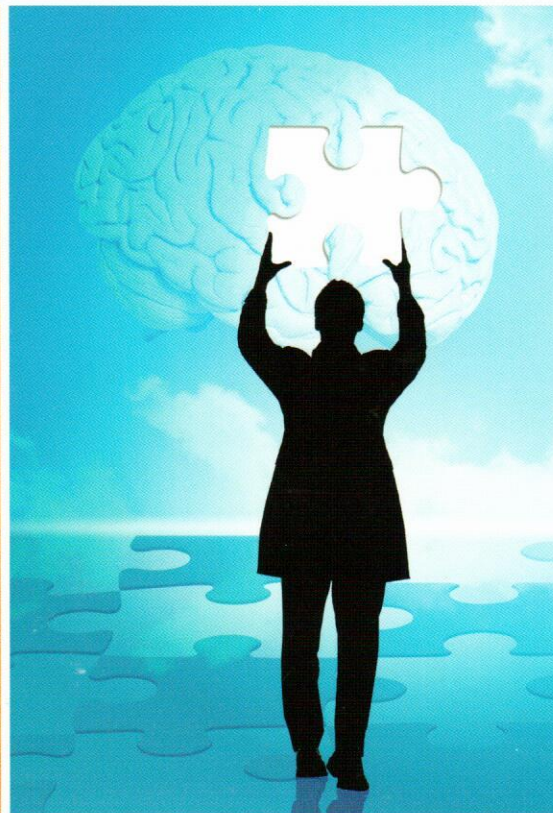


CENTER FOR
VITAL LONGEVITY

THE SCIENCE OF THE AGING MIND

2012 ANNUAL REPORT

SEPTEMBER 1, 2011 — AUGUST 31, 2012



A MESSAGE FROM THE DIRECTORS

The past year has been a period of expansion and achievement for the Center for Vital Longevity. Center researchers are achieving international recognition for work using new brain imaging techniques that are revealing for the first time how the aging brain functions and changes. Center scientists published studies showing how the brains of healthy adults maintain function in the face of pathology associated with Alzheimer's disease. Other research discovered differences in neural circuits in older adults that were associated with good versus poor memory. Breakthroughs were reported in understanding how to train and improve core cognitive abilities like attention and working memory, along with how exercise and some video games can support specific functions of the mind.

Because of the quality and importance of our research, we have been successful at securing highly competitive national grants and have presented our research far and wide in the international scientific community. The scientific energy and excitement at the center is palpable. We were able to recruit three exceptionally talented young faculty members to our center and now have one of the largest and most accomplished concentrations of researchers studying the aging mind in the world. Center research is further strengthened by our many collaborations with The University of Texas Southwestern Medical Center.

We are proud of the tremendous growth and scientific accomplishments of our center. Learning how the aging mind works is the key to unlocking a world where neural health is treated as readily as cardiovascular health. Research on the aging mind has received only a small fraction of the investment that cardiovascular and cancer research has enjoyed. We can confidently state that Center for Vital Longevity investigators can use research investments to uncover new truths about the aging brain that will play an important role in maintaining cognitive vitality in future generations.



YEAR IN REVIEW

The Center for Vital Longevity (CVL) continued to forge an impressive track record of scientific achievement in 2012, including publication of more than 40 peer-reviewed research articles, awards of more than \$5 million in federal research dollars and expansion of faculty and staff. We also hosted world-renowned experts in the fields of memory, cognitive aging and Alzheimer's disease.

CVL Leadership Nets \$4 Million in Federal Funding

Center co-directors Dr. Denise Park and Dr. Michael Rugg both received prestigious research awards totaling more than \$4 million in funding from the National



Dr. Denise Park



Dr. Michael Rugg

Institute on Aging, part of the National Institutes of Health. The funds will support sophisticated brain-imaging studies on how aging affects the brain and memory. During the next five years \$3 million will be devoted to the Dallas Lifespan Brain Study, one of the nation's largest projects examining neural and cognitive aging across the entire adult lifespan.

Center Hosts Public Lecture by Renowned Longevity Expert

CVL hosted a highly attended public lecture by Dr. Laura Carstensen, founding director of the Stanford University Center on Longevity, who spoke about how myths and misconceptions regarding aging stop many people from preparing for long, fulfilling and financially stable lives. The center partnered with UT Dallas' Center for Values in Medicine, Science and Technology for the event.

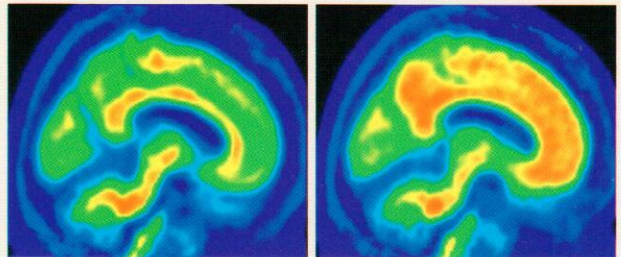


Dr. Laura Carstensen

Joint Research Symposium with UTSW

More than 100 researchers and clinicians from across the state of Texas gathered at CVL for a research symposium jointly sponsored by the Center for Vital Longevity and the UT Southwestern Medical Center Alzheimer's Disease Center. The symposium featured a keynote address by Dr. Reisa Sperling of Harvard Medical School, a leading expert on the early diagnosis and treatment of Alzheimer's disease, as well as a discussion of new research on how health factors such as hypertension and vascular disease affect how the brain ages.

Amyloid Brain Scans in Normal Healthy Adults



Left panel shows minimal amyloid deposits and right panel shows high levels of amyloid, which may indicate preclinical Alzheimer's disease well before symptoms appear.

New Research Paves Way Toward Early Alzheimer's Diagnosis

In a groundbreaking study published in the journal *Neurology*, CVL scientists found that some very healthy adults had high levels of amyloid protein, a diagnostic marker of Alzheimer's disease. The study marks a crucial step toward being able to predict who may be at risk of Alzheimer's disease long before symptoms appear.

Center Establishes Sallie Asche Fund for Vital Aging

In March, CVL established the Sallie Asche Fund for Vital Aging in honor of the center's friend, supporter and Advisory Council member Sallie P. Asche. The fund will be used to sponsor lectures and research on the science of the aging mind, with the hope that future generations will no longer suffer from Alzheimer's disease and other cognitive losses associated with aging.



Sallie P. Asche

FDA Approves Vital CVL Research Tool

In April, the US Food & Drug Administration approved the first diagnostic test for plaques in the brain associated with Alzheimer's disease. Center scientists were among the earliest adopters of the diagnostic tool, an imaging agent called florbetapir, in their efforts to understand healthy brain aging and the earliest signs of Alzheimer's.

Center Launches Major Donor Campaign

CVL aims to raise \$15 million over the next three years to support its mission of ensuring the cognitive health and vitality of current and future generations. The goal is part of UT Dallas' first comprehensive fundraising campaign, which seeks to raise \$200 million to accelerate the University's progress toward becoming a Tier One research institution.

New Faculty Build on CVL's Research Momentum

Three outstanding young faculty members at the forefront of understanding how the brain and cognition change with age joined CVL at the start of the 2012-2013 academic year. Dr. Kristen Kennedy, Dr. Karen Rodrigue and Dr. Gagan Wig were named assistant professors of behavioral and brain sciences. They add to the core of excellence established at CVL, which in its short history has become an international leader in improving our understanding of cognitive aging.



Dr. Karen Rodrigue



Dr. Gagan Wig



Dr. Kristen Kennedy

2011-2012 KEYNOTE PRESENTATIONS

45 invited presentations, including:

International Neuropsychological Society
University of Edinburg
International Neurology
5th International Conference on Memory (UK)
University of Zurich
University of California, Irvine
University of Michigan
National Chenggi University (Taiwan)
Wayne State University
Texas A&M University
The University of Texas Southwestern Medical Center
Georgia Tech University
National Institutes of Health
University of Missouri
Memory Disorders Research Society (Spain)
American Psychological Association
Human Amyloid Imaging Conference
International Society for Behavioral Neuroscience (Italy)

2011-2012 MAJOR PUBLICATIONS

45 peer-reviewed research papers, in publications including:

Neurology
Cerebral Cortex
Neurobiology of Aging
Journal of Cognitive Neuroscience
NeuroImage
Handbook of Psychology of Aging
Journal of Neuroscience

CENTER RESOURCES

The Center for Vital Longevity's scientists compete for prestigious research awards from the National Institutes of Health (NIH). Their current portfolio for these highly competitive national awards is the largest of any center or school at UT Dallas — a testament to the excellence and importance of the research done at the center. In 2012, center researchers received four major new NIH awards that totaled \$5.5 million from the National Institute on Aging, including a highly coveted MERIT Award. These funds support research on the neural circuitry of memory, neural and cardiovascular health, as well as the Dallas Lifespan Brain Study.

An award also was received from Avid Radiopharmaceutical, a division of Eli Lilly & Co., to support the innovative work aimed at understanding the earliest phases of Alzheimer's disease, before symptoms appear. Each center scientist at the faculty level also receives a one-time "start-up" budget from UT Dallas and other state sources to set up his or her laboratory.

The state-of-the-art neuroimaging techniques, equipment and personnel used by center scientists are quite costly, and there is a critical need for private philanthropy at the center. This will be a major focus for 2013. The center's development staff or the center co-directors are available to work with interested individuals and foundations.

PHILANTHROPY

The ambitious projects undertaken by the Center for Vital Longevity would not be possible without the generous contributions of all of our donors. We extend special thanks to our Directors' Research Circle for their support and dedication to our mission.

Anonymous (2)

Mr. & Mrs. Norman Abdallah

Dr. and Mrs. Kenneth Z. Altshuler

Ms. Mary Susan Barnhill

Mr. & Mrs. Bill C. Booziotis

Ms. Genevieve Collins

Mr. Richard H. Collins

Ms. Calvert K. Collins

Ms. Margaret S. Dear

Mr. & Mrs. Robert Goldstein

Mr. & Mrs. John J. Gurun

Ms. Jannah L. Hodges

Ms. Linda C. Marcus

Dr. John Q. Stilwell &
Ms. Nancy M. O'Neil

Ms. Sandra K. Thomas

Mr. Jack A. Turpin

Mr. Bill H. Venegoni & Ms. Janet Bade

Mr. Lawrence Warder

Ms. Jane A. Wetzel

MISSION

The mission of the Center for Vital Longevity at UT Dallas is to understand and improve the vitality of the aging mind.

Center scientists are using sophisticated brain-imaging techniques to:

- **Discover** early markers of Alzheimer's disease long before symptoms appear.
- **Understand** how memories are formed and retrieved and how these processes change with age.
- **Develop** interventions that enhance cognitive function and slow the aging process.

FACULTY AND STAFF

Denise C. Park, PhD
Co-Director, Professor, Distinguished University Chair and UT Regents' Research Scholar

Michael D. Rugg, PhD
Co-Director, Professor and Distinguished Chair

Chandramallika Basak, PhD
Assistant Professor

Karen Rodrigue, PhD
Assistant Professor

Kristen Kennedy, PhD
Assistant Professor

Gagan Wig, PhD
Assistant Professor

Darla Wade
Associate Director

Shannon Carver
Research Administration Manager

Laura Valdespino
Associate Director of Development

ADVISORY COUNCIL

Ms. Sandra Thomas, CPA (Chair)
Istation

Ms. Chela Abdallah
Community Volunteer

Dr. Kenneth Altshuler
UT Southwestern Medical Center

Ms. Mary Susan Barnhill
MSB Interiors

Mr. Bill Booziotis
Booziotis & Company Architects

Mr. Karl Chiao
Heritage Auction Galleries

Mr. Richard Collins
Istation

Ms. Genevieve Collins
Istation

Ms. Christina Melton Crain
Crain Law Offices

Mr. Jay Dempsey
Creative Health Capital, LLC

Ms. Carol Fox
Community Volunteer

Mr. Gary Griffith
Today Foundation

Mr. G. Michael Gruber
Gruber Hurst Johansen Hail Shank LLP

Ms. Jannah Hodges
Hodges Partners

Ms. Laree Hulshoff
Community Volunteer

Ms. Milla Perry Jones
United Surgical Partners International

Ms. Glenda Kemple
Kemple Capital

Ms. Nancy M. O'Neil
Community Volunteer

Ms. Laurey Peat
Laurey Peat + Associates

Ms. Anita Porco, RN
Nurses Today

Mr. Jerry Reis
Property Advisers, Inc.

Ms. Wendy Segrest
American Heart Association

Ms. Helen Small
Center for Vital Longevity

Dr. John Stilwell
UT Dallas

Mr. Jack Turpin
Retired, Hallmark Electronics

Mr. Lawrence Warder
Retired, U.S. Dept. of Education