



Institute for Aging & Alzheimer's Disease Research Newsletter

APRIL 2013

VOL 1, ISSUE 1

Brain Bank to Lay Groundwork for Discoveries



One of the distinguishing features of the Institute for Aging and Alzheimer's Disease Research (IAADR) is that it has a dedicated Brain Bank to evaluate the neurologic features of aging in both healthy and

diseased individuals. We are currently focused on both the recruitment of prospective donors as well as analysis of the samples.

Given that dementing processes can only be understood by comparing the brains of individuals with degenerative neuropathology to those without degenerative changes, we seek donors whose cognitive function is intact in addition to donors with evident cognitive impairment. Individuals are enrolled at the youngest age possible so that clinical data may be correlated with the aging and dementing processes.

In addition to assessments by routine pathologic techniques, fresh tissue will be processed in a way that permits analysis of an individual's DNA and associated

proteins (chromatin) as they are present in an individual brain. Such analysis will lead to an understanding of "epigenetic" changes that occur in neurodegenerative diseases that may reflect experience as well as inherent pathologic processes.

To date, the program has enrolled 26 individuals from which 11 brains have been obtained and stored. Tissue obtained through the program will be distributed to investigators to facilitate translation of their basic research into the design of clinical studies.

This exciting opportunity to provide the experimental resource of human material to basic scientists is within reach. We hope that members of the Fort Worth community, and beyond, will join us in this endeavor by enrolling in the Brain Bank research program.

Examining and comparing healthy and diseased brains lays the foundation for scientific discoveries that will lead to improved treatments and better quality of life for those suffering from dementia. What's more, it will help save families and future generations from the demands of caring for a person with dementia.

Rosalie M. Uht, MD, PhD
*Associate Professor,
Director of the IAADR Brain Bank*

How can I avoid getting a dementing illness like Alzheimer's Disease?

W

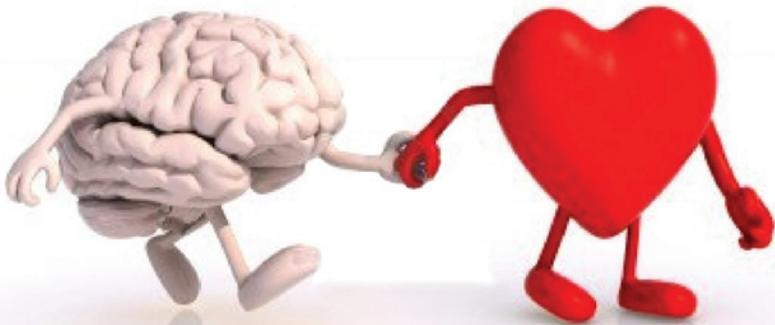
hile there is ongoing research directed at this, we don't have all the answers at this time. Some risk factors such as age and genetics cannot be altered by changes in our day-to-day behaviors, but other health behaviors can help reduce your risk for AD.

However, one important research discovery teaches us that keeping your heart healthy favors a healthy brain.

- Maintaining a normal blood pressure
- Maintaining a healthy diet
- Maintaining a normal cholesterol level
- Maintaining a normal level of blood sugar
- Getting regular exercise

Diets that are considered "heart healthy" are those that include less red meat and emphasize whole grains along with fruits, vegetables, fish, shellfish, nuts, olive oil, and other healthy fats.

Some studies have also indicated that keeping socially active and participating in activities that engage your brain may also decrease your risk of cognitive decline.



Physical exercise is also valuable. Regular aerobic exercise (such as walking) may not only help protect the brain, but may also result in improved sleep and decreased stress.

Another recommendation is to avoid head trauma/injury by always wearing a seat belt, using a helmet when playing sports and/or riding a bike, and evaluating your home for fall hazards and removing them.

Because we are living longer, we need to better understand the diseases of aging and how to treat them. Your participation will aid in this effort.

Currently Enrolling IAADR Research Studies:

Exercise and NT-020 (NutraStem): Effects on Stem cells

Healthy Adults age 50 to 70 are needed for a clinical research study investigating the effect of light exercise and an investigational dietary supplement on your blood stem cells. Participants will be compensated for their time.

Genetic and Biomarkers Study of Alzheimer's Disease

Participants age 50 and older who have been diagnosed with Alzheimer's disease are needed to participate in this study. The purpose of this study is to better understand the causes, presentation, and treatment of Alzheimer's disease.

Health & Aging Brain Among Latino Elders (HABLE)

The HABLE study places an emphasis on studying aging among Mexican Americans in Texas. Studying healthy and unhealthy aging in the Mexican American culture will hopefully allow us to create better interventions and treatment programs. Participation may include blood draw, medical record review, and interview. Current enrollment is limited to those age 50 and older.

Health & Aging Brain Study

The Health and Aging Brain Study is a new research project at UNTHSC. To better understand the biological and lifestyle factors that influence memory and thinking as we age.

We are making special efforts to find community members with Alzheimer's disease, memory complaints, or diabetes to participate in our research. Participation may include blood draw, medical record review, and interview. Current enrollment is limited to people age 50 and older.

UNTHSC Brain Bank

The Brain Bank is seeking both healthy and demented individuals who are willing to donate their brain after death in order to assist researchers in the battle against dementing illnesses such as Alzheimer's Disease.

For more information about IAADR clinical research studies, please contact Kim Brown at 817-735-2694 or kim.brown@unthsc.edu.

MESSAGE FROM THE DIRECTOR



This past year has been one of continued growth and enhancement for the IAADR.

Effective November 1, 2012, I took over as interim director, following the departure of Dr. James W.

Simpkins, the founding Executive Director of the IAADR, to West Virginia University. Rest assured that the interactions and collaborations of our team with Dr. Simpkins continue, now with the added dimension of having access to the resources of West Virginia University.

The IAADR is also excited to have successfully recruited Drs. Sid O’Bryant and Leigh Johnson, who together with another recent recruit, Dr. Robert Barber, not only greatly expand the “translational” activity of the IAADR, but also enhance our opportunity to collaborate with the Texas Alzheimer’s Research and Care Consortium (TARCC) and their affiliated institutions. In addition, the IAADR, in conjunction with the Department of Pharmacology and Neuroscience, also successfully recruited Drs. Victor Uteshev and Kunlin Jin, which added expertise in nicotinic receptor pharmacology/neurobiology and neural stem cells to the portfolio of the IAADR.

Through the efforts of Dr. Rosalie Uht, we also formally initiated activities of the Alzheimer’s

disease arm of our Brain Bank and have, this past year, been “enrolling” prospective brain donors. The Brain Bank is expected to serve multiple investigators who span different departments and schools, by serving as a resource for pathologically characterized brain tissue.

We are also pleased to announce a generous gift from the Rainwater Charitable Trust in the amount of \$500,000. This gift will go toward the support of research and educational activities within the IAADR/Division of Geriatrics, and importantly, has seeded the establishment of an endowment to help ensure the sustainability of the aging and degenerative disease research efforts at UNTHSC.

“The impact of Alzheimer’s disease on individuals, families and the healthcare system makes it one of America’s greatest medical, social and economic challenges of our time.”

— Mehharvan Singh, PhD

As interim director for the IAADR, I look forward to my interactions with the talented group of faculty and staff here at UNTHSC and pledge to promote inter-professional relationships for research on aging and age-related diseases across the institution and beyond. I will also help ensure that the IAADR continues to be a valuable and accessible resource to our community, providing educational opportunities and information relating to brain aging and Alzheimer’s disease, as well as

access to the high quality research and care ongoing on our campus.

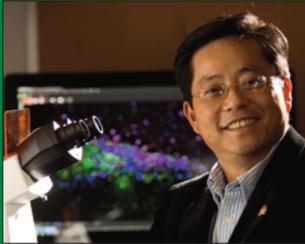
If you are interested in becoming a member of the IAADR, please send your queries to me at: meharvan.singh@unthsc.edu.

Get to know your IAADR Faculty, Staff, and Students



Victor Uteshev, PhD

Dr. Uteshev's lab is working extensively on creating drug therapies to improve brain function. For example, they are studying the positive effects that chemicals similar to nicotine (but without the harmful effects of nicotine) may have on the brain, including the potential to improve thinking and increase resistance to events that can cause brain injury.



Kunlin Jin, MD, PhD

Dr. Jin's laboratory focuses on the mechanisms underlying regulation of aging on neural stem cells after stroke. Specifically, he is exploring the roles of Notch pathway in neurogenesis during aging, whether a brain damaged by a stroke can be repaired through a stem cell-based tissue engineering approach, and whether hippocampal neurogenesis contributes to the neuropathology and cognitive impairment of Alzheimer's disease.



Sid O'Bryant, PhD

Establishing a blood test for the early detection of Alzheimer's disease is the focus for Dr. O'Bryant's team. They are also studying how the blood test and other biomarkers of Alzheimer's disease are impacted by ethnicity. Additionally, the team has taken the lead on generating international standards for pre-analytic procedures related to blood-based biomarkers in Alzheimer's disease.



Kim Brown, RN
Clinical Research Coordinator

Kim, a nurse for 20 years, is responsible for overall management and implementation of clinical research protocols, ensuring compliance, efficiency, and the safety and well-being of participants. Responsibilities include recruitment, consenting, screening and enrollment of study participants, coordinating appointments and visits, and management of study data. She also coordinates donations of healthy and diseased brains for the Brain Bank.

Please call Kim at 817-735-2694 or e-mail her at kim.brown@unthsc.edu if you would like information about clinical research and/or brain donation.

Recent IAADR Grants and Funding Achievements

Michael Forster, PhD	<i>Rodent Testing to Identify Pharmacotherapies for Substance Dependence</i> funded by the National Institute on Drug Abuse.
Meharvan Singh, PhD	<i>A Proposal for Pilot Grants Funding</i> funded by Rainwater Charitable Trust. <i>Novel Mechanistic Targets of Steroid Hormones in the Brain</i> funded by the National Institute on Aging.
Liang-Jun Yan, PhD & Michael Forster PhD	<i>Dietary Targeting of Dihydrolipoamide Dehydrogenase for Stroke Tolerance</i> funded by the National Institute of Neurological Disorders and Stroke.
John Schetz, PhD	<i>Target-Based Discovery of a Novel Treatment Strategy for Alzheimer's Disease</i> funded by the Alzheimer's Drug Discovery Foundation. <i>Functionalized Coating Chemistries for the Environment – Responsible Control of Barnacle Biofouling</i> funded by E. Paint Co. <i>Druggable regulators of nitric oxide production as a new Alzheimer's disease therapy</i> funded by the National Institute on Aging.