of the Year, by the National Association for Continence.

Michael Naski, MD, PhD, assistant professor department of pathology, is a 2001-2004 recipient of the Beeson Scholar Faculty Scholar Award from the American Federation for Aging Research.

James F. Nelson, PhD, professor, department of physiology, was co-chair of the 2001 Gordon Research Conference on the Biology of Aging, held in Oxford, England.

Olivia Pereira-Smith, PhD, professor, department of cellular and structural biology, was elected chair of the 2003 Biosciences Section of the Gerontological Society of America.

Arlan Richardson, PhD, professor, department of physiology, received the Harman Research Award from the American Aging Association. **Dr. Richardson** also was named scientific advisor for *Science* magazine's *SAGE KE*.

James Smith, PhD, professor, department of pathology, was named editor-in-chief of the Gerontological Society of America's *Journals of Gerontology: Biological Sciences*.

Jan Vijg, PhD, professor, department of physiology, is co-chair of the Functional Genomics of Ageing conference, held in Seville, Spain, April 2002.

School of Nursing faculty taking leadership in gerontology programs

Recently, the U. S. Health and Human Resources and Services Administration awarded the UTHSC School of Nursing a \$900,000 grant to



KELLER

establish a Gerontological Nurse Practitioner (GNP) program. Colleen Keller, PhD, RN, professor and chair of the department of family nursing care, leads in the development of the curriculum that prepares practitioners to care for the multiple and complex needs of the rapidly growing elderly population. This advanced specialty training gives special emphasis to the unique healthcare requirements of elderly South Texans. Currently, only five GNPs serve the entire South Texas region. The School of Nursing is actively recruiting students for its GNP program. For information, call Laurie Dodge, GNP program coordinator, at 210-567-7094.

Kelly Dunn, PhD, RN, associate professor and chair of the department of chronic nursing care, is leading a team of faculty members from the UTHSC and UT-Austin in the development of a joint curriculum for a Master of Science in Gerontology. Although currently in its planning phase, the program will offer a comprehensive, multidisciplinary set of courses in Gerontology. Dr. Dunn explained, "The program is designed to provide an understanding of the biological, sociocultural, psychological, and other aspects of aging to a broad range of professionals, including physicians, nurses, administrators,

teachers, and other professionals. The collective faculty expertise from both universities will assure program quality."

A recent investigational study is underway in the School of Nursing that seeks to understand the association between cognitive decline and nonadherence to medication regimens among the elderly. Medication adherence is an important self-care activity that can affect health and well-being, yet



INSEL

adherence may be particularly problematic for older adults who show aging-associated changes in thinking and remembering. Kathleen Insel, PhD, RN, professor, department of chronic nursing care, and lead investigator on this NIA study explained, "We are interested in how older adults take medications and what nurses might do to enhance continued independence among those who have difficulties with medication adherence." Participants selected for this study are community-dwelling residents, ages 70 years and older, who take at least one prescription medication. Each participant is evaluated for cognitive and other influences that may affect medication adherence. For more information about this study, call Dr. Insel's office at 210-567-1079.

Sharon Lewis, PhD, professor, department of acute nursing care, and



DUNN

clinical nurse scientist at the Audie Murphy V.A. hospital, is studying the effects of stress and relaxation therapy on caregivers of patients with chronic neurological diseases.

"Family caregivers provide a valuable service to their family members, but the stress the caregiver experiences can be overwhelming," said Dr. Lewis, "How caregivers deal with stress is critical to their well-being and to the patient's welfare." Participants in this study learn to manage stress through the training they receive. The effectiveness of the stress intervention techniques is determined through the testing of immune parameters, biofeedback measurements, and quality of life. If you have an interest in this study, call Dr. Lewis' office at 210-949-3696.



LEWIS

THE SAGE LETTERS

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New funding to UTHSC researchers for the study of mechanisms of aging

Among the many new aging research grants awarded to UTHSC scientists during the past year, the National Institutes of Health (NIH) funded two large, peer-reviewed grants for scientific investigations into aging processes at the cellular and genetic levels.

Does oxidative stress accelerate aging?

The National Institution Aging (NIA) awarded a \$5.8 million Program Project Grant to Brian Herman, PhD, professor and chair, department of cellular and structural biology, to study the effects of oxidative stress on aging processes and age-related diseases. In this study, "Aging, Oxidative Stress and Cell Death," Dr. Herman, a leading expert in the study of apoptosis (or programmed cell death), and his team of researchers are using advanced



Members of the Aging, Oxidative Stress & Cell Death PPG, directed by Dr. Brian Herman (sitting, right).

technologies such as transgenic/knockout mouse models and optical imaging to investigate the hypothesis that oxygen free radicals may accelerate aging and contribute to diseases of aging, such as cancer and heart and neurodegenerative diseases. Project investigators are focusing their studies on the mitochondria (the cell's power supply) to study whether oxidative stress contributes to premature apoptosis and aging by causing alterations to mitochondrial structure and function over time.

New Center for genomics

In another NIH-sponsored grant, the National Institute of Environmental Health Sciences chose the UTHSC as one five research centers across the nation to develop mouse models to study human disease. Jan Vijg, PhD, professor of physiology and research scientist with the Audie Murphy VA Hospital, was awarded a \$3.5 million Center Grant for his study, "Models for Human DNA Repair and Cell Cycle Variants in Aging and Environmental Disease."

Under Dr. Vijg's direction, researchers at the San Antonio Center are investigating specifically the diseases of late-life. The research, conducted at the Sam and

Ann Barshop Center for Longevity and Aging Studies, focuses on the gene defects, mutations, and the body's ability



Vijg

or inability to repair the DNA damage that occurs with age. Dr. Vijg will also lead the future human genetics program at the Barshop Center.

"The ultimate goal of our investigations into the basic mechanisms of aging is to find ways to free the elderly of the debilitating diseases of old-age, that is, to add quality-of-life to longevity," said Dr. Arlan Richardson, director of the AREC and the Barshop Center. "These grant awards further acknowledge the exemplary work of our researchers and the strength of our Aging Program at the UTHSC."

These grants bring the UTHSC a total of four NIA Program Project Grants and six Center Grants funded by federal and private sponsors.

Family and community medicine spans and unites disciplines for eldercare

With a focus on the unique health issues of the elderly patient, faculty members of the department of family and community medicine are involved in a myriad of projects that cross and connect disciplines throughout the UTHSC.

The department of family medicine is home to the Hartford Center for Excellence in Geriatrics Education - one of a nationwide network of centers working to increase the nation's capacity to provide effective and affordable health care to the elderly. Directed by David Espino, MD, the San Antonio Center sponsors activities that extend to faculty, fellows, residents, and students to help attract current and future physicians to geriatric medicine.

In one program, The American Society of Clinical Oncology recently funded collaborative effort between the Hartford Center and the department of medicine, division of medical oncology, to recruit and train geriatricians. Toni Miles, MD, PhD, professor, department of family and community medicine, is the principal investigator on this three-year, \$450,000 project where she will lead in the research training of physicians. Her teammates from the division of medical oncology are

Geoffrey Weiss, MD, professor and division chief, and Robert Marciniak, MD, PhD, assistant professor and assistant division chief for basic research. Dr. Weiss directs the fellowship program for Geriatric Oncology, a recent subspecialty of the division of medical oncology.

In other collaborative projects, Dr. Miles is working with Ian Thompson, MD, professor and director of the department of surgery's San Antonio Center of Biomarkers of Risk for Prostate Cancer. Dr. Miles and her colleagues are developing a survey and data analyses that will shed light on health issues of older men with prostate cancer. In a separate and distinct study, Dr. Miles is the principal investigator on a Centers for Disease Control project to develop training workshops for primary care physicians on the pros and cons of prostate cancer screening.

LeRoy Jones, MD, department of surgery, and Mrs. Lorraine Babcock, RN, family and community medicine, are collaborators on Dr.

Miles' project.

The department of family and community medicine is also working with the department of podiatry to create a "Podogeriatrics" clinic designed to train medical residents in the preventative care, treatment, and education for lower extremity health. This clinic will serve as a model for the development of similar



Podogeriatrics collaboration, L-R: Drs. Satterfield, principal investigator, department of podiatry; Dr. Jaén, chairman, department of family and community medicine; and Drs. Espino and Miles, project investigators, department of family and community medicine.

interdisciplinary geriatrics programs throughout Texas and the nation. Lawrence Harkless, DPM, professor and chair of the department of podiatry, directs this three-year, \$500,000 project sponsored by the Department of Health and Human Services. Vada Satterfield, DPM, associate professor, department of podiatry, is the principal investigator for Podogeriatrics.



2001 brings exceptional researchers to the UTHSC



SMITH

James R. Smith, PhD, joined the UTHSC department of pathology from the Baylor College of Medicine, Huffington Center on Aging this past July. He is a professor and the director of the Cellular Senescence Program at the Sam and Ann Barshop Center for Longevity and Aging Studies. Dr. Smith received his PhD in Molecular Biophysics from Yale University. His research interests include the control of gene expression in cellular senescence, for which he is the director of a \$8.2 million, NIA-sponsored Program Project Grant.

Mary "Kelly" Dunn, PhD, MS, RN, is the newly appointed chair of the department of chronic nursing care, School of Nursing. Dr. Dunn came to San Antonio from the Medical University of South Carolina, College of Nursing, Charleston. She received her MS from Boston University and her PhD in Adult Health and Academic Administration from the University of Texas, Austin. In the field of aging research, Dr. Dunn's interests are in the area of physical activity to improve health-related quality of life. She is leading a team of UTHSC faculty in the planning of a multidisciplinary Master of Science in Gerontology.



DUNN



PEREIRA-SMITH

Olivia Pereira-Smith, PhD, comes to the UTHSC from the Baylor College of Medicine, Huffington Center on Aging. She is a professor in the department of cellular and structural biology. Dr. Pereira-Smith received her PhD in Biomedical Sciences from Worcester Polytechnic Institute, Massachusetts. Among her many awards and honors are an NIH MERIT grant for molecular and cytogenetic studies of human cell aging, the Nathan Shock Award from the Gerontological Society of America, and the Allied Signal Award for Excellence in Aging Research. Dr. Pereira-Smith is a scientist with Cellular Senescence Program at the Barshop Center for Longevity and Aging Studies.

Robert Marciniak, MD, PhD, is a cross-appointed assistant professor of medicine and cellular and structural biology and the assistant division chief for basic research, medical oncology. Dr. Marciniak received his MD from Harvard Medical School and his PhD from Massachusetts Institute of Technology, where he also completed his postdoctoral studies in biology under the direction of Dr. Leonard Guarente. The focus of Dr. Marciniak's research is the influence of telomere activity on aging and cancer. He is a recipient of the Beeson Physician Faculty Scholar Award from the American Federation of Aging Research for 2002-2005.



MARCINIAK

Peter Hornsby, PhD, was recruited from the Baylor College of Medicine, Huffington Center on Aging, joining the UTHSC department of physiology as a professor this past September. Dr. Hornsby received his PhD in Cell Biology from the Institute of Cancer Research of the University of London, London, England. Among his awards and honors are an NIH MERIT grant for his studies on the hormone, DHEAS, the Ellison Foundation Senior Scholarship Award, and the 2001 Glenn Foundation Award for Excellence in Aging Research. Dr. Hornsby is a scientist with the Barshop Center's Cellular Senescence Program where he's examining the use of cell transplantation techniques to probe cellular aging.



HORNSBY

Yidong Bai, PhD, came to the UTHSC from the California Institute of Technology, where he completed his postdoctoral studies under the direction of Dr. Giuseppe Attardi. He earned his undergraduate degree at Fudan University, China and his PhD at Columbia University. Dr. Bai is an assistant professor in the department of cellular and structural biology with a research focus on the genetic and functional analyses of mitochondrial DNA mutations associated with aging.



BAI

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*A gift of a peony is a wish for
a long and prosperous life.*