

THE SAGE LETTERS

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The University of Texas Health Science Center at San Antonio

Breaking new ground for aging research at the UTHSCSA

February 20, 2003 was a day to celebrate the future as dignitaries from around the state gathered to break ground for the building that will house the Sam and Ann Barshop Center for Longevity and Aging Studies. The soon-to-be-built 48,000 square foot, cutting-edge basic research facility is one of only two such units in the country to be dedicated solely to the scientific study of aging processes and aging-related diseases.

Two U. S. senators participated in the ceremonies led by UTHSCSA president, Francisco Cigarroa, M.D. Dr. Cigarroa lauded the hard work and accomplishments of the UTHSCSA researchers who have elevated the university's aging program to prominence, adding, "This Center will solidify the Health Science Center's national reputation for excellence in aging research."

U. S. Senator Kay Bailey Hutchison gave the keynote address, praising the breakthrough research and dedication of scientists on Texas campuses who have put the state on the map. "One of my top priorities in the Senate has been to highlight the centers of excellence in our Texas institu-



(L-R) UT System Regent Cyndi Taylor Krier; former UT System Regent Sam Barshop and his wife, Ann; U.S. Sen. Kay Bailey Hutchison; UTHSCSA President, Dr. Francisco Cigarroa; U.S. Sen. John Cornyn; State Sen. Jeff Wentworth; Texas Research Park CEO, Glenn Biggs; and State Rep. Ken Mercer break ground on the Sam and Ann Barshop Center for Longevity and Aging Studies.

Mr. Barshop and his wife, Ann, donated the crucial \$4 million that made the new research building possible.

Mr. Barshop is a former University of Texas System Regent and serves on numerous UT boards and committees. During the ceremonies, Mr. Barshop described his vision of a future on which our elderly remain healthy, independent citizens, where the government saves billions of dollars in healthcare costs that could be redirected to educating our children while sparing our families the hardships and burdens of providing care to disabled elderly family members. Mr. Barshop applauded UTHSCSA scientists who are working to make this vision a reality in the foreseeable future, and presented the challenge, "With help from everyone in this audience, we can make this happen," Mr. Barshop said.

Dr. Arlan Richardson, director of the Barshop Center, spoke of the research conducted at the Center, "This facility allows us to bring together leaders in aging research to focus their efforts on defining the genes and processes



Mr. Sam Barshop shares his vision of healthy aging at Center ceremonies.



(L-R) Ann Barshop, U.S. Sen. Kay Bailey Hutchison, Sam Barshop, President Cigarroa, and U.S. Sen. John Cornyn celebrate groundbreaking.

tions and to make sure they get the prominence and funding they so richly deserve," said Sen. Hutchison.

Among other luminaries who participated in the ceremonies were U.S. Senator John Cornyn, U.S. Representatives, Charles Gonzalez and Ciro Rodriguez, the Honorable Rita Clements, Vice-Chair of the UT System Board of Regents, and UT Regent Cyndi Taylor Krier. All speakers paid tribute to the day's guests of honor, Mr. and Mrs. Sam Barshop, for their contributions to Texas higher education.

(continues on page 2)

Groundbreaking

that underlie aging, research that is critical to our being able to manipulate the aging process. Scientists at the Barshop Center apply the latest advances in cell biology, biochemistry, and genome sequencing to discover ways to alleviate the diseases of aging and ultimately to improve quality of life for generations to come," said Dr. Richardson.

The new building is the result of the visions of Drs. Edward Masoro, founding director of the university's Aging Research and Education Center (AREC) and Dr. Richardson.

The journey began in 1991, when Dr. Masoro took his idea of a university-wide center aimed at enhancing and developing aging research to then university president, Dr. John Howe. With the support of local legislators and the community, the Texas Legislature gave Dr. Masoro the green light to establish the AREC in 1992. San Antonio attorney, Ben Foster, Jr., was instrumental in rallying support from the community for the AREC, who continues to be a strong advocate for the UTHSCSA aging program.

Upon the retirement of Dr. Masoro in 1997, Dr. Richardson took the helm of the AREC. At that time,

program. Four years ago, with the belief that basic research is best conducted when leaders in a field



Dr. Edward Masoro, professor emeritus and founding director of the Aging Research and Education Center, joins Dr. Arlan Richardson, current AREC director and Barshop Center director, in celebrating the groundbreaking of the new research building to house studies of aging processes and healthy longevity.

gather in one place to focus and collaborate on a specific problem, Dr. Richardson set out to raise awareness of the need for a dedicated, biogerontology research facility.

President Cigarroa and the UTHSCSA administration supported Dr. Richardson in a building campaign that would garner a \$6 million challenge grant from the Brown Foundation, Inc., and culminate in another \$6 million from the UT System Permanent University Fund, a \$3 million facilities grant from the National Institutes of Health, and the pivotal \$4 million donated by Mr. and Mrs.

Building on the aging program's history of more than twenty years of research excellence and expectations for its future growth, Dr. Richardson also was able to recruit top-caliber scientists to the UTHSCSA. Among them are Dr. Jan Vijg from the Harvard School of Medicine, world-renowned for his work in mouse genomics and the role of DNA damage in cancer and aging. Dr. Vijg leads the Barshop Center's Human Genetics of Aging Program. In July 2001, Dr. James Smith, who was then co-director of the Huffington Center on Aging at the Baylor College of Medicine, joined the UTH-

SCSA. Dr. Smith, an eminent molecular biophysicist, is studying gene expression in cellular aging. He leads the Center's Cellular Senescence Program and is co-director of the Barshop Center. Also joining the UTHSCSA from Baylor are Dr. Olivia Smith, who is known for her work in molecular and cytogenetic studies of human cell aging, and Dr. Peter Hornsby, who is using advanced cell transplantation techniques to probe cellular aging. The two other research programs that comprise the Barshop Center are the Rodent Models of Aging Program and the Invertebrate Aging Program. Dr. Richardson, noted for his studies on the effects of caloric restriction and oxidative stress in aging, leads the Rodent Models of Aging Program.

The new building marks the first step in the construction of a world-class complex for investigational research into the genetics of aging and healthy longevity. It is located on the UTHSCSA campus at San Antonio's Texas Research Park. Construction on the new building is scheduled for completion in November 2004.

For the latest in Center growth and building construction developments, visit the Barshop Center Web site at: <http://www.barshop@uthscsa.edu>.



Architectural drawing of the first new building to comprise the Sam and Ann Barshop Center for Longevity and Aging Studies.

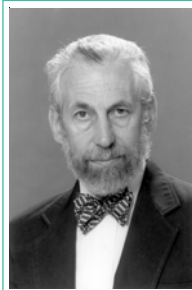
Dr. Sanford Miller, then Dean of the School of Biomedical Sciences, approached Dr. Richardson with a request to further develop the aging

Barshop. The campaign also benefited from the active and vital support of Mr. and Mrs. Thomas I. O'Conner, prominent San Antonio community leaders.



San Antonio VA Research Service ranks among top VHA sites in the nation

Biomedical research is a congressionally mandated mission of the



Meyer D. Lifschitz, MD, professor of medicine, UTHSCSA and ACOS for research and development, STVHCS. In his role as ACOS since 1988, he has been integral to the successful growth of the STVHCS research service.

Veterans Health Administration (VHA), Department of Veteran's Affairs (VA). Established "to discover knowledge and create innovations," 145 national research services currently perform this mission under the VHA's Office of Research and Development.

The San Antonio VHA research service, South Texas Veterans Health Care System, (STVHCS), Audie Murphy Division, was founded in 1984

and at present has 531 active projects, 160 approved investigators, and expenditures for fiscal year 2002 totaling nearly \$32 million. Meyer D. Lifschitz, M.D., associate chief of staff (ACOS) for research and development, STVHCS, explained, "Although research is not best evaluated by dollars, the amount of research support for a program is the easiest quantitative measure. Research at the STVHCS has steadily grown, taking us to a national ranking of eighth among 145 research services." Currently, the STVHCS is the only VA facility in Texas to rank among the top 10 services and outranks Ann Arbor and Seattle, nationally.

The STVHCS also has a strong aging studies component; it is one of 20 VA medical centers with a Geriatric Research and Education Clinical Center and one of two with an Environmental Hazards Center.

Biology of aging is focus of new training program for research scientists

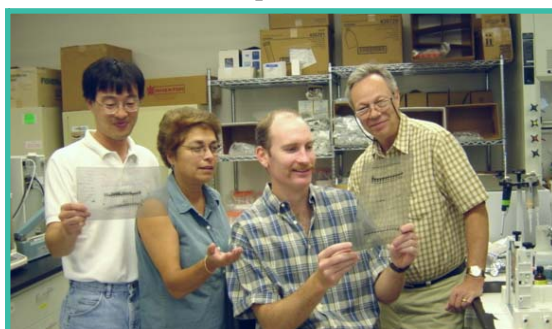
Graduate and postgraduate fellows attending the UTHSCSA have the opportunity to learn about the science of aging from some of the nation's best researchers in the field.

In a new program funded by the National Institute on Aging (NIA), 27 faculty members from various departments across the UTHSCSA campus are participating in a program to train future gerontologists.

The NIA recently awarded the UTHSCSA a five-year, \$2.9 million training grant that allows students to choose from a broad range of topics in basic research into aging processes. In this, the largest NIH-sponsored training program at the UTHSCSA, faculty members from the departments of cellular and structural biology, physiology, pharmacology, pathology, and medicine will share their expertise in areas that include the genetics of aging, lifespan interventional analyses in animal models, and age-related

diseases. The program supports ten predoctoral and six postdoctoral students.

"This interdepartmental, interdisci-



Dr. James Smith and Dr. Olivia-Pereira Smith, director of the biology of aging training program, discuss results of experiments with trainees.

plinary training program is exciting because it provides an opportunity to enhance interest in a number of areas of aging research with the possibility of generating a cadre of new researchers in aging, who will make scientific contributions to improve the healthspan of the elderly," said Olivia-Pereira Smith, PhD, professor of cellular and structural biology and the program's director.

A selection of VA-sponsored research of AREC faculty members:

Bandana Chatterjee, PhD: "Androgen Action and Receptor Inactivation"

Narayanasmy Elango, PhD: "Translational Regulation of RUNX2 during Osteoblast Differentiation"

Yuji Ikeno, MD, PhD: "Overexpression of Thioredoxin 1 in Aging and Age-related Disease"

Sharon Lewis, PhD: "Stress-Busters Program for Caregivers of Patients with Neurological Diseases"

Robert Marciniak, MD, PhD: "Function of Werner Syndrome Protein in Telomere Maintenance"

Arlan Richardson, PhD: "Use of Transgenic Mice to Test the Free Radical Theory of Aging"

Randy Strong, PhD: "Control of Androgenic Gene Expression by PACAP"

Holly Van Remmen, PhD: "Membrane Oxidative Damage after Mitochondrial Function"

Christi Walter, PhD: "O-6-Methylguanine-DNA Methyl-transferase in Hepatocellular Carcinoma"

Chih-Ko Yeh, PhD: "Cellular signals in isoproterenol induced salivary cell growth"

The trainees selected for the new program also will participate in experimental investigations under the guidance of senior investigators who have active research projects in aging. These studies involve such areas as programmed gene expression changes, somatic mutations and epigenetic changes, free radicals, DNA damage and repair, transmembrane signaling, oncogenes and tumor suppressor genes, apoptosis, aging endocrine and immune systems, and the molecular aspects of Alzheimer's and Parkinson's diseases. To enhance their learning experience, trainees will attend a national level professional meeting each year.

The new training program is the result of blending two, smaller NIA-sponsored training programs, Nutritional and Interventional Gerontology, funded since 1990 and directed by Dr. James Nelson, and The Molecular Genetics of Aging, funded since 1989 and directed by Dr. Bandana Chatterjee.





Dr. Pamela Larsen

Investigator of *C. elegans* longevity joins the UTHSCSA

This past December, Pamela Larsen, PhD, joined the UTHSCSA as associate professor of Cellular and Structural Biology. Dr. Larsen came to San Antonio from the University of California Los Angeles and was previously at the University of Southern California, where she was the inaugural Paul F. Glenn Foundation Chair in Cellular and Molecular Gerontology. Her research focus is the biological mechanisms of aging in *Caenorhabditis elegans* (*C. elegans*). In her work published in *Science*, Dr. Larsen showed that the lifespan of *C. elegans* could be extended by diets deficient in Coenzyme Q. Dr. Larsen is a current Ellison Medical Foundation Senior Scholar in Aging and will be part of the Invertebrate Program of the Sam and Ann Barshop Center for Longevity and Aging Studies.

Recent Accomplishments of AREC Faculty Members

- ★ **P. John Hart, PhD**, assistant professor of biochemistry and director of the X-ray Crystallography Core Laboratory, is the lead author on the work titled, "Amyloid-like filaments and water-filled nanotubes formed by SOD1 mutant proteins linked to familial ALS," published in *Nature Structural Biology*.
- ★ **Paul Hasty, DVM**, associate professor, Institute of Biotechnology, and **Jan Vijg, PhD**, professor of physiology, Barshop Center for Longevity and Aging Studies, were among the collaborating authors of "Aging and Genome Maintenance: Lessons from the Mouse," published in *Science*.
- ★ **Thomas Marshall, DDS, MSED**, associate professor of restorative dentistry, received the Stephen H. Leeper Award for Teaching Excellence from Omicron Kappa Upsilon National Dental Honor Society.
- ★ **Edward J. Masoro, PhD**, professor emeritus and former chair of the department of physiology, has written a new book on caloric restriction, titled, "Caloric Restriction: A Key to Understanding and Modulating Aging." The book is part of the Research Profiles in Aging Series published by Elsevier Science.
- ★ **Roger J. M. McCarter, PhD**, professor of physiology, was elected co-chair of the 2006 Gordon Conference on the Biology of Aging.
- ★ **Olivia Pereira-Smith, PhD**, professor of cellular and structural biology, was elected chair of the Biological Sciences section of the Gerontological Society of America.
- ★ **Arlan Richardson, PhD**, professor and director of the AREC and Sam and Ann Barshop Center for Longevity and Aging Studies was invited to serve on the Board of Scientific Counselors of the National Institute on Aging.
- ★ **Holly Van Remmen, PhD**, assistant professor of physiology-research, was elected to the board of directors of the American Aging Association and chair of the membership committee.

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



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