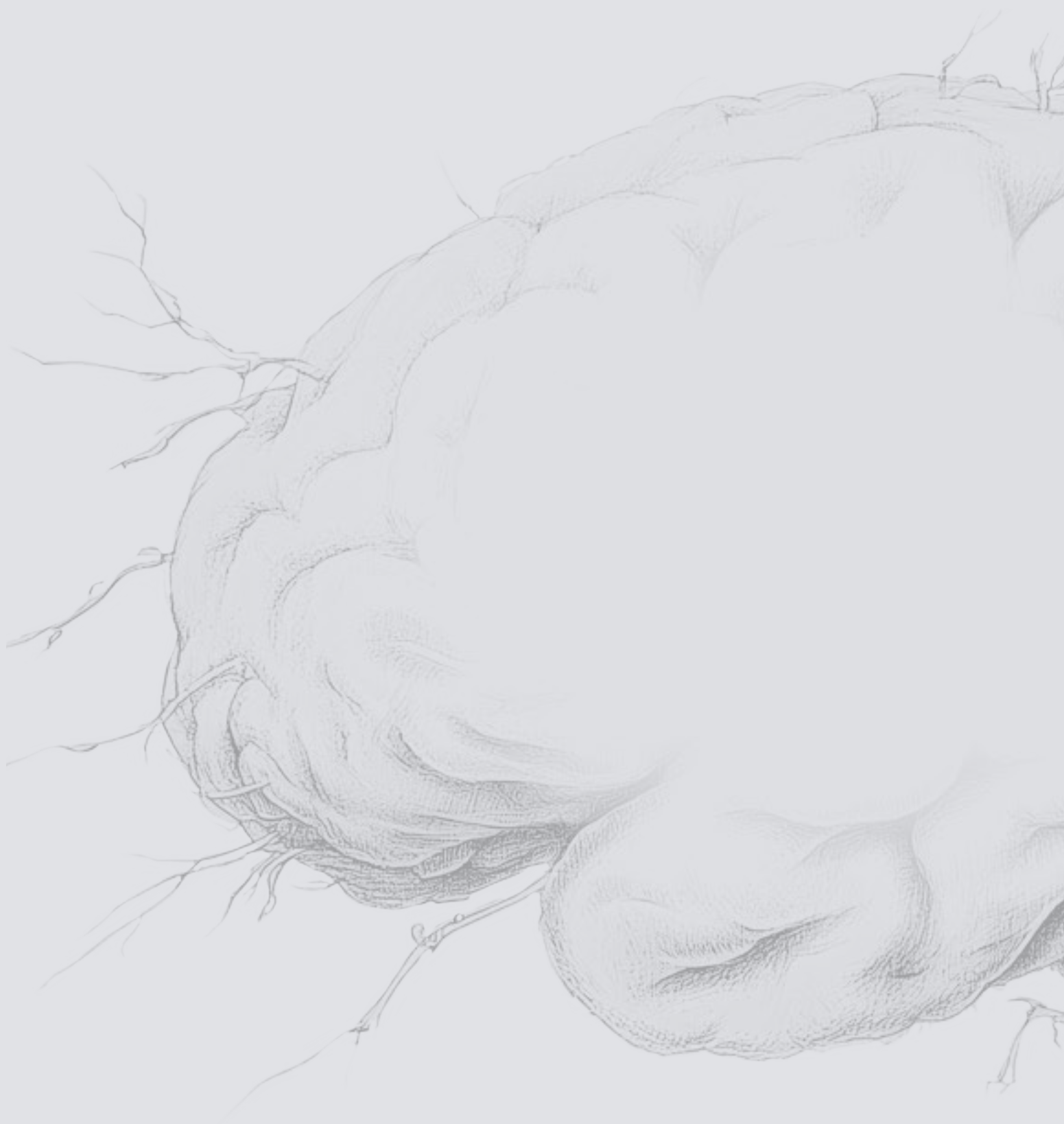




GARRISON INSTITUTE ON AGING

ANNUAL REPORT

2024





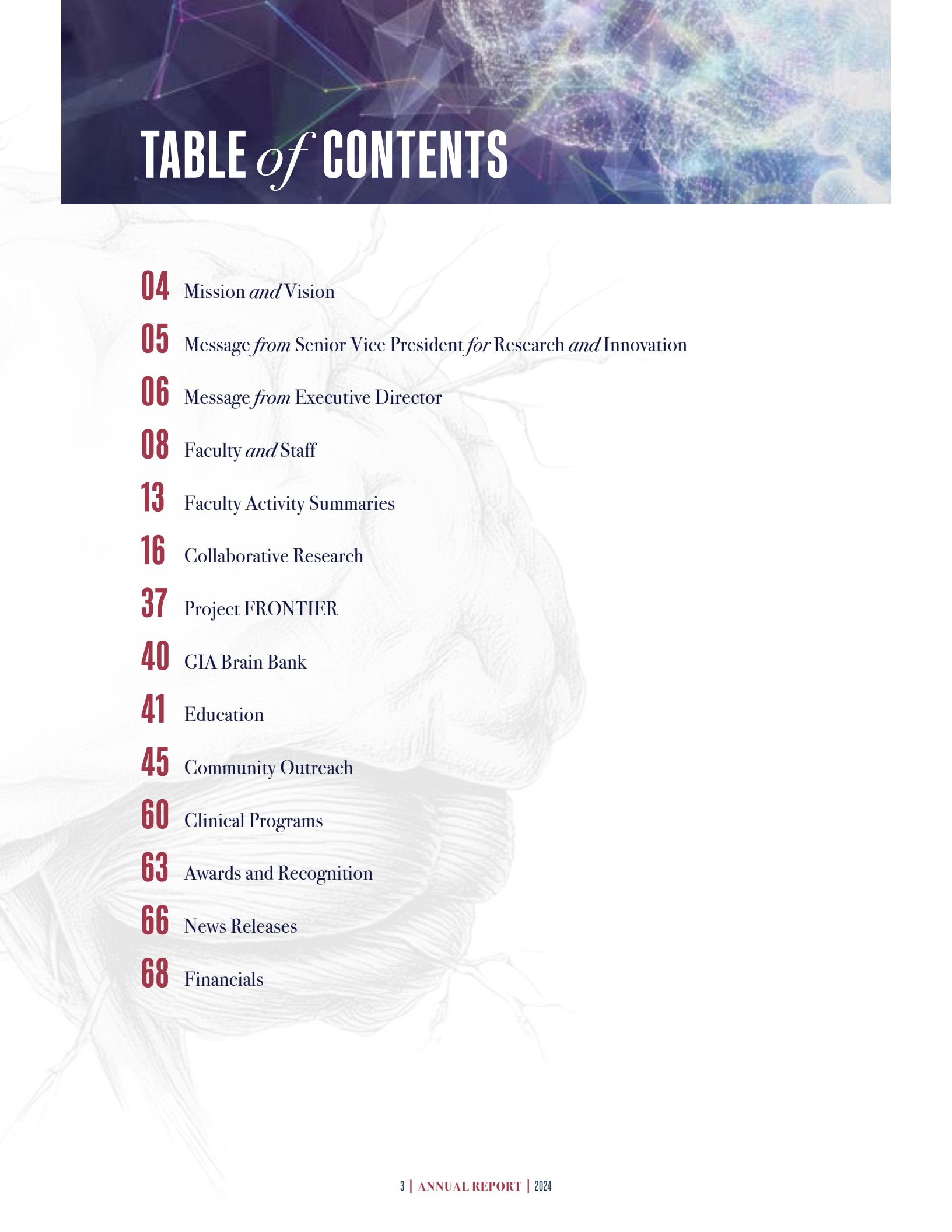


TABLE *of* CONTENTS

04	Mission <i>and</i> Vision
05	Message <i>from</i> Senior Vice President <i>for</i> Research <i>and</i> Innovation
06	Message <i>from</i> Executive Director
08	Faculty <i>and</i> Staff
13	Faculty Activity Summaries
16	Collaborative Research
37	Project FRONTIER
40	GIA Brain Bank
41	Education
45	Community Outreach
60	Clinical Programs
63	Awards and Recognition
66	News Releases
68	Financials



MISSION *and* VISION

OUR MISSION is to promote healthy aging and brain health in the aging population through translational research, innovative educational initiatives, and community engagement programs. The Garrison Institute on Aging (GIA) advances knowledge about aging and diseases such as Alzheimer's, other forms of dementias, mental health conditions, and brain disorders.

Through our educational programs, we inform and empower the community. Our community outreach programs and the newly established comprehensive memory clinic are designed to support patients and their care partners, enhancing quality of life, increasing access to healthcare, and improving psychological and physical health.

OUR VISION is to serve as the central hub within Texas Tech University Health Sciences Center (TTUHSC) for innovative and collaborative efforts in translational research, interdisciplinary education, and community engagement related to healthy aging, brain health, and aging-related conditions such as dementia. The GIA leads in advancing knowledge about disease mechanisms and risk factors to drive improved diagnostic and therapeutic strategies. At the GIA, we are committed to serving the communities of West Texas through our research, education, clinical work, service, and care programs.





MESSAGE *from* SENIOR VICE PRESIDENT FOR RESEARCH *and* INNOVATION

Dear Friends and Colleagues,

At the Texas Tech University Health Sciences Center, our commitment to groundbreaking research is exemplified by the Garrison Institute on Aging. Guided by the institute's mission to promote healthy aging through translational research, innovative educational activities, and community outreach programs, we have seen impressive strides in understanding and addressing the health challenges faced by older adults. Research done by the GIA into neurodegenerative diseases such as Alzheimer's Disease and related brain disorders continues to advance, offering new insights into disease mechanisms and potential therapies.

This year has been a period of remarkable collaboration, discovery, and growth. From expanding research initiatives to fostering cross-disciplinary partnerships, the GIA has made meaningful contributions in aging research that ultimately promise to enhance the quality of life for older populations. Led by Dr. Volker Neugebauer and thanks to the hard work of our researchers, faculty, staff, and generous partners, the Garrison Institute on Aging is uniquely positioned to lead the way in exploring new ways to diagnose, manage, and treat aging-related diseases.

The new Comprehensive Memory Clinic is a big achievement for the GIA that will greatly benefit our community by providing specialized care and support of those experiencing memory challenges. We are excited to see the clinic grow as it supports aging adults and their caregivers with expert care and personalized treatment plans that are not widely available in our area. Additionally, the GIA helped develop a tremendous proposal to the NIH which established the framework that is continuing to be carried out to achieve the goal of establishing an Alzheimer's Disease Research Center (ADRC).

As we look forward to another year of discovery and impact, we remain dedicated to advancing research that improves brain health and promotes healthy aging for all individuals, particularly those in our West Texas communities. Together, we are making tangible progress toward a future where individuals thrive well into their later years.

Sincerely,

Lance R. McMahon, Ph.D.

Senior Vice President of Research and Innovation

Texas Tech University Health Sciences Center

MESSAGE *from* EXECUTIVE DIRECTOR



Volker Neugebauer
MD, Ph.D.

The GIA was established in 1999 by the Board of Regents as the Institute for Healthy Aging, and became the Garrison Institute on Aging (GIA) in 2005 thanks to a most generous donation by the Garrison family. The mission and goals of the GIA are to improve the quality of life of the aging population in West Texas through innovative and collaborative translational research, education, community outreach, service and care programs, in line with the vision of TTUHSC to transform health care through innovation and collaboration. The GIA strives to play an inclusive role in initiatives on aging, aging-related disorders, and brain health across TTUHSC and beyond.

The GIA houses **research facilities** for preclinical experiments as well as biobanks for human brain tissues, bodily fluids, and isolated DNA samples to study mechanisms, risk factors, and novel targets for neurodegenerative brain and other aging-related diseases. Current research is focused on dysfunction of neural signaling in the brain as an early-stage mechanisms of AD pathology (Dr. Neugebauer), mitochondrial dysfunction in AD (Dr. Manczak), the protective role and mechanisms of retinoic acid signaling and impact of vitamin D depletion in AD pathogenesis (Dr. Lawrence), and neuroprotection and repair of the damaged brain in the context of AD and ischemic stroke (Dr. Wang).

Our research program also includes translational research and studies in humans. The GIA **Brain Bank** provides a unique opportunity for translational research, in addition to serving the families of patients with AD and other forms of dementias through free brain autopsies for a definitive diagnosis. Brain tissues are available for the molecular analysis of mechanisms and targets to validate and guide preclinical lab research. Protocols for obtaining, preserving, and analyzing brain tissues are continuously updated. The development of a searchable data base with clinical information about the patients is underway. GIA-based **Project FRONTIER** (Facing Rural Obstacles to Healthcare Now Through Intervention, Education & Research) is a laboratory and community based longitudinal study that collects epidemiological, neurological, and

biological data on cognitive health and aging in a multiethnic adult group of volunteers from rural communities of West Texas to investigate the prevalence and risk factors of dementia among rural residents. It should be noted that Project FRONTIER data also provide opportunities for trainee and faculty research projects and grant applications. A successful search led to the recruitment of a new epidemiology faculty member, who will assume responsibilities as Principal Investigator for Project FRONTIER, contributing essential expertise to the program. GIA member Dr. Boris Decourt runs two NIH-funded **clinical trials** for immunomodulatory drugs in AD, and we are exploring ways to offer the recently FDA-approved anti-amyloid monoclonal antibodies for AD at TTUHSC. Dr. Singer is leading an NIH-funded clinical trial that examines an adapted clinical intervention, dialectical behavior therapy, to reduce suicide ideation in care partners of persons with AD/ABD.

Our **Community Outreach and Education** division serves our local communities by informing them about aging-related diseases such as Alzheimer's disease (AD) and other chronic diseases, and by assisting them through service and care programs. These include the Healthy Aging Lecture Series (monthly), Translational Neuroscience and Pharmacology Lecture Series (monthly), Dementia Live Training for caregivers (monthly), Care Partner Academy (monthly), Caregiver Stress-Busting Dementia Program, Dementia Friendly Lubbock (part of Dementia Friendly America) and Healthy Lubbock Initiative (with Mayor's Fitness Council), Diabetes Self-Management Program (endorsed by the CDC), RSVP (Retired and Senior Volunteer Program, which was established in 1979 under the umbrella of the Corporation for National and Community Service CNCS, now funded as AmeriCorps Seniors Retired and Senior Volunteer Program), mental health services (TX CARES and CREATIVE MINDS, Dr. Singer), and our new Comprehensive Memory Clinic directed by Dr. Singer in collaboration with Drs. Ayers (Psychiatry) and Bertelson (Neurology).

The GIA is making a significant difference in the quality of life of the aging population in our rural and urban communities through new innovative and collaborative programs that are designed to advance knowledge and provide mental health service and comprehensive care for patients with dementia and their care partners in our communities. The GIA team is immensely grateful for the support of our colleagues and collaborators, the Office of Institutional Advancement, the Office of Research and Innovation headed by SVPRI Dr. Lance McMahon, Provost Dr. Darren D'Agostino, and President Dr. Lori Rice-Spearman, and especially the Garrison Family.

FACULTY *and* STAFF

RESEARCH *division*



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Linda Yin, MS
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COMMUNITY OUTREACH *and* EDUCATION DIVISION



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Professor, Cell Biology & Biochemistry, TTUHSC School of Medicine



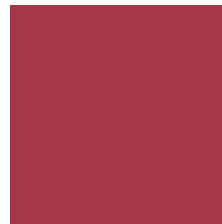
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FACULTY *and* STAFF



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CLINICAL, EDUCATIONAL, *and* PROJECT FRONTIER COLLABORATORS



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Duke Appiah, Ph.D.

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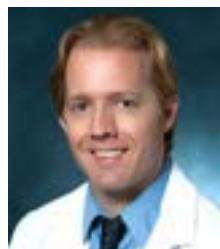
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FACULTY *and* STAFF



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University Distinguished Professor, Pharmacology & Neuroscience, TTUHSC School of Medicine; Associate Vice President for Research & Senior Associate Dean, TTUHSC

EXTERNAL *collaborators*



Kevin F. Bienick, Ph.D.

Assistant Professor & Brain Bank Director, Glenn Biggs Institute for Alzheimer's & Neurodegenerative Diseases, UT Health Science Center at San Antonio, TX



Gladys Maestre, MD, Ph.D.

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Sudha Seshadri, MD

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FACULTY ACTIVITY SUMMARIES

Advancing Science, Care, and Community Engagement

CHEN BRAIN BANK LAB

Dr. Chen conducted experiments to investigate the roles of a secreted synaptic organizer in the Alzheimer's disease (AD) pathology. We performed Western blot experiments using postmortem brains of patients with Alzheimer's disease (AD) from our brain bank and brain tissues isolated from a mouse model of AD (J20). Data showed decreased expression of the synaptic organizer and interacting partners in hippocampus samples from AD patients as well as in J20 mice. Furthermore, the expression of an autophagy-related protein beclin-1 and a critical synaptic modulator (BDNF) were found to be decreased in AD, suggesting that impaired transsynaptic signaling may be involved in AD pathology through the modulation of the autophagy pathway and synaptic plasticity modulators. A comprehensive analysis of molecular targets in this signaling pathway and their interactions is currently continuing in post-mortem brain tissues from AD patients and brain tissues from a preclinical AD model.

DECOURT LAB

In 2024, the laboratory of Dr. Decourt focused on two main projects. Firstly, Dr. Decourt led a multidisciplinary team of scientists from several Departments at TTU and TTUHSC to prepare and submit a large grant application to the National Institute on Aging for an Alzheimer's Disease Research Center. This project aims at better understanding the risk factors and disease progression of brain disorders in rural patients, particularly in patients at risk of or suffering dementia. Although the grant was not funded, Dr. Decourt is developing the project further to strengthen future grant applications around the same theme of research. Secondly, Dr. Decourt has trained several staff members and students with the conduction of lab experiments aimed at testing FDA-approved drugs on cell cultures to assess whether these drugs have potential to slow down the progression of Alzheimer's pathology. The drugs showing promise will be further tested in transgenic mouse models of Alzheimer's to determine whether they can be later tested in clinical trials. In addition, Dr. Decourt has published seven scientific articles and book reviews, gave three invited lectures, and presented four posters at scientific meetings. In second half of 2024, Dr. Decourt also assisted the with the interview of student candidates who applied to the TTUHSC School of Medicine. In 2025, Dr. Decourt will continue his academic missions and help develop new services at TTUHSC to promote scientific research and enhance the clinical care of patients suffering dementia.



LAWRENCE LAB

Dr. Lawrence's research interests are in nutrigenomics and effects of diet on healthy aging, cellular and synaptic physiology of Alzheimer's disease, role of excitation/inhibition balance in disease states, computational neuroscience, neuromodulation, and neuroinflammation. Ongoing projects include the role of disruption of vitamin A homeostasis in Alzheimer's disease (AD) pathogenesis and progression, underlying mechanisms, and a rescue strategy that involves mitigating epigenetic dysregulation of transcription of vitamin A-sensitive genes important for brain functions such as hippocampal learning and memory. Another line of research explores the role of vitamin D deficiency associated with aging as a risk factor for various comorbid conditions and AD.

NEUGEBAUER LAB

Dr. Neugebauer's work is about brain health and neuroplasticity in chronic diseases such as pain and Alzheimer's disease. One line of research explores neural network dysfunction in Alzheimer's disease (AD). Data from animal and human brain tissues showed that a synaptic organizing molecule is downregulated in AD and this deficit is associated with impaired neuroplasticity and autophagy, both important processes for brain health. A rescue strategy using stereotaxic injections of the downregulated molecule into the rodent brain restored neuroplasticity and cognitive behaviors. Other preclinical research on chronic pain mechanisms in the brain found neuronal hyperactivity induced by abnormal synaptic plasticity but maintained through different mechanisms that involve epigenetic dysregulation and neuroimmune signaling. These processes are also important for brain dysfunction in neurodegenerative diseases such as AD. Another set of data showed that neuronal hyperactivity in the brain in pain can be modulated by certain types of glutamate and opioid receptors and by normalizing the microbiome and gut function by natural products such as ginger, suggesting an important role for the gut-brain axis. Ongoing studies test the effects of ginger on pain and brain and gut function in humans. Collaborative epidemiological studies identified associations between vitamin D deficiency and depression in the older rural population, and association of ethnicity and neurocognitive functioning with lower scores in Hispanic rural aging adults irrespective of marital status, depression or anxiety. A new program provides innovative mental health services, a recreational intervention, and imaging-based biomarker screening for AD and AD related dementia (ADRD) patients and caregivers. Neuroimaging was also used to assess the neurobiological process and role of the reward system in predeath grief and different interventions in persons with AD/ADRC and their caregivers. Finally, the creation of a new memory clinic under the directorship of Dr. Singer, a clinical psychologist, and in collaboration with Dr. Ayers, geriatric psychiatrist, and Dr. Bertelson, behavioral neurologist, provides comprehensive care and support for patients with dementia and their caregivers.

SINGER LAB

Dr. Singer has several research studies that include clinical trials, dyadic interventions, fMRI studies. These studies aim

to identifying gaps in knowledge related to healthcare, and studies in rural West Texas. More specifically, Drs. Jonathan Singer (TTUHSC Pharmacology and Neuroscience, GIA, and TTU Psychology) and Volker Neugebauer (TTUHSC Pharmacology and Neuroscience and GIA) have been enrolling family caregivers of persons with dementia in a randomized control trial (TX CARES) examining the effects of mindfulness based cognitive therapy and behavioral activation both in person and over telehealth for rural residing resides. Drs. Singer and Neugebauer also have a clinical trial (CREATIVE MINDS) that examines the dyadic effects of a recreational intervention on persons with dementia and respite (3 hours) for their family caregivers. Headed by Drs. Singer and Neugebauer is three fMRI studies that investigate pre-death grief in family members of persons with dementia, advanced cancer patients, and controls (i.e., persons who are not current caregivers). This study aims to examine the brain's response to high pre-death grief. Dr. Singer's lab has also been trying to evaluate knowledge around advanced care planning in rural residing residents in order to identify intervention targets. Dr. Singer is also leading an NIA funded clinical trial that examines the effect of an adapted intervention (i.e., Dialectical Behavioral Therapy) on suicide ideation in care partners of persons with dementia. Lastly, Using the Project FRONTIER database, Dr. Singer and Neugebauer have been writing up multiple manuscripts and presentations that have been presented at conferences.

WANG LAB

Over the past year, Dr. Hongmin Wang's team continued setting up their specialized research space, recruiting additional lab members, and working on two NIH-funded research projects. His research projects focus on (1) studying the pathogenesis of Alzheimer's disease (AD) with an emphasis on proteostasis in modulating AD pathologies and cognitive functions, and (2) understanding FOXO proteins in regulating ischemic stroke-induced brain injury. Dr. Wang and his team mentored one undergraduate student and four PhD students (including three rotation students) within the past year. In addition, Dr. Wang served on a grant review panel for the NIH/NIA three times last year.





COLLABORATIVE RESEARCH

Facilities, Projects, Scholarly Activities and Research Highlights

BASIC RESEARCH FACILITIES *to* **ENHANCE RESEARCH** *and* **COLLABORATIONS**

The GIA laboratories include a molecular facility to study molecular mechanisms of brain changes in AD and aging conditions, an electrophysiology facility for the analysis of neural networks in ex-vivo brain tissues, and a rodent behavioral facility for the comprehensive study of cognitive, affective, sensory and motor aspects of behavior in AD and aging conditions.

- **Rodent behavioral facility** is managed by Linda Yin, MS, and has equipment for motor deficit screening, exploratory and anxiety-related behavior testing, and behavioral flexibility and other cognitive assessments (learning and memory). Most of our systems are Noldus based, and, where relevant, infrared backlit, employing an automated means or precise and accurate data collection. Standard operating protocols and training for use of equipment are available.
- **Molecular and biomarker laboratory** is managed by Maria Manczak, Ph.D., and Boris Decourt, Ph.D. The equipment is designed for analyzing DNA and RNA, studying proteins, conducting immunohistochemistry, and performing cell culture. This includes a recently acquired fluorescent microscope with both upright and inverted capabilities (ECHO/Revolve Microscopy System) and a Real-Time PCR System (Applied Biosystems QuantStudio 7 Pro).
- **Electrophysiology laboratory** is managed by J. Josh Lawrence, Ph.D., and has equipment for brain slice physiology, including a Luigs and Neumann Infrapatch electrophysiology rig and a Scientifica electrophysiology rig. Both are equipped with Zeiss Axio Examiner upright microscopes and with components to integrate recording from fluorescently dyed neurons and optogenetic stimulation. Additional equipment is used for brain dissection, preparation of brain slices, and manufacturing recording electrodes.
- **Common laboratory** areas include a cell culture facility and an interventional room for stereotaxic and other surgeries on laboratory animals.

COLLABORATIVE RESEARCH PROJECTS *on* AGING, ALZHEIMER'S DISEASE *and* OTHER NEURODEGENERATIVE DISEASES, *and* BRAIN DISORDERS

The GIA collaborates with basic science and clinical faculty from TTUHSC Cell Biology and Biochemistry, Family Medicine, Medical Education, Neurology, Ophthalmology, Pathology, Pediatrics, Pharmacology and Neuroscience, and Psychiatry SOM departments, as well as other colleagues from SHP, SON, SOP, SPPH, CRI, UMC, and several TTU Departments interested in innovative clinically-relevant research projects.

• PRECLINICAL STUDIES

• Preclinical Research - Funded Projects

1. The hippocampal dentate gyrus in aging and Alzheimer's disease: boosting transcription of retinoic acid-sensitive genes through vitamin A supplementation and HDAC inhibition. NIH/NIA R01 AG073826 grant: J. Josh Lawrence, SOM, GIA, GSBS (PI), Maria Manczak, GIA (Co-I), Igor Ponomarev, SOM, GSBS (Co-I), Ranadip Pal, Electrical & Computer Engineering, TTU (Co-I), Andrew Shin, Nutritional Sciences and Obesity Research Institute, TTU (Co-I).
2. Transcriptional Dysfunction in Dentate Gyrus Cell Types: Roles of Retinoic Acid Responsive Genes in Protection Against Alzheimer's Disease Pathogenesis, NIH/NIA R01 AG071859 grant: J. Josh Lawrence, SOM, GIA, GSBS (PI), Maria Manczak, GIA (Co-I), Igor Ponomarev, SOM, GSBS (Co-I), Jeremy Bailoo, SOM, TTUHSC (Co-I).
3. Priming the proteasome to protect against aging and Alzheimer's disease, NIH/NIA RF1 AG072510 grant: Hongmin Wang, SOM, GIA, GSBS (PI).
4. FOXOs in ischemic stroke. NIH/NINDS R01 NS124846 grant: Hongmin Wang, SOM, GIA, GSBS (PI).
5. Brain Circuits of Migraine Pain. NIH/NINDS R01 NS129552 grant. Volker Neugebauer, GIA, SOM, GSBS (MPI), Guangchen Ji, SOM (Co-I), Frank Porreca, University of Arizona (PI), Edita Navratilova, University of Arizona (MPI).
6. Amygdala Pain Mechanisms. NIH/NINDS R01 NS038261 grant. Volker Neugebauer, GIA, SOM, GSBS (MPI), Igor Ponomarev, SOM, GSBS (MPI), Guangchen Ji, SOM (Co-I).
7. A prolactin-mediated neuroendocrine link between stress-induced latent sensitization and female-selective pain. NIH/NINDS R01 NS120395 grant. Volker Neugebauer, GIA, SOM, GSBS (MPI), Guangchen Ji, SOM (Co-I), Vadim Yakhnitsa, SOM (key personnel), Frank Porreca, University of Arizona (PI), Edita Navratilova, University of Arizona (MPI).
8. Trans-synaptic signaling complex in amygdala pain mechanisms. NIH/NINDS R01 NS118731 grant. Volker Neugebauer, GIA, SOM, GSBS (MPI), Guangchen Ji, SOM (Co-I), Shashank Dravid, Texas A&M University (PI).
9. Pronociceptive and antinociceptive opioid mechanisms in the central nucleus of the amygdala. NIH/NINDS R01 NS109255 grant. Volker Neugebauer, GIA, SOM, GSBS (Co-I), Guangchen Ji, SOM (MPI), Frank

Porreca, University of Arizona (PI), Edita Navratilova, University of Arizona (MPI).

10. The Neuroimmune Model of Excessive Alcohol Consumption: Transition to Alcohol Use Disorder. NIH/NIAAA R01 AA027096 grant. Volker Neugebauer, GIA, SOM, GSBS (Co-I), Igor Ponomarev, SOM, GSBS (PI).
11. Stress-Induced Descending Facilitation from Amygdala Kappa Opioid Receptors in Functional Pain. NIH/NINDS R01 NS106902 grant. Volker Neugebauer, GIA, SOM, GSBS (MPI), Frank Porreca, University of Arizona (PI).
12. Ginger root extract for neuropathic pain. USDA/NIFA 2021-67017-34026 grant. Chwan-Li (Leslie) Shen, SOM, Volker Neugebauer, SOM, GIA, GSBS (MPI).
13. Ginger extract in anxio-depressive disorders: gut-brain-axis. Davis Foundation. Chwan-Li (Leslie) Shen, SOM, Volker Neugebauer, GIA, SOM, GSBS (MPI).

- Preclinical Research - Funded Projects

1. Functional role of the mammalian cleavage factor I (CFIm) in Alzheimer's disease. Owens Foundation grant application. Petar Grozdanov, SOM (PI), Boris Decourt, GIA, SOM, GSBS (Co-I), Igor Ponomarev, SOM, GSBS (Co-I).
2. Dual actions of receptor-specific retinoid ligands in suppressing inflammatory and amyloidogenic pathologies in Alzheimer's Disease. NIH/NIA R01 grant application. Josh Lawrence, GIA, SOM, GSBS (MPI), Boris Decourt, GIA, SOM, GSBS (Co-I), Igor Ponomarev, SOM, GSBS (Co-I), Chhanda Bose, SOM, GSBS (Co-I), Bhaskar Das, University of Buffalo (PI).
3. Exploring Dnase 1L3 as a therapeutic for Alzheimer's Disease and Related Dementias. One Health Innovation Seed Funding Program. Peter Keyel, TTU Biology (PI), Bryan Sutton, SOM, GSBS (MPI), Josh Lawrence, GIA, SOM, GSBS (Co-I).
4. Post-translationally Modified Proteins from the Extracellular Vesicles as a Potential Biomarker for Alzheimer's Disease. Owens Foundation grant application. Hongmin Wang, GIA, SOM, GSBS (PI).
5. Trans-synaptic signal complex in Alzheimer's disease. NIH/NIA R01 application. Volker Neugebauer, GIA, SOM, GSBS (PI), Maria Manczak, GIA, SOM (MPI), J. Josh Lawrence, GIA, SOM, GSBS (MPI).
6. Hypothalamic paraventricular nucleus kappa opioid receptor neurons in OUD-related sleep disruption and negative affect. NIH/NINDS R01 application. Volker Neugebauer, GIA, SOM, GSBS (MPI), Guangchen Ji, SOM (Co-I), Frank Porreca, University of Arizona (PI), Edita Navratilova, University of Arizona (MPI).
7. Validation of orexin 2 receptors as a therapeutic target for pain in males. NIH/NINDS R01 application. Volker Neugebauer, GIA, SOM, GSBS (MPI), Guangchen Ji, SOM (Co-I), Frank Porreca, University of Arizona (PI), Edita Navratilova, University of Arizona (MPI).
8. Goji berry for chronic fatigue syndrome. USDA/NIFA. Chwan-Li (Leslie) Shen, SOM, Volker Neugebauer, SOM, GIA, GSBS (MPI).
9. Selective targeting KOR using diketopiperazine analogs for chronic pain management. NIH STTR grant application. Nadezhda German, SOP (PI), Volker Neugebauer, GIA, SOM, GSBS (MPI), Guangchen Ji, SOM (Co-I).

10. Developing novel class of polypharmacology agents for the treatment of multiple sclerosis. DoD. Nadezhda German, SOP (PI), [Volker Neugebauer](#), GIA, SOM, GSBS (MPI), Guangchen Ji, SOM (Co-I).
11. Developing novel class of dopamine transporter inhibitor for the treatment of Alzheimer's disease. Nadezhda German, SOP, [Volker Neugebauer](#), GIA, SOM, GSBS, Linda Yin, GIA.
12. Development of new ligands for the treatment of pain. NIH R01 grant application. Nadezhda German, SOP (PI), [Volker Neugebauer](#), GIA, SOM, GSBS (MPI), Tom Abbruscato, SOP (MPI), Guangchen Ji, SOM (Co-I), Christopher McCurdy, University of Florida (Co-I).
13. Alternative polyadenylation regulates neuronal mRNA localization in epilepsy. CH Foundation. Petar Grozdanov, SOM, GSBS (PI), Vadim Yakhnitsa, SOM (Co-I), [Volker Neugebauer](#), GIA, SOM, GSBS (Co-I).
14. Functional role of alternative polyadenylation in astrocytes in Alzheimer's disease. BrightFocus Foundation grant application. Petar Grozdanov, SOM, GSBS (PI), [Boris Decourt](#), GIA, SOM, GSBS (Co-I), Igor Ponomarev, SOM, GSBS (Co-I).

• HUMAN STUDIES

• Human Studies - Funded Projects

1. Repurposing Siponimod for Alzheimer's Disease. NIH/NIA R01 AG073212 grant. [Boris Decourt](#), GIA, SOM, GSBS (MPI), Marwan Sabbagh, St. Joseph's Hospital and Medical Center, Phoenix (PI).
2. MCLENA-1: A Clinical Trial for the Assessment of Lenalidomide in Amnesic MCI Patients. NIH/NIA R01 AG059008 grant. [Boris Decourt](#), GIA, SOM, GSBS (MPI), Marwan Sabbagh, St. Joseph's Hospital and Medical Center, Phoenix (PI).
3. Reducing suicide risk among aging caregivers of persons with AD/ADRD: Adapting, implementing, and evaluating Dialectical Behavior Therapy skills training interventions. NIH/NIA R15 AG080446 grant. [Jonathan Singer](#), TTU Psychology, SOM, GIA (PI), Sean Mitchell, TTU Psychology (MPI), Andrew Littlefield, TTU Psychology (Co-I), Jason Van Allen, TTU Psychology (Co-I), Breanna Harris, TTU Biology (Co-I), [Volker Neugebauer](#), GIA, SOM, GSBS (Collaborator), GIA (recruitment site).
4. Behavioral and Psychosocial Effects on Study Outcomes in End-Stage Cancer Treatment (BEST End-Stage Cancer Study). National Cancer Institute – R35. Holly Prigerson, Weill Cornell Medical College (PI), [Jonathan Singer](#), TTU Psychology, GIA, SOM (Site PI).
5. Understanding Driving Risks in Rural Older Adults with MCI: Evaluating the Impacts of Cognitive Impairments on Driver Behavior and Insights for Early Detection. Exploratory Cross-Disciplinary Faculty Research Excellence Awards, TTU. Nade Liang, TTU (PI), [Jonathan Singer](#), TTU Psychology, SOM, GIA (MPI), [Volker Neugebauer](#), GIA, SOM, GSBS (Co-I).
6. Smartphone-based Cognitive Impairment Assessment Tool: A Pilot Study of Feasibility and Validation. Alzheimer's Research Seed Grant Texas Tech University College Health and Human Sciences. Woosang, Hwang, TTU (PI), [Jonathan Singer](#), TTU Psychology, GIA, SOM (MPI), [Volker Neugebauer](#), GIA, SOM, GSBS (MPI), [Boris Decourt](#), GIA, SOM, GSBS (MPI).
7. Piloting Stress Control as a Universal, Community-based Suicide Prevention Strategy in the U.S. American

Foundation for Suicide Prevention grant. Sean Mitchell, Psychological Sciences, TTU (PI), [Jonathan Singer](#), Psychological Sciences, TTU, SOM, GIA (Co-I).

8. Innovative mental health services, recreational intervention, and imaging-based biomarker screening for AD/ABRD patients and caregivers. Garrison Family Foundation grant. [Volker Neugebauer](#), GIA, SOM, GSBS (PI), [Jonathan Singer](#), TTU Psychology, GIA, SOM (MPI), [Boris Decourt](#), GIA, SOM, GSBS (MPI).
 9. fMRI studies of the reward system in person with AD/ABRD and their caregivers. CTNT-OR- GIA JSBDVN Seed Fund Program grant: Jonathan Singer, TTU Psychology, GIA, SOM (MPI), [Volker Neugebauer](#), GIA, SOM, GSBS (MPI).
 10. Examining Effects of Respite and Individual Clinical Interventions on Biopsychosocial Outcomes in Informal Caregivers of Dementia Patients. Garrison Family Foundation. [Volker Neugebauer](#), GIA, SOM, GSBS (PI), [Jonathan Singer](#), GIA, SOM, TTU (MPI).
 11. Improving Dementia Care for West Texas Residents Through a Comprehensive Memory Clinic. Garrison Family Foundation grant. [Volker Neugebauer](#), GIA, SOM, GSBS (PI), [Jonathan Singer](#), GIA, SOM (MPI).
 12. Ginger and the microbiota-gut-brain connection in sciatic pain individuals. USDA/NIFA 2024-67018-42457. Chwan-Li (Leslie) Shen, SOM (PI), [Volker Neugebauer](#), SOM, GIA, GSBS (MPI).
 13. Curmumin and Retinal Amyloid-beta Pilot Study. Sabinsa Corporation, NJ. Chwan-Li (Leslie) Shen, SOM (PI), [Jonathan Singer](#), GIA, SOM, TTU (Co-I), [Volker Neugebauer](#), GIA, SOM, GSBS (Co-I).
- Human Studies – Projects under development
 1. The Rural West Texas Alzheimer’s Disease Research Center. NIH/NIA P30 application. [Boris Decourt](#), GIA, SOM, GSBS (PI), Gayle Ayers, SOM (MPI), [Volker Neugebauer](#), GIA, SOM, GSBS (MPI), Travis Thompson, TTU (Sub-PI), Bryan Norman, TTU (Sub-PI), Gayle Ayers, SOM (Core-PI), Keith Bishop, SOM (Core-PI), Mike Blanton, SOM, GSBS (Core-MPI), Dirk Keene, University of Washington (Core-MPI), [J. Josh Lawrence](#) (Core-PI), [Jonathan Singer](#), GIA, SOM (Core-PI), Stephanie Stroeve, SOM (Core-PI), Hongmin Wang, GIA, SOM, GSBS (Core-MPI), Duke Appiah, SPPH (Co-I), Alyce Ashcraft, SON (Co-I), John Bertelson, SOM and UT Austin (Co-I), John Culberson, SOM (Co-I), John Griswold, SOM, CRI (Co-I), Petar Grozdanov, SOM, GSBS (Co-I), Josee Guindon, SOM, GSBS (Co-I), [Maria Manczak](#), GIA, SOM (Co-I), Igor Ponomarev, SOM, GSBS (Co-I), Phillip Sizer, SHP (Co-I).
 2. Evaluating Changes in Biomarkers of Aging in Cerebrospinal Fluid Among Children Receiving Chemotherapy for Acute Lymphoblastic Leukemia. CPRIT or NIH grant application. Mohamad Al-Rahawan, SOM, (PI), [Volker Neugebauer](#), GIA, SOM, GSBS (MPI), [Boris Decourt](#), GIA, SOM, GSBS (MPI).
 3. Leqembi treatment at TTUHSC. [Boris Decourt](#), GIA, SOM, GSBS (PI), Mirla Avila, SOM (Co-I), Gayle Ayers, SOM (Co-I), John Bertelson, SOM and UT Austin (Co-I), [Volker Neugebauer](#), GIA, SOM, GSBS (Co-I), [Jonathan Singer](#), GIA, SOM (Co-I).
 4. Establishing novel infrastructure to assess dementia risk following cancer hormone therapy. CPRIT or NIH grant application. [Boris Decourt](#), GIA, SOM, GSBS (PI), Thomas Hutson, SOM (MPI).
 5. Polysome profiling during aging and in AD subjects. [Boris Decourt](#), GIA, SOM, GSBS (PI), Zemfira

- Karamysheva, SOM (MPI).
6. Peripheral vision deficits as a biomarker for Alzheimer's disease. One Health Innovation Seed Funding Program. Miranda Scolari, TTU Psychology (PI), [Josh Lawrence](#), GIA, SOM, GSBS (MPI).
 7. Classifying Psychogenic Non-Epileptic and Epileptic Seizures from EEG Data. Exploratory Cross-Disciplinary Faculty Research Excellence Awards, TTU. Emily Pereira, TTU Electrical & Computer Engineering (PI), Jannatul Ferdous, SOM (MPI), Chanaka Kahathuduwa, SOM (MPI), [Josh Lawrence](#), GIA, SOM, GSBS (MPI).
 8. Otoferlin modeling at molecular, synaptic, and systems levels. One Health Innovation Seed Funding Program. Bryan Sutton, SOM, GSBS (MPI), Bijoy Ghosh, TTU Mathematic and Statistics (MPI), [Josh Lawrence](#), GIA, SOM, GSBS (Co-I), Jeremy Donai, SHP (Co-I).
 9. KCNIPI at the Convergence of Alzheimer's Disease and Nutritional Deficiencies. One Health Innovation Seed Funding Program. [Josh Lawrence](#), GIA, SOM, GSBS (PI), Ranadip Pal, TTU Electrical & Computer Engineering (MPI), Chiquito Crasto, TTU Biotechnology and Genomics (Co-I), Andrew Shin, TTU Nutritional Sciences and Obesity Research Institute (Co-I), Chhanda Bose, SOM, GSBS (Co-I), Igor Ponomarev, SOM, GSBS (Co-I), Bryan Sutton, SOM, GSBS (Co-I).
 10. Vitamin D in Decelerating Cognitive Decline and Epigenetic Age. Texas Alzheimer's Research & Care Consortium (TARCC) application: [Josh Lawrence](#), GIA, SOM, GSBS (PI), Kevin Pruitt, SOM, GSBS (Consultant), Duke Appiah, Public Health (Co-I), Chhanda Bose, SOM, GSBS (MPI), [Boris Decourt](#), SOM, GIA, GSBS (Co-I), John Bertelson, SOM (Consultant).
 11. Obliterate hot flashes at home. ARPA-H Sprint for Women's Health. Deborah J. Clegg, TTUHSC-EP (PI), Irene La-Beck, SOP, GSBS (Co-I), [Volker Neugebauer](#), GIA, SOM, GSBS (Co-I), Aloc Dwivedi, TTUHSC-EP (Co-I), Pallavi Dubey, TTUHSC-EP (Co-I), Connie Tyne, Laura Bush Institute (Consultant), Noel Bairey Merz, Smidt Heart Institute, Cedars-Sinai Medical Center (Consultant).
 12. Assessing MBCT and a neurocognitive battery over telehealth in a rural Hispanic population with family caregivers of persons with AD/ADRD. NIH/NIA R21 grant application. [Jonathan Singer](#), GIA, SOM, TTU (PI), [Volker Neugebauer](#), GIA, SOM, GSBS (Co-I).
 13. A Dyadic Intervention for Persons with Dementia and Their Caregivers. Alzheimer's Foundation of America grant application. [Volker Neugebauer](#), GIA, SOM, GSBS (PI), [Jonathan Singer](#), GIA, SOM (MPI).
 14. A feasibility and validation study of an app-based cognitive assessment. Alzheimer's Association. [Volker Neugebauer](#), SOM, GIA, GSBS (MPI), [Boris Decourt](#), GIA, SOM, GSBS (MPI), [Jonathan Singer](#), GIA, SOM, TTU (MPI), Woosang Hwang, TTU (PI).
 15. A feasibility and validation study of a mobile-based cognitive assessment tool. NIH/NIA R03 application. [Jonathan Singer](#), GIA, SOM, TTU (Co-I), [Volker Neugebauer](#), SOM, GIA, GSBS (Co-I), [Boris Decourt](#), GIA, SOM, GSBS (Co-I), Woosang Hwang, TTU (PI).
 16. ICARE - Innovative Comprehensive Approach for Rural Elderly. CVS Health. [Jonathan Singer](#), GIA, SOM (PI), [Volker Neugebauer](#), SOM, GIA, GSBS (Co-I), [Boris Decourt](#), GIA, SOM, GSBS (Co-I), Gayle Ayers, SOM (Co-I).

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17. Supporting Bereaved Youth Using Multidimensional Grief Therapy. Texas Child Mental Health Care Consortium. Volker Neugebauer, GIA, SOM, GSBS (PI), Jonathan Singer, GIA, SOM (MPI).
 18. O-GlcNAcylated Prostaglandin-H2 D-isomerase (PTGDS), a potential diagnostic biomarker of Alzheimer's Disease. Welch Foundation application. Volker Neugebauer, SOM, GIA, GSBS (MPI), Boris Decourt, GIA, SOM, GSBS (MPI), Li Li, SOP (PI).
 19. Altered O-GlcNAcylation, a molecular link of metabolic disorder and Alzheimer's Disease. Texas Alzheimer's Research and Care Consortium (TARCC) application. Volker Neugebauer, SOM, GIA, GSBS (Co-I), Boris Decourt, GIA, SOM, GSBS (Co-I), Li Li, SOP (PI).
 20. Identify glycoprotein biomarkers for neurodegenerative diseases. CTSA KL2 Clinical and Translational Research Scholars Program application. Volker Neugebauer, SOM, GIA, GSBS (Mentor), Boris Decourt, GIA, SOM, GSBS (Mentor), Li Li, SOP (PI).
 21. Investigating a Multimodal Therapeutic Recreation for Persons with AD/ADRD. Texas Alzheimer's Research and Care Consortium (TARCC) application. Jonathan Singer, GIA, SOM, TTU (PI), Volker Neugebauer, SOM, GIA, GSBS (MPI), Boris Decourt, GIA, SOM, GSBS (Co-I).
 22. Investigating Changes in Neurocognitive Functioning in Persons with AD/ADRD and Biopsychosocial Factors in Family Caregivers During a Therapeutic Recreation Intervention. NIH/NIA R03 grant application. Jonathan Singer, GIA, SOM, TTU (PI), Volker Neugebauer, SOM, GIA, GSBS (MPI), Boris Decourt, GIA, SOM, GSBS (Co-I).
 23. Identifying Trajectories and Transdiagnostic Factors Linking Alcohol Use to Physical Activity Across Adolescence. NIH-R34 grant: Caroline Cummings, TTU Psychology (PI), Jonathan Singer, TTU Psychology, GIA, SOM (Co-I).
 24. Telehealth intervention for Hispanic family caregivers of persons with AD/ADRD in rural Texas. NIH R21 grant: Jonathan Singer, TTU Psychology, GIA, SOM (PI), Volker Neugebauer, GIA, SOM, GSBS (Co-I).
 25. Supporting Bereaved Youth Using Multidimensional Grief Therapy. Texas Child Mental Health Care Consortium. Volker Neugebauer, GIA, SOM, GSBS (PI), Jonathan Singer, GIA, SOM (MPI).
 26. Improving early detection of dementia and quality of life in patients and caregivers through innovative brain network modeling and a dyadic intervention. Ted Nash Long Life Foundation. Jonathan Singer, GIA, SOM, TTU (PI), Volker Neugebauer, SOM, GIA, GSBS (Co-I).
 27. Geriatrics Workforce Enhancement Program. DHHS-HRSA. Amy Norbury, SOM (PI), Alyce Ashcraft, SON (MPI), Jonathan Singer, GIA, SOM, TTU (Co-I), Volker Neugebauer, SOM, GIA, GSBS (Co-I), Boris Decourt, GIA, SOM, GSBS (Co-I), John Culbertson, SOM (Co-I), Amie Blaszczyk, SOP (Co-I), Lisa Gittner, SPPH (Co-I), Jeffrey Dennis, SPPH (Co-I), Linda McMurry, SON (Co-I), Nathan Burgess, SHP (Co-I), Nancy Trevino, SOM (Co-I), Trista Askins-Bailey, SOP (Co-I), Michelle Sperbeck, SOP (Co-I), Molly Setliff, SHP (Co-I), Melinda Corwin, SHP (Co-I), Morgan House, BSHM (Co-I), Sharon Hunt, BSHM (Co-I).
 28. Ambient particulate matter and Alzheimer's Disease. NIH R03 grant application. Narges Khanjani, TTUHSC-EP, Subodh Kumar, TTUHSC-EP, Ellen Dudley, TTUHSC-EP, Thomas Gill, UTEP, Gabriel Ibarra-Mejia, UTEP, Baharathi Gadad, TTUHSC-EP, Boris Decourt, GIA, SOM, GSBS, Yongchen Chen,

GIA, SOM, Volker Neugebauer, SOM, GIA, GSBS.

29. Texas Tech Center for Translational Research and Rural Health. NIH RCMI-U54 grant application: Lance McMahon, SVPRI Office of Research (PI), Julie St. John, SPPH (MPI), Naima Moustaid-Moussa, Executive Director, Institute for One Health Innovation, TTU, TTUHSC (MPI), Volker Neugebauer, GIA, SOM, GSBS (Core MPI), Jonathan Singer, GIA, SOM, TTU Psychology (Core MPI), Nadia German, SOP (Core-MPI), Jenny Wilkerson, SOP (Core-MPI), Billy Philips, SOM (Core-MPI), Jeffrey Dennis, SPPH (Core-MPI), Douglas Dendy, SHP (Core-MPI), Heidi Brady, TTU Animal and Food Sciences (Core-MPI), Christine Garner, SOM (Co-I), Stephanie Stroeve, SOM (Co-I), Carlos Alvarez, SOP (Co-I), Duke Appiah, SPPH (Co-I), Dawei Li, SOM, GSBS (Co-I) .

STUDENT RESEARCH OPPORTUNITIES

GIA faculty continue to offer exceptional training and mentorship opportunities for students and early-career researchers pursuing studies in aging-related health conditions, neurodegenerative diseases, and brain health.

Dr. Lawrence mentored a research associate professor, a postdoctoral fellow, two MD/PhD students, two rotating PhD students, a TTU PhD student, three Masters in Biotechnology students, four medical students enrolled in the TTUHSC Distinction in Medical Research Program and the School of Medicine Year 2 Student Research Program, one additional medical student enrolled in the School of Medicine Year 2 Student Research Program, four post baccalaureate students, and seven undergraduate students. Research areas are spread across two preclinical studies, several bioinformatics projects, and Project FRONTIER projects. Students engage in scholarly activity, such as presentations at local, regional, national, and international conferences and are engaged in publishing peer-reviewed manuscripts. Dr. Lawrence also served on 9 dissertation and thesis committees.

Dr. Neugebauer started mentoring a medical student for a research project in the GIA on preclinical studies of neural dysfunction in Alzheimer's disease pathology and supervised two other medical students for the Medical Student Summer Research Program (MSSRP) on neuroimmune signaling the brain, including BDNF expression and astrocyte function. Another MSSRP student was co-mentored with Dr. Singer on a project on functional MRI studies involving family caregivers of persons with dementia. Other mentoring activities included supervising an MD/PhD student for a research rotation in the study of neuroimmune signaling in the brain, a PhD student in the analysis of BDNF signaling in brain plasticity, and three postdoctoral fellows in the study of neuroplasticity in the brain in preclinical disease models. Dr. Neugebauer also mentored 8 junior faculty at TTUHSC and TTU and he served on 6 dissertation committees and the MD/PhD Physician Scientist Program Committee.

Dr. Singer oversaw an extensive cohort of trainees, including five doctoral students, one post baccalaureate students, and ten undergraduate students - two of whom are in the honor's college. These students participated in various research

initiatives and contributed to more than seven publications presented at the TTU Undergraduate Research Conference. Dr. Singer chaired two Honors College thesis projects, guiding both students through successful presentations at the same conference. In a clinical training, Dr. Singer let two practicums where he supervised five clinical psychology students for 20 hours a week, providing instruction in neuropsychological assessments (e.g. RBANS; NEO; CVLT), mindfulness-based cognitive therapy, and behavior activation. He also launched the GDEP practicum, overseeing eight doctoral students in 2024. Additional supervision included four ADHD evaluations. Dr. Singer also served on 22 academic committees: 4 qualifying exam, 5 thesis, 8 comprehensive exam, and 5 dissertation committees.

Dr. Wang mentored PhD student, Abena Dwamena and postdoctoral fellow Anand Chakroborty on preclinical studies examining proteasome dysfunction in Alzheimer's disease pathogenesis. He also guided another postdoctoral fellow in the preclinical research project related to stroke. Additionally, Dr. Wang served as a supervisory committee member of three MD/PhD student dissertation committees.

Together, GIA faculty are dedicated to fostering the next generation of scientist and clinicians in the field of aging and brain health through rigorous research experiences, professional development, and clinical training.



PUBLICATIONS *by* GIA MEMBERS (2024)

1. Abu-Samaha, A., McLean, E., Weller, D., Kelley, J., Schmidt, A.T., Singer, J. (2024) Comparing Public Perceptions of Child and Adult Grief Responses to Familial Incarceration. *Omega*, Jul 21:302228241266278. PMID: 39033515.
2. Adem, M.A., Decourt, B., Sabbagh, M.N. (2024) Pharmacological Approaches Using Diabetic Drugs Repurposed for Alzheimer's Disease. *Biomedicines* 12(1):99. PMID: 38255204; PMCID: PMC10813018.
3. Ankeny, S.E., Bacci, J.R., Decourt, B., Sabbagh, M.N., Mielke, M.M. (2024) Navigating the Landscape of Plasma Biomarkers in Alzheimer's Disease: Focus on Past, Present, and Future Clinical Applications. *Neurol. Ther.* 13(6):1541-1557. PMID: 39244522; PMCID: PMC11541985.
4. Asadi, Y. and Wang, H. (2024) Regulation of mitochondrial function by FOXOs in ischemic stroke and Alzheimer's disease. *Organelle* 1(1):2. PMID: 40255585; PMCID: PMC12007694.
5. Bailoo, J.D., Bergeson, S.E., Ponomarev, I., Willms, J.O., Kisby, B.R., Cornwall, G.A., MacDonald, C.C., Lawrence, J.J., Ganapathy, V., Sivaprakasam, S., Panthagani, P., Trasti, S., Varholick, J.A., Findlater, M., Deonaraine, A. (2024) A bespoke water T-maze apparatus and protocol: an optimized, reliable, and repeatable method for screening learning, memory, and executive functioning in laboratory mice. *Front. Behav. Neurosci.* 18:1492327. PMID: 39720305; PMCID: PMC11666379.
6. Collins, A., Stroeve, S., Baronía, R., Michaela, J., Awal, A., Singer, J., Amor, W., Ibrahim, Y. (2024) The Effects of Positive Psychological Factors on the Mental Wellbeing of Medical Students. *Cureus* 16(5):e60702. PMID: 38899259; PMCID: PMC11186663.
7. Dunning, E., Decourt, B., Zawia, N., Shill, H.A., Sabbagh, M.N. (2024) Pharmacotherapies for the Treatment of Progressive Supranuclear Palsy: A Narrative Review. *Neurol. Ther.* 13(4):975-1013. PMID: 38743312; PMCID: PMC11263316.
8. Dwanena, A., Asadi, Y., Gilstrap, E., Wang, H. (2024) Impaired proteasome induces mitochondrial DNA release to activate the cGAS-STING signaling pathway and cause necroptosis in mouse brain. *bioRxiv* [Preprint]. PMID: 39605734; PMCID: PMC11601397.
9. Fadalla, C., Singer, J., Rerick, P., Elliott, L., McLean, E., Schneider, S., Molinar-Lopez, V., Neugebauer, V. (2024) Neurocognitive Disparities: Investigating ethnicity and mental health in rural aging adults. *Aging*

16:1-18. PMID: 39611836; PMCID: PMC11810062.

10. Huber, C.C. and Wang, H. (2024) Pathogenic and therapeutic role of exosomes in neurodegenerative disorders. *Neural Regen Res* 19(1):75-79. doi: 10.4103/1673-5374.375320. PMID: 37488847
11. Huber, C.C., Callegari, E.A., Paez, M.D., Li, X., and Wang, H. (2024) Impaired 26S proteasome causes learning and memory deficiency and induces neuroinflammation mediated by NF- κ B in mice. *bioRxiv* [Preprint]. PMID: 38405714; PMCID: PMC10888903.
12. Ji, G., Presto, P., Kiritoshi, T., Chen, Y., Navratilova, E., Porreca, F., Neugebauer, V. (2024) Chemogenetic manipulation of amygdala kappa opioid receptor neurons modulates amygdala neuronal activity and neuropathic pain behaviors. *Cells* 13:705 (19 pp). PMID 38667320. PMC11049235.
13. Kiritoshi, T., Yakhnitsa, V., Singh, S., Wilson, T.D., Chaudhry, S., Neugebauer, B., Torres-Rodriguez, J.M., Lin, J.L., Carrasquillo, Y., Neugebauer, V. (2024) Cells and circuits for amygdala neuroplasticity in the transition to chronic pain. *Cell Reports* 43:114669 (28 pp). PMID: 39178115.
14. Livingston, T. N., Cummings, C., & Singer, J. (2024) Social power may be associated with health through positive emotion. *The Journal of General Psychology* 151:314-334. <https://doi.org/10.1080/00221309.2023.2261135>.
15. Majeed, J., Sabbagh, M.N., Kang, M.H., Lawrence, J.J., Pruitt, K., Bacus, S., Reyna, E., Brown, M., Decourt, B. (2023) Cancer drugs with high repositioning potential for Alzheimer's disease. *Expert Opinion on Emerging Drugs* 28(4):311-332. [PMID: 38100555]
16. Malaty, G.R., Decourt, B., Shill, H.A., Sabbagh, M.N. (2024) Biomarker Assessment in Parkinson Disease Dementia and Dementia with Lewy Bodies by the Immunomagnetic Reduction Assay and Clinical Measures. *J Alzheimers Dis Rep.* 8(1):1361-1371. PMID: 39493956; PMCID: PMC11530035.
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18. McLean, E., Livingston, T.N., Morgan, R.D., Rhyne, R., Edwards, P.J., Prigerson, H.G., Singer, J. (2024) Family Members Grieving the Loss of a Person to Incarceration: A Scoping Review. *Clinical Child and Family Psychology Review* 27, 1144 – 1166, <https://doi.org/10.1007/s10567-024-00567-024-00501-7>.

19. McLean, E., Livingston, T.N., Mitchell, S.M., Singer, J. (2024) Perceptions of crime severity and stigma toward family members grieving the loss of a person to incarceration. *Psychology, Crime & Law* 30, 1559 – 1679. <https://doi.org/10.1080/1068316X.2023.2220870>.
20. Navratilova, E., Qu, C., Ji, G., Neugebauer, V., Guerrero, M., Rosen, H., Roberts, E., Porreca, F. (2024) Opposing effects on descending control of nociception by mu and kappa opioid receptors in the anterior cingulate cortex. *Anesthesiology*, 140: 272-283. PMID: 37725756.
21. Neugebauer, V., Kiritoshi, T. (2024) Cortico-limbic plasticity in pain - Hippocampus joins the party. *Pain* 165:963-964. PMID: 37889585. PMC11045655.
22. Neugebauer, V., Ponomarev, I. (2024) Alcohol withdrawal and pain: Peripheral mechanisms join central circuits. *Neuron* 112: 1-3. PMID: 38176389. PMC11045655.
23. Noorda, K., Noorda, K., Sabbagh, M.N., Bertelson, J., Ayers, G., Singer, J., Decourt, B. (2024) Amyloid-Directed Antibodies: Past, Present, and Future. *J Alzheimers Dis.* 101(s1):S3-S22. PMID: 39422953.
24. Notartomaso, S., Antenucci, N., Mazzitelli, M., Rovira, X., Boccella, S., Ricciardi, F., Liberatore, F., Gomez-Santacana, X., Imbriglio, T., Cannella, M., Zussy, C., Luongo, L., Maione, S., Goudet, C., Battaglia, G., Llebaria, A., Nicoletti, F., Neugebauer, V. (2024) A “double-edged” role for type-5 metabotropic glutamate receptors in pain disclosed by light-sensitive drugs. *eLife* 13:e94931 (21 pp). PMID: 39172042. PMC11341090.
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32. Shen, C.-L., Santos, J.M., Elmassry, M.M., Bhakta, V., Driver, Z., Ji, G., Yakhnitsa, V., Kiritoshi, T., Lovett, J., Hamood, A.N., Sang, S., Neugebauer, V. (2024) Ginger polyphenols mitigate hypersensitivity in neuropathic pain rats by reversing the molecular signature of amygdala neuroimmune signaling: implication of microbiome-gut-brain-axis. *Antioxidants* 13:502 (17 pp). PMID: 38790607; PMC11118883.
33. Shen, C.-L., Deshmukh, H., Santos, J.M., Elmassry, M.M., Presto, P., Driver, Z., Bhakta, V., Yakhnitsa, V., Kiritoshi, T., Ji, G., Lovett, J., Hamood, A.N., Neugebauer, V. (2024) Fecal microbiota transplantation attenuates mechanical hypersensitivity in rats with neuropathy via modulation of gut microbiome, suppression of microglial activation and inflammation in colon and brain: microbiota-gut-brain axis. *J. Frailty Aging* 13:319-330. PMID: 39574251.
34. Singer, J., Rerick, P., Elliott, L., Fadalla, C., McLean, E., Jump, A., Molinar-Lopez, V., Neugebauer, V. (2024) Investigating the Relationship Between Marital Status and Ethnicity on Neurocognitive Functioning in a Rural Older Population: A Project Frontier Study. *J. Gerontol. B Psychol. Sci. Soc. Sci.* 79(1), 1–9. <https://doi.org/10.1093/geronb/gbad126>.
35. Singer, J., Cummings, C., Coccaro, E. (2024) Parental Separation and Death During Childhood as Predictors of Adult Psychopathology: An Examination of Racial Differences. *Psychological Trauma: Theory, Research, Practice and Policy.* 16, 184-192. <https://doi.org/10.1037/tra0001291>.
36. Singer, J., Goveas, J.S., Elliot, L., Parmar, H., O'Connor, M.F. (2024) Personalized fMRI Tasks for Grief Severity in Bereaved Individuals: Emotional Counting Stroop and Grief Elicitation Protocols. *Psychiatry*

37. Sleem, T., Decourt, B., Sabbagh, M.N. (2024) Nonmedication Devices in Development for the Treatment of Alzheimer's Disease. *J. Alzheimers Dis. Rep.* 8(1):241-255. PMID: 38405349; PMCID: PMC10894612.
38. Wang, H., Huber, C.C., and Li, X. (2023) Mesenchymal and neural stem cell-derived exosomes in treating Alzheimer's disease. *Bioengineering* 10(2):253. PMID: 36829747; PMCID: PMC9952071.
39. Wang, H., Dwamena, A. (2024) Olfactory ecto-mesenchymal stem cells in modeling and treating Alzheimer's disease. *Int J Mol Sci.* 25(15):8492. PMID: 39126059; PMCID: PMC11313019.
40. Yakhnitsa, V., Thompson, J., Ponomareva, O., Ji, G., Kiritoshi, T., Mahimainathan, L., Molehin, D., Pruitt, K., Neugebauer, V. (2024) Dysfunction of small conductance Ca²⁺-activated potassium (SK) channels drives amygdala hyperexcitability and neuropathic pain behaviors: Involvement of epigenetic mechanisms. *Cells* 13: 1055 (27 pp). PMID 38920682; PMCID11201618.
41. Zammit, T., Mancini, V.O., Reid, C., Singer, J., Staniland, L., Breen, L.J. (2024) Public stigma toward prolonged grief and COVID-19 bereavement: A vignette-based experiment. *Death Stud.* 48(2):118-128. PMID: 36976583.
42. Zammit, T., Mancini, V.O., Reid, C., Singer, J., Staniland, L., Breen, L.J. (2024) Prolonged grief disorder, but not death from COVID-19, elicits public stigma: A vignette-based experiment. *Omega* 2024 Jun 4:302228241257306. PMID: 38834179.

MEETINGS ATTENDED *and* PRESENTATIONS *by* GIA RESEARCHERS (2024)

1. Abu-Samaha, A., McLean, E., & Singer, J. (2024, April). Comparing public perceptions of child and adult grief responses to familial incarceration. In J. Singer (chair), *Grieving a loss to incarceration: An examination of grief responses and public perceptions of family members of incarcerated individuals*. Association for Death Education and Counseling, Houston, TX, USA.
2. Aguilar, X., Hendrix., Singer, J., Levitt, D., Harris, H. Stress-O-Meter: Exploring the Connection Between Stress Biomarkers and Dementia. Texas Tech University Undergraduate Research Conference (URC).
3. Antenucci, N., Presto, P., Mazzitelli, M., Neugebauer, V. Sex differences in the contribution of microglia in the amygdala to neuropathic pain. Society for Neuroscience Conference, Chicago, IL, 2024.
4. Baker, A., Hindle, A., Smith, S.C., Strickland, J., Hernandez, M., Medina, J., Tanner, N., Ponomarev, I., Manczak, M., Lawrence, J.J. RARE-LacZ Mice as a Model to Study of Retinoic Acid Signaling at Cellular Resolution in Alzheimer's Disease. Society for Neuroscience Conference, Chicago, IL, 2024.
5. Bose, C., Hindle, A., Baker, A., Smith, S.C., Strickland, J., Guzman, I., Singh, S.P., J. J. Lawrence. Vitamin A and Histone Deacetylases in Alzheimer's Disease: The good, the bad, and the ugly. Alzheimer's Association International Conference, Philadelphia, PA, 2024.
6. Chen, Y., Yin, X.L., Kiritoshi, T., Presto, P., Mazzitelli, M., Manczak, M., Neugebauer, V. Cerebellin 1 alleviates cognitive deficits in a mouse model of Alzheimer's disease (J20 mice). Society for Neuroscience Conference, Chicago, IL, 2024.
7. Chrzanowski, L., Singer, J., Elliott, L., Rerick, P., Molinar-Lopez, V., Neugebauer, V. Investigation of inflammation and chronic pain on cognitive decline in rural Texas: A Project FRONTIER Study. TARCC Scientific Symposium, #49, Austin, TX, 2024.
8. Chrzanowski, L., Elliott, L., Schneider, S., Diehl, K., Abu-Samaha, A., Neugebauer, V., Singer, J. The Impact of Sleep Quality on Neurocognitive Functioning in Caregivers of Persons with Dementia. Gerontological Society of America (GSA), Annual Scientific Meeting, 1792306, Seattle, WA, 2024.
9. Coronado, H., Shircliff, K., Flood, E., Sims, I., McClinchie, M., Singer, J., Livingston, T., & Cummings, C. (2023, October). Trauma history is associated with greater sleep problems in college students who regularly use substances [Paper presentation]. Australian Association for Cognitive and Behaviour Therapy Annual

Meeting, Sydney, NSW, AU.

10. Cummings., C. (2023, October). Applying Intensive Longitudinal Methods in Psychological Research. In J. Singer (chair), A Primer on Novel and Cross-Cutting Methodological and Statistical Approaches in Psychological Research. Symposium presented at the annual meeting of the Australian Association for Cognitive and Behaviour Therapy, Sydney, NSW, AU.
11. Decourt, B., Singer, J., Molinar-Lopez, V., Yin, X.-L., Neugebauer, V. Project FRONTIER: A Cohort to Study Aging in Rural West Texas. Alzheimer's Association International Conference, ID#: 95032, #867, Philadelphia, PA, 2024.
12. Elliott, L., Singer, J., Rerick, P., Fadalla, C., McLean, E., Jump, A., Molinar-Lopez, V., & Neugebauer, V. Effect of Marital Status and Ethnicity on Neurocognitive Functioning in a Rural Older Population. Innovation in Aging, 7 (Supplement_1), 916-916, 2023.
13. Elliott, L., Sparks, S., Schneider, S., McLean, E., Fadalla, C., Neugebauer, V., Singer, J. Relationship Between Stress and Pre-Death Grief in Family Caregivers of Persons With AD/ABRD. Gerontological Society of America (GSA), Annual Scientific Meeting, 1792310, Seattle, WA, 2024.
14. Fadalla, C., Livingston, T.N., Schneider, S., Cummings, C., Singer, J. (2023, October). Evaluating the Interplay Between Feelings of Power and Pre-death Grief in Family Members of Persons with Life Limiting Illnesses. [Poster]. Australian Association for Cognitive and Behaviour Therapy, Sydney, NSW, AU.
15. Hindle, A., Smith, S.C., Hernandez, M., Baker, A., Strickland, J., Medina, J., Lawrence, J.J. RARE-LacZ Mice as a Model to Study of Retinoic Acid Signaling in Alzheimer's Disease. Alzheimer's Association International Conference, Philadelphia, PA, 2024.
16. Hurtado, Z.J., Presto, P., Kiritoshi, T., Mazzitelli, M., Ji, G., Neugebauer, V. BDNF in the amygdala modulates sensory and affective neuropathic pain behaviors. 36th Annual Student Research Week, p. 31, 2024.
17. Hurtado, Z.J., Presto, P., Kiritoshi, T., Antenucci, N., Yakhnitsa, V., Ji, G., Neugebauer, V. Exogenous BDNF modulates electrophysiologic changes in neurons of the amygdala. Society for Neuroscience Conference, Chicago, IL, 2024.
18. Ji, G., Kiritoshi, T., Yakhnitsa, V., Neugebauer, V. Microglia depletion blocks the induction of pain behaviors by chemogenetic activation of amygdala CRF neurons. Society for Neuroscience Conference, Chicago, IL, 2024.

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19. John, J., Mazzitelli, M., Ponomareva, O., Neugebauer, V. Effects of astrocyte silencing in the amygdala on pain behaviors in a pre-clinical neuropathic pain model. The National Conference on Undergraduate Research (NCUR), 1207, Long Beach, CA, 2024.
 20. Jump, A., Elliott, L., Schneider, S., McLean, E., Chrzanowski, L., Abu-Samaha, A., Neugebauer, V., Singer, J. Examining the Relationship Between Personality Factors and Neurocognitive Functioning in Dementia Caregivers. Gerontological Society of America (GSA), Annual Scientific Meeting, 1793722, Seattle, WA, 2024.
 21. Jump, A., Singer, J., Fadalla, C., Chrzanowski, L., Molinar-Lopez, V., Neugebauer, V. Examining Differences in Neurocognitive Functioning Between Hispanics who Preferred Assessments in Spanish vs. English: A Project Frontier Study. Texas Tech University Undergraduate Research Conference (URC), A3195, 2024.
 22. Kiritoshi, T., Narasimhan, K., Ji, G., Dravid, S., Neugebauer, V. Involvement of impaired GluD1-Cbln1 trans-synaptic signaling and autophagy in pain-related behaviors and neuroplasticity in central amygdala PKC δ neurons in a neuropathic pain model. Society for Neuroscience Conference, Chicago, IL, 2024.
 23. Liu, B., Presto, P., Mazzitelli, M., Ponomarev, I., Neugebauer, V. The role of amygdala lateralization and sex on pain-like behaviors following exogenous neuroinflammation. Texas Tech University Undergraduate Research Conference (URC), A3255, 2024.
 24. Liu, B., Presto, P., Mazzitelli, M., Ponomarev, I., Neugebauer, V. The role of amygdala lateralization and sex on pain-like behaviors following exogenous neuroinflammation. 36th Annual Student Research Week, p. 166, 2024.
 25. Livingston., T.N. (2023, October). Applying Linguistic Inquiry and Word Count (LIWC) Analysis to Support Psychological Assessment. In J. Singer (chair), A Primer on Novel and Cross-Cutting Methodological and Statistical Approaches in Psychological Research. Symposium presented at the annual meeting of the Australian Association for Cognitive and Behaviour Therapy, Sydney, NSW, AU.
 26. Livingston, T. N., Cummings, C., & Singer, J. (2023, October). Stakeholders' perceptions of positive and negative psychological outcomes associated with sexual misconduct response strategies. [Poster]. Australian Association for Cognitive and Behaviour Therapy Annual Meeting, Sydney, NSW, AU.

27. Livingston, T. N., Cummings, C., & Singer, J. (2023, October). Positive emotion expression explains the link between social power and health. [Poster]. Australian Association for Cognitive and Behaviour Therapy Annual Meeting, Sydney, NSW, AU.
28. Livingston, T. N., McLean, E., Singer, J., & Cummings, C. (2023, October). Responses to children's grief following the incarceration of a parent [Paper presentation]. Australian Association for Cognitive and Behaviour Therapy Annual Meeting, Sydney, NSW, AU.
29. Maccallum, F. (2023, October). Modeling Psychological Responses to Bereavement: How Computational Advances and Helping to Transform our Understanding of Adaption to Major Life Events. In J. Singer (chair), A Primer on Novel and Cross-Cutting Methodological and Statistical Approaches in Psychological Research. Symposium presented at the annual meeting of the Australian Association for Cognitive and Behaviour Therapy, Sydney, NSW, AU.
30. Manczak, M., Yin, X.L., Chen, Y., Lawrence, J.J., Neugebauer, V. The autophagy/mitophagy system and their receptors in Alzheimer's disease progression in APP23 and Tau-P301L transgenic mouse models. Society for Neuroscience Conference, Chicago, IL, 2024.
31. Mazzitelli, M., Antenucci, N., Salvemini, D., Neugebauer, V. Beneficial effects of amygdala P2Y14 receptor blockade a in a model of neuropathic pain. Society for Neuroscience Conference, Chicago, IL, 2024.
32. McCready, R., Morris, C., Antwi-Adjei, P., Pourghaed, M., Ramirez-Velandia, F., Kopel, J., Culbertson, J., Ashworth, G., Singer, J., Molinar-Lopez, V., Sabbagh, M.N., Neugebauer, V., Decourt, B., Lawrence, J.J. Relationships between Diabetes, Vitamin D Status, Neuropsychological Functioning, and Hispanic Ethnicity in Older Rural West Texans: A Project FRONTIER Study. Alzheimer's Association International Conference, D#: 91599, Philadelphia, PA, I2024.
33. McLean, E., Elliott, L., Schneider, S., Neugebauer, V., Singer, J. Personality and Pre-Death Grief in Family Caregivers of Persons With Dementia. Gerontological Society of America (GSA), Annual Scientific Meeting, 1793546, Seattle, WA, 2024.
34. McLean, E., Livingston, T.N., & Singer J. (2023, October) Grief Expectations and Perceptions of Family Members Grieving a Loss to Incarceration. [Poster]. Australian Association for Cognitive and Behaviour Therapy, Sydney, NSW, AU.
35. McLean, E., Singer, J. (2024, April). Family members grieving the loss of a person to incarceration: A scoping review. In. J. Singer (chair), Grieving a loss to incarceration: An examination of grief responses

and public perceptions of family members of incarcerated individuals. Association for Death Education and Counseling, Houston, TX, USA.

36. Morris C., McCready R., McCrea G., Decourt, B., Lawrence, J.J. (2024) Examining Relationships Between Vitamin D Deficiency, Healthcare Access, Hispanic Ethnicity, and General Health Rating among Aging Rural West Texans: A Project FRONTIER Study. Alzheimer's Association International Conference (AAIC), Philadelphia, PA.
37. Morris C., McCready R., McCrea G., Decourt, B., Lawrence, J.J. (2024) Reduced Health Care Accessibility Increases Risk of Vitamin D Deficiency/Insufficiency: A Project FRONTIER Study. Texas Alzheimer's Research and Care Consortium (TARCC), Austin, TX, USA.
38. Neugebauer, V., Salvemini, D., Mazzitelli, M., Antenucci, N. Effects of P2Y14 receptor activation on amygdala neurons. Society for Neuroscience Conference, Chicago, IL, 2024.
39. Neugebauer, B., Sparks, S., Elliott, L., Chrzanowski, L., McLean, E., Cummings, C., Neugebauer, V., Singer, J. Feasibility and Acceptability of MBCT and BA to Reduce Pre-Death Grief in Family Caregivers of Persons with Dementia. Gerontological Society of America (GSA), Annual Scientific Meeting, 1914223, Seattle, WA, 2024.
40. Nunez-Miranda, A., Hendrix, J., Elliott, L., Schneider, S., Sparks, S., Levitt, D., Singer, J., Neugebauer, V., Harris, B. N. Is leptin an effective biomarker of stress in patients with dementia and their corresponding caregivers? Texas Tech University Undergraduate Research Conference (URC), A1378, 2024.
41. Schneider, S., Elliott, L., Neugebauer, V., Singer, J. Examining the Effects of an Intervention for Persons with Dementia and Their Family Caregivers on Neurocognitive Outcomes: A Pilot Study. TARCC Scientific Symposium, #61, Austin, TX, 2024.
42. Schneider, S., Elliott, L., McLean, E., Diehl, K., Neugebauer, V., Singer, J. Impact of Respite Services on Dementia Caregivers' Neurocognitive and Pre-Death Grief Outcomes: A Pilot Study. Gerontological Society of America (GSA), Annual Scientific Meeting, 1793529, Seattle, WA, 2024.
43. Shah, M., Brismée, J.M., Hooper, T.L., Brite, L., Allen, B., Ibrahim, M.A., Schneider, S., Singer, J. (2024, April). Life Story Questionnaire Use Improves Depression Symptoms and Physical Therapy Participation in Dementia Facility Residents: A Randomized Control Trial. 8th Annual Symposium on Brain Health at Texas Tech University Health Sciences Center, Lubbock, TX, USA.

44. Shen, C.-L., Deshmukh, H., Santos, J.M., Elmassry, M.M., Presto, P., Driver, Z., Bhakta, V., Yakhnitsa, V., Kiritoshi, T., Ji, G., Lovett, J., Hamood, A., Neugebauer, V. Fecal microbiota transplantation modulated gut microbiome composition and suppressed microglial activation in brain and colon of neuropathic rats: microbiota-gut-brain axis. International Conference on Frailty and Sarcopenia Research (ICSFR), P10-3, 2024.
45. Shen, C.-L., Newman, J.W., Snodgrass, I.R., Chyu, M.-C., Lee, J., Luk, H.-J., Appel, C., Neugebauer, V., Watkins, B.A. Effects of Short-term Tai Chi on Circulating Oxylipins and Endocannabinoids in Post-menopausal Women. American College of Sports Medicine (ACSM), 2982, Boston, MA, 2024.
46. Shen, C.-L., Santos, J.M., Deshmukh, H., Elmassry, M.M., Chen, F., Presto, P., Neugebauer, V. Effects of ginger supplementation in a rat model of neuropathic pain: sex differences in spontaneous pain, intestinal integrity, fecal metabolites, and neuroinflammation gene expression. IASP World Congress, Amsterdam, Netherlands, 2024.
47. Shen, C.-L., Santos, J.M., Yakhnitsa, V., Antenucci, N., Kiritoshi, T., Ji, G., Presto, P., Lovett, J., Neugebauer, V. Effects of ginger supplementation on neuroinflammation and mitochondrial function in spinal cords of rats with neuropathic pain: evidence for gender differences. Nutrition, 1752505, Chicago, IL, 2024.
48. Shircliff, K., Coronado, H., Sims, I., Flood, E., McClinchie, M., Singer, J., Livingston, T., & Cummings, C. (2023, October). The role of experiences of positive affect in contextualizing problems with health and health behavior in college students. Australian Association for Cognitive and Behaviour Therapy Annual Meeting, Sydney, NSW, AU.
49. Shoji, E., Decourt, B., Neugebauer, V. Nicotine addiction and cognitive functions among rural older West Texans using data from Project FRONTIER conducted at the Garrison Institute on Aging. Annual Meeting, American Psychiatric Association, 4345, New York, NY, 2024.
50. Singer, J., Neugebauer, V. Investigating the relationship between stress and neurocognitive functioning in persons with dementia and their caregivers: A dyadic intervention study. TARCC Scientific Symposium, Invited talk, #11, p. 2, Austin, TX, 2024.
51. Singer, J. (2023, October). Utilizing Unique and Novel Methodology to Improve Diagnosis and Measurement of Treatment Response. In J. Singer (chair), A Primer on Novel and Cross-Cutting Methodological and Statistical Approaches in Psychological Research. Symposium presented at the annual meeting of the Australian Association for Cognitive and Behaviour Therapy, Sydney, NSW, AU.

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52. Singer J., Breen, L., Loggers., E. (2023, October). Adapting to Change as Legislature of Medical Aid in Dying Expands: Public stigma and Expectations of Grief Following Medical Aid in Dying. [Conference Paper]. Australian Association for Cognitive and Behaviour Therapy, Sydney, NSW, AU.
53. Smith, S.C., Bose, C., Hindle, A., Strickland, J., Guzman, I., Zhang, C., Baker, A., Ponomarev, I., Manczak, M., Shin, A.C., Pal, R., Singh, S.P., Lawrence, J.J. Tolerability of Vitamin A and Histone Deacetylase Inhibitors in Alzheimer's Disease Animal Models. Society for Neuroscience Conference, Chicago, IL, 2024.
54. Tsurukawa, F., Khanna, N., Pal, R., Lawrence, J.J. Multi-study transcriptomic analysis of Alzheimer's brain tissue: insights and caveats. Society for Neuroscience Conference, Chicago, IL, 2024.
55. Turner, C.E., Abu-Samaha, A., Neugebauer, V., Molinar-Lopez, V., Singer, J. Examining the Relationship Between Hypertension and Neurocognitive Functioning in a Unique Rural Sample [Poster Presentation]. Texas Tech University Undergraduate Research Conference (URC), A1035, 2024.
56. Watkins, B.A., Newman, J.W., Snodgrass, I.R., Chyu, M.-C., Lee, J., Luk, H.-Y., Appel, C., Neugebauer, V., Shen, C.-L. Tai Chi exercise of short duration alters circulating oxylipins in post-menopausal women with knee osteoarthritis. Nutrition, 1760665, Chicago, IL, 2024.
57. Weller, D., McLean, E., Singer, J. (2024, April). Grieving the loss of a family member to incarceration: a qualitative analysis. In. J. Singer (chair), Grieving a loss to incarceration: An examination of grief responses and public perceptions of family members of incarcerated individuals. Association for Death Education and Counseling, Houston, TX, USA.
58. Yakhnitsa, V., Ji, G., Antenucci, N., Navratilova, E., Porreca, F., Neugebauer, V. Kappa opioid receptor signaling in hypothalamus promotes stress-induced functional pain. Society for Neuroscience Conference, Chicago, IL, 2024.
59. Yin, X., Chen, Y., Kiritoshi, T., Manczak, M., Neugebauer, V. Cbln1 alleviates cognitive deficits in J20 mice. TARCC Scientific Symposium, #16, Austin, TX, 2024.



PROJECT FRONTIER

In 2024, Project FRONTIER (Facing Rural Obstacles to Healthcare Now Through Intervention, Education, and Research) continued to exemplify the Garrison Institute on Aging's commitment to advancing research and improving healthcare access in rural communities. This ongoing longitudinal study focuses on understanding the factors that influence brain health, aging, mental health, and chronic disease, particularly in underserved rural populations.

Our collaborative partnerships with Cochran County Memorial Hospital, Parmer County Community Hospital, and Friona Medical Office remain integral to the success of Project FRONTIER. These collaborations ensure that we can effectively engage with local communities, conduct comprehensive research, and provide valuable health-related resources to participants. Additionally, the project continues its outreach and data collection efforts in Bailey County, further expanding its reach and impact.

Project FRONTIER not only advances critical research on aging and neurodegenerative diseases but also fosters a deeper understanding of the unique challenges faced by rural populations. Through its efforts, the GIA continues to contribute to evidence-based strategies that promote brain health and improve healthcare delivery in these vital communities. By maintaining strong partnerships and engaging directly with participants, Project FRONTIER demonstrates the GIA's dedication to creating a healthier future for rural populations across Texas. For more details, please visit our website at <https://www.ttuhsu.edu/centers-institutes/garrison-aging/project-frontier.aspx>

We are very fortunate to have been able to recruit Dr. Samudani Dhanasekara, MBBS, Ph.D., as the Principal Investigator for Project FRONTIER. Dr. Dhanasekara received her M.S. and Ph.D. in Nutritional Sciences from Texas Tech University. Her background in medicine and extensive experience in basic, translational, and clinical research, as well as epidemiological and biostatistical methodologies will greatly benefit Project FRONTIER. Dr. Dhanasekara will hold a faculty appointment in the GIA and School of Medicine as an Assistant Professor in the Department of Pharmacology and Neuroscience.

PROJECT FRONTIER PUBLICATIONS

Fadalla, C., Singer, J., Rerick, P., Elliott, L., McLean, E., Schneider, S., Molinar-Lopez, V., Neugebauer, V. Neurocognitive Disparities: Investigating ethnicity and mental health in rural aging adults. Aging 16:1-18, 2024.

Pourghaed, M., Sarangi, A., Ramirez-Velandia, F., Kopel, J., Culberson, J., Ashworth, G., Khan, H., Boles, A., Neugebauer, V., Lawrence, J.J. Associations between Vitamin D deficiency/insufficiency and depression expose health disparities in older rural West Texans: A Project FRONTIER study. Am. J. Geriatr. Psychiatry 32:808-820, 2024. PMID: 38320908.

Singer, J., Rerick, P., Elliott, L., Fadalla, C., McLean, E., Jump, A., Molinar-Lopez, V., Neugebauer, V. (2024). Investigating the Relationship Between Marital Status and Ethnicity on Neurocognitive Functioning in a Rural Older Population: A Project Frontier Study. J. Gerontol. B Psychol. Sci. Soc. Sci. 79(1), 1–9. <https://doi.org/10.1093/geronb/gbad126>

PROJECT FRONTIER PRESENTATIONS

Chrzanowski, L., Singer, J., Elliott, L., Rerick, P., Molinar-Lopez, V., Neugebauer, V. Investigation of inflammation and chronic pain on cognitive decline in rural Texas: A Project FRONTIER Study. TARCC Scientific Symposium, #49, 2024.

Decourt, B., Singer, J., Molinar-Lopez, V., Yin, X.-L., Neugebauer, V. Project FRONTIER: A Cohort to Study Aging in Rural West Texas. Alzheimer's Association International Conference, ID#: 95032, #867, 2024.

Jump, A., Singer, J., Fadalla, C., Chrzanowski, L., Molinar-Lopez, V., Neugebauer, V. Examining Differences in Neurocognitive Functioning Between Hispanics who Preferred Assessments in Spanish vs. English: A Project Frontier Study. Texas Tech University Undergraduate Research Conference (URC), A3195, 2024.

McReady, R., Morris, C., Antwi-Adjei, P., Pourghaed, M., Ramirez-Velandia, F., Kopel, J., Culberson, J., Ashworth, G., Singer, J., Molinar-Lopez, V., Sabbagh, M.N., Neugebauer, V., Decourt, B., Lawrence, J.J. Relationships between Diabetes, Vitamin D Status, Neuropsychological Functioning, and Hispanic Ethnicity in Older Rural West Texans: A Project FRONTIER Study. Alzheimer's Association International Conference, ID#: 91599, 2024.

Morris C., McReady R., McCreia G., Decourt, B., Lawrence, J.J. (2024) Examining Relationships Between Vitamin D Deficiency, Healthcare Access, Hispanic Ethnicity, and General Health Rating among Aging Rural West Texans: A Project FRONTIER Study. Alzheimer's Association International Conference (AAIC), Philadelphia, PA, USA

Morris C., McReady R., McCreia G., Decourt, B., Lawrence, J.J. (2024) Reduced Health Care Accessibility Increases Risk

of Vitamin D Deficiency/Insufficiency: A Project FRONTIER Study. Texas Alzheimer's Research and Care Consortium (TARCC), Austin, TX, USA

Shoji, E., Decourt, B., Neugebauer, V. Nicotine addiction and cognitive functions among rural older West Texans using data from Project FRONTIER conducted at the Garrison Institute on Aging. Annual Meeting, American Psychiatric Association, 4345, 2024.





GIA BRAIN BANK

The Garrison Institute on Aging (GIA) places significant emphasis on its Brain Bank (GBB) as a scientific resource in its mission to advance translational research and education related to Alzheimer's disease (AD) and related dementias. It plays a crucial role in advancing our understanding of AD and related dementias. The GBB provides valuable services to families seeking a definitive diagnosis for patients with AD and other forms of dementia through brain autopsies. Beyond diagnosis, the GBB serves as a valuable resource for collaborative research, allowing TTUHSC and external scientists to study the cellular and molecular pathological changes associated with AD in specific brain regions and to identify factors that may predict the onset and severity of AD (commonly referred to as "biomarkers"). For example, we have recently identified a neural dysfunction associated with the downregulation of a secreted synaptic organizer (cerebellin1, Cbln1) forming transsynaptic complexes, and several downstream signaling molecules in post-mortem brains of patients with AD. The GBB also plays a pivotal role in educating and training students, research staff and faculty, and clinicians in the direct observation of neuropathological changes associated with AD.

The GBB will also play a crucial role in the planned new State funded Dementia Prevention Research Institute of Texas (DPRIT) that will be managed by the GIA team for any grants received by TTUHSC. In order to best serve the local communities, we are constantly assessing and fine-tuning our protocols and procedures for obtaining, processing, preserving, organizing and analyzing brain tissues to meet the international standards in consultation with external expert neuropathologists such as Dr. Brittany Dugger, UC Davis, CA, and Dr. C. Dirk Keene, lead neuropathologist for many national dementia research initiatives who is affiliated with the University of Washington, WA. With the assistance of our local GIA collaborator, Dr. Keith Bishop, and the TTUHSC Institute of Anatomical Sciences we are ensuring the appropriate identification of specific brain regions of interest for molecular analyses and tissue sharing. All brains at the GBB are tested regularly for quality control. A new secure web application for data management and online surveys (RedCap) has been implemented to improve data collection and sharing processes. The work of the GBB will be a strong component in our ambition to join the federally (NIH)-funded centers of excellence on Alzheimer's disease, known as the Alzheimer's Disease Research Centers (ADRC). In preparation for this application, collaborations are being explored with the UTHSC San Antonio ADRC Neuropathology Core (Director Dr. Kevin F. Bieniek) and TTUHSC El Paso (Dr. Deborah Clegg, Vice President for Research, and colleagues).



EDUCATION

Research Presentations, Educational Programs, Lecture Series

TRANSLATIONAL NEUROSCIENCE *and* PHARMACOLOGY LECTURE SERIES

01/12/2024 | *A Quest to Conquer Illness* | Distinguished Guest Speaker | Rehab Auf, M.D./Ph.D.

01/16/2024 | Graduate Student | Zachary Hurtado

01/30/2024 | *Exploring Aging: Anemias, Adenomas, and Cancer Treatment – Insights into Longevity and Health* | Distinguished Guest Speaker | Alyson Haslam, Ph.D.

02/13/2024 | *CRES in the Brain Extracellular Matrix – A Key Player in Neuroplasticity and Remodeling* | Graduate Student | Alejandra Gomez

02/20/2024 | *Role of brain vascular cell types in a neuroimmune mouse model of excessive ethanol consumption* | Graduate Student | Brent Kisby

03/05/2024 | *Evaluating ACEA for Dose – and Sex – Dependant Antinociceptive Effects and Exploration of the 5 – HT1a Receptor's Modulation of Nociception, Thermoregulation, Motor Coordination, and Anxiety* | Graduate Student | Robert Barnes

03/19/2024 | *Expression of ganglioside immunotherapeutic targets in neuroblastoma* | Graduate Student | Caezaan Keshvani

03/26/2024 | *Effects of TLR3 activation on temporal immune profiles of brain and blood in male and female FVB/B6 mice* | Graduate Student | Philip Adjei

04/09/2024 | *Journey of Butyl ether minocycline through the FDA approval* | Graduate Student | Praneetha Panthagani

04/16/2024 | *Central Pain Processing Circuits* | Distinguished Guest Speaker | Fan Wang, Ph.D.

05/21/2024 | *Serotonin receptors: New hope in treatment of dementia?* | Distinguished Guest Speaker | Evgeni Ponimaskin, Ph.D.



06/14/2024 | *Pathological Role of Mitochondrial Carrier Homolog Protein in Neurodegenerative Diseases* | Distinguished Guest Speaker | Xuemin Xu, Ph.D.

08/20/2024 | *Role of brain vascular cell types in a neuroimmune mouse model of excessive ethanol consumption* | Graduate Student | Brent Kisby

09/03/2024 | *Sex – specific effects of TLR3 – dependent innate immune activation on alcohol consumption and cytokine profiles in mice* | Graduate Student | Philip Adjei

09/10/2024 | *Transition from acute to chronic pain: role of the N – acylethanolamine acid amidase (NAAA)* | Distinguished Guest Speaker | Yannick Fotio, Ph.D.

09/17/2024 | *Amygdala CRF – expressing cells mediate the effects of early life painful trauma on subsequent emotional and pain behaviors* | Distinguished Guest Speaker | Mike Burman, Ph.D.

10/01/2024 | *Alcohol as a Modifiable Risk Factor for Alzheimer's Disease: Focus on Neuroinflammation and ApoE4* | Graduate Student | Neha Sawant

10/08/2024 | Graduate Student | Tenley Lehman

10/15/2024 | Graduate Student | Alejandra Gomez

10/22/2024 | *Understanding the effects of alcohol on genome using ATAC-seq* | Graduate Student | Praneetha Panthagani

10/25/2024 | *From bench to bedside to bytes: Using Neuroscience to understand and treat pain* | Distinguished Guest Speaker | Benedict J. Kolber, Ph.D.

10/29/2024 | Distinguished Guest Speaker | Yves De Koninck, Ph.D.

11/05/2024 | *Molecular Signatures of Binge Drinking* | Distinguished Guest Speaker | Angela Ozburn, Ph.D.

11/12/2024 | *Future of Population – based studies in aging and AD/ADRD research* | Distinguished Guest Speaker | Damali Martin, Ph.D.

11/19/2024 | Graduate Student | Caczaan Keshvani

12/03/2024 | Graduate Student | Robert Barnes

ANNUAL RESEARCH SYMPOSIUM

The Eighth Annual Research Symposium “NIA Alzheimer’s Translational Research Program and Funding Opportunities” was a collaboration of Center of Excellence for Translation Neuroscience and Therapeutics (CTNT) and the GIA. Held on Tuesday, April 17, 2024, TTUHSC, Lubbock, Texas



• DISTINGUISHED KEYNOTE SPEAKER AND ADK LECTURER

Shreaya Chakroborty, Ph.D. | Program Director, Translational Research Branch, Division of Neuroscience, NIH National Institute on Aging | “NIA Alzheimer’s Translational Research Program and Funding Opportunities”

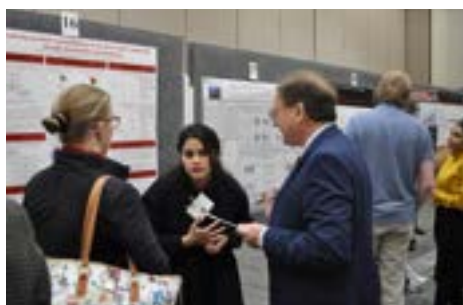
Opening Remarks

Dr. Lance McMahon, Senior Vice President for Research and Innovation, TTUHSC

Dr. Volker Neugebauer, Director, Center of Excellence for Translational Neuroscience and Therapeutics (CTNT), and Executive Director, Garrison Institute on Aging (GIA)

• CTNT COLLABORATIVE RESEARCH PRESENTATIONS

Josh Lawrence, Ph.D., Associate Professor, Pharmacology and Neuroscience and Garrison Institute on Aging, “Vitamin A nutrigenomics and Alzheimer’s disease pathogenesis: emerging multi-level preclinical and human studies”



Boris Decourt, Ph.D., Assistant Professor, Pharmacology and Neuroscience and Garrison Institute on Aging, “Translational research on dementia: from drug testing to identifying risk factors”

Jonathan Singer, Ph.D., Assistant Professor, Psychological Sciences, TTU, and Garrison Institute on Aging “Investigating the grieving brain utilizing unique methodologies”

• POSTER PRESENTATIONS

Basic Science – Undergraduate/Medical Students

Aarthi Annamalai, Meagan Baggett, Isabel Guzman, Isabella Makelaar, Kara Rodgers, Jordan Sanchez, Andrew Vann, Isabella Zambrano, Charlie Zhang, Kimberly Brown, Travis Kastner, Maamoon Mian, Farhood Salehi, Alyson Willis

Basic Science – Graduates

Philip Adjei, Shahira Arzoo, Robert Barnes, Hirva Sunikumar Bhayani, Ema Bidiwala, Fereshteh Dehghani, Zachary Hurtado, Caezaan Keshvani, Brent Kisby, Tenley Lehman, Yash Mahta, Ehsan Nozohouri, Kseniia Orbets, Praneetha Pantagani, Fernando Tsurukawa

Basic Science – Postgraduate

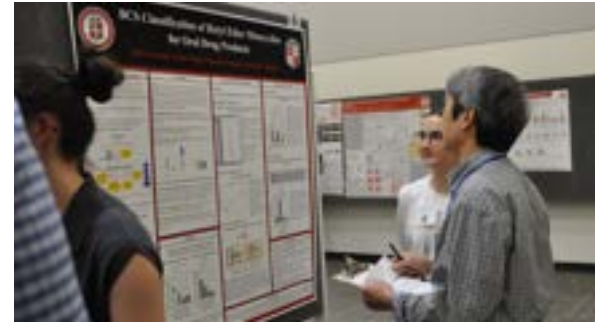
Quynh Hoa Do, Nermina Sarayli Belirgen, Sam Shanmugam, Linda Yin

Clinical – Undergraduate/Medical Students

Jakub Formella, Marcos Arciniega, Valeria Levin, Riley McCready, Claudia Morris, Foster Ogu, Hannah Seo

Clinical – Graduate Students

Lauren Chrzanowski, Megha Shah, Rubaia Tasmin, Antonio Vintimilla



• 2024 POSTER AWARD WINNERS

Basic Science

- **Undergraduate: Isabella Makelaar** – “Utilizing membrane protein chaperone to prevent and disrupt alpha synuclein protein aggregation in Parkinson Disease”
- **Medical Student: Travis Kastner** – “Exploring the Impact of Dietary Vitamin E Intake on Neurodegenerative Diseases: A Review of Free Radical Damage Mitigation
- **Graduate Student: Caezaan Keshvani** – “CD3 ganglioside is not a potential cell surface immunotherapeutic target for neuroblastoma”
- **Post Graduate: Linda Yin** – “Cbln1 alleviates cognitive deficits in J20 mice”

Clinical

- **Medical Student: Hannah Seo** – “Mitochondria division inhibitor 1: a promising therapeutic strategy for Huntington’s Disease”
- **Graduate Student: Lauren Chrzanowski** – “Associations between Vitamin D Deficiency/Insufficiency and Diabetes in Older Rural West Texans: A Project FRONTIER Study”



COMMUNITY OUTREACH

The Garrison Institute on Aging (GIA) has a dedicated Community Outreach and Education division that works to improve the health and well-being of older adults, particularly focusing on Alzheimer's disease and other aging-related health issues. We have expanded our programs to better serve the community, offering a mix of virtual and in-person activities to reach more people. Our outreach initiatives aim to educate the community, raise awareness about aging and dementia, and provide valuable resources and support to individuals and families dealing with these issues.

DEMENTIA FRIENDLY LUBBOCK (DFL)

Dementia Friendly Lubbock (DFL) is a cornerstone initiative of the Garrison Institute on Aging (GIA) at Texas Tech University Health Sciences Center. It exemplifies the institute's mission to enhance the quality of life for individuals living with dementia and their families. As part of the national Dementia Friendly America network, DFL is committed to creating a more inclusive, compassionate community that recognizes and supports the needs of those impacted by dementia. Through education, outreach, and partnerships, DFL fosters a culture of respect, understanding, and inclusion for individuals and families navigating the challenges of dementia.

A key component of DFL is the Dementia Live program, for which the Garrison Institute on Aging is a certified site. Dementia Live offers an immersive experience designed to increase awareness and empathy for the lived realities of dementia. This innovative program has been delivered throughout Lubbock to diverse audiences, ranging from elementary-aged children to families, caregivers, and professional groups. By simulating the cognitive and sensory challenges faced by those with dementia, Dementia Live empowers participants with a deeper understanding of the condition, fostering greater compassion and more effective support.

The impact of Dementia Live extends beyond individual participants, contributing to the broader goals of DFL. By integrating this experiential learning into its initiatives, DFL strengthens its efforts to unite the community, providing resources and training to create a dementia-friendly environment. Whether through educational programs or collaborative partnerships, the Garrison Institute on Aging continues to lead the way in advocating for meaningful change, ensuring that Lubbock is a place where individuals living with dementia and their families feel valued, understood, and supported.

Thursday, February 8, 2024, Family Caregivers

Tuesday, February 20, 2024, Family Caregivers

Thursday, March 7, 2024, School of Medicine – Elementary Children Tour

Wednesday, March 20, 2024, Family Caregivers

Thursday, May 9, 2024, Mackenzie Court Staff

Wednesday, May 15, 2024, Family Caregivers

Tuesday, May 21, 2024, Family Caregivers

Wednesday, June 19, 2024, Family Caregivers

Friday, July 12, 2024, School of Medicine – Elementary Students Summer Camp

Wednesday, August 21, 2024, Family Caregivers

Wednesday, September 18, 2024, Family Caregivers

Wednesday, October 16, 2024, Family Caregivers

Wednesday, December 18, 2024, Family Caregivers

2024 NATIONAL ALZHEIMER'S DISEASE AWARENESS MONTH

In November 2024, the Garrison Institute on Aging proudly hosted its 5th Annual Alzheimer's Awareness Month events, continuing its dedication to supporting individuals and families affected by Alzheimer's disease. These events coincided with National Alzheimer's Disease Awareness Month, established in 1983 by President Ronald Reagan to highlight the prevalence of Alzheimer's disease and inspire action against its devastating impact.

The highlight of the month was the 5th Annual Alzheimer's Awareness Symposium, centered on the theme of caregiving. The keynote speaker, Allison Applebaum, Ph.D., Founding Director of the Caregivers Clinic at Memorial Sloan Kettering Cancer Center, delivered a powerful presentation titled "Focusing on the Caregiver." Dr. Applebaum emphasized the vital role of caregivers in managing dementia and offered valuable strategies to support their well-being. The symposium also featured an expert-led panel discussion, equipping attendees with practical tools and insights into dementia care and research advancements.

A key feature of the symposium was the participation of multiple vendors who provided valuable resources and information tailored to the Lubbock area. These vendors played a crucial role in connecting attendees with local services and support networks, ensuring that individuals and families affected by dementia could access the help they need within their community.

Alzheimer's disease, the most common cause of dementia in older adults, presents a growing public health challenge. According to the 2022 Alzheimer's Disease Facts and Figures report by the Alzheimer's Association, 6.5 million Americans aged 65 and older were living with the disease, a number projected to rise to 12.7 million by 2050. In Texas, cases among those aged 65 and older are expected to increase by 22.5%. These figures underscore the importance of events like the symposium, which raise awareness and provide critical support for those affected.

The month-long awareness efforts also included community outreach programs, educational sessions, and public campaigns, all aimed at fostering understanding and compassion. Through these initiatives, the GIA remains steadfast in its mission to enhance brain health, support caregivers, and advance the fight against Alzheimer's disease, providing education, resources, and hope to the community.

November 6, 2024 - Care Partner Academy, "Caregiving and Legal Issues: How to Stay Ahead of the Game", Lee Franks, J.D., Law Offices of Lee Franks

November 12, 2024 - "Future of Population-based studies in aging and AD/ADRD research", Damali Martin, Ph.D., Branch Chief of Population Studies and Genetics Branch, Division of Neurosciences, National Institute on Aging (NIA)

November 19, 2024 - Community member event - Alzheimer's Awareness Symposium, "Focusing on the Caregiver", Keynote Speakers- Allison Applebaum, Ph.D., Founding Director, Caregivers Clinic, Memorial Sloan Kettering Cancer Center

HEALTHY AGING LECTURE SERIES

Since its launch in 2005, the Healthy Aging Lecture Series has been a vital part of the Garrison Institute on Aging's mission to educate and engage the community. This long-standing program offers the public valuable insights into health, wellness, and innovative research, with a particular focus on topics relevant to seniors.

Held every fourth Wednesday of the month during the Fall and Spring, the series features local community experts sharing important information about chronic diseases such as Alzheimer's, cardiovascular conditions, and other significant health issues.

January 24, 2024 | *"New Year, New Me: Taking Care of The Self You Have, Since You Can't Have A New One"* | Sherry Rosenbald, Ph.D., M.A., B.A., Assistant Professor, TTUHSC

February 28, 2024 | *"Diet & Heart Health"* | Scott Shurmur, M.D., Chairman Department of Internal Medicine, Medical Director, CCVH

March 27, 2024 | *"Arthritis and Other Aches and Pains"* | John Culberson, M.D., Associate Professor, Director, Family & Community Medicine TTUHSC

April 24, 2024 | *"Crisis Management: Be Prepared"* | Joe Moudy, Emergency Management Director, City of Lubbock

May 22, 2024 | *"Fueled, Fit, & Fresh: Improving Quality Nutrition, Training, & Recover"* | Toby Brooks, Ph.D., Associate Professor, Assistant Dean, Faculty Development TTUHSC

September 25, 2024 | *"Taking Care of U: Recurrent UTIs"* | Charles Thompson, M.D., Residency Program Director, Associate Professor

October 23, 2024 | *"Types of Aphasia"* | Melinda Corwin, Ph.D., Assistant Director, Department of Speech, Language, & Hearing Sciences, Full Professor, Director, Stroke & Aphasia Recover (STAR) Program, Co-Advisor, TTUHSC NSSLHA

HEALTHY AGING LECTURE SERIES

The Care Partner Academy, now under the direction of Barbara Singer, continues the Garrison Institute on Aging's mission to empower caregivers in our community. Barbara, a certified Alzheimer's Association Educator and Group Support Leader, brings a wealth of expertise and passion to this vital program. Her leadership ensures that caregivers receive essential resources, education, and support to navigate the challenges of caregiving.

Previously, Joan Blackmon played a key role in scheduling the academy's sessions, and her contributions helped establish a strong foundation for the program. Now, the Care Partner Academy meets once a month on the second Wednesday at noon, providing regular and reliable opportunities for caregivers to access these valuable resources.

Dr. John Culbertson, Associate Professor of Family and Community Medicine and Program Director of the Geriatric Fellowship at TTUHSC, collaborates with the academy to shape its educational offerings. The sessions cover critical topics such as stress management, problem-solving strategies, coping mechanisms, and community service opportunities.

Through Barbara's guidance and Dr. Culbertson's expertise, the Care Partner Academy remains a beacon of hope and practical assistance for caregivers, enriching their lives and equipping them to prioritize both their loved ones' care and their own well-being.

PRESENTERS AND TOPICS:

- **September 6, 2023** | *Rolling with Uncertainty: Adapting to The New Normal* | Jonathan Singer, Clinical Psychology, TTU
- **October 10, 2023** | *Walk the Talk: What Rehab Can Do for You* | Trustpoint Rehabilitation Hospital of Lubbock
- **November 2, 2023** | *Improving Caregiving Burden, Stress, and Pre-Death Grief in Family* | Jonathan Singer, Ph.D., Clinical Psychology, TTU
- **December 12, 2023** | *Preparing for End of Life* | Donnie Fortenberry, Sander Funeral Home
- **January 10, 2024** | *Got Questions? Need Answers?* | Francisco Sotelo, SPAG-AAA
- **February 16, 2024** | *One Step Ahead Means You Will Not Be Left Behind* | Clint Thetford, Lubbock County Emergency Services

- **March 13, 2024** | *Elder Law: What You Need to Know, And Have in Place* | Lee Franks, J.D., Law Offices of Lee Franks
- **April 10, 2024** | *Self-Care as A Caregiver* | Lauren Chrzanowski, B.S., Research Coordinator, GRILL Lab TTU
- **May 14, 2024** | *Chronic Disease: The Good, The Bad, and The Ugly* | John Culberson, M.D., TTUHSC Family Medicine
- **June 4, 2024** | *There's No Place Like Home, Until There Is Not* | Becky Haskit, Former Caregiver
- **September 11, 2024** | *Building Foundations of Caregiving* | Barbara Singer, TTUHSC Garrison Institute on Aging
- **October 9, 2024** | *Supporting Independence for Persons with Dementia: Balancing Daily Activities & Safety* | Barbara Singer, TTUHSC Garrison Institute on Aging
- **November 6, 2024** | *Caregiving & Legal Issues: How to Stay Ahead of The Game* | Lee Franks, J.D., Law Offices of Lee Franks
- **December 11, 2024** | *Holiday Stress* | John Culberson, M.D., TTUHSC Family Medicine

MEETINGS ATTENDED *by* GIA COMMUNITY OUTREACH *and* EDUCATION STAFF

January 2024

- Southwest Parkinson's Society Meeting | January 2, 2024 | J. Blackmon
- ADRC Planning Meeting | January 8, 2024 | V. Lopez
- Inside Out foundation Women's Conference | January 13, 2024 | J. Blackmon
- Lubbock Social Worker Monthly Luncheon | January 16, 2024 | B. Singer
- Carillon Alzheimer's Support Group | January 17, 2024 | B. Singer
- "Sorting out Risks of Medication" (Zoom) | January 18, 2024 | B. Singer
- PAG-AAA Advisory Council on Aging (ACoA) | January 18, 2024 | J. Blackmon
- ADRC Outreach Core Meeting | January 22, 2024 | J. Blackmon, B. Singer, V. Lopez
- MedMinders Information Session | January 23, 2024 | J. Blackmon, V. Lopez
- "Minding Dementia Summit" (Zoom) | January 23, 2024 | B. Singer
- Encompass Health Meeting | January 24, 2024 | V. Lopez, B. Singer

February 2024

- Oceans Open House | February 1, 2024 | B. Singer
- South Plains Home Care Association Luncheon | February 7, 2024 | B. Singer
- RSVP – TSCA Conference | February 5-8, 2024 | J. Blackmon, V. Lopez, E. Garza
- ADRC Planning Meeting | February 12, 2024 | V. Lopez
- WTX Alzheimer's Association Exec. Director Meet & Greet | February 13, 2024 | B. Singer, V. Lopez, R. Gonzales
- West Texas Caregiver Conference Day 1: Virtual Series | February 19, 2024 | B. Singer, J. Franco, V. Lopez
- West Texas Caregiver Conference Day 2: Virtual Series | February 20, 2024 | B. Singer, J. Franco, V. Lopez
- Meeting with Pastor of Baptist Church | February 20, 2024 | B. Singer, V. Lopez
- Meeting with Pastor Davis of Baptist Church | February 20, 2024 | B. Singer, V. Lopez
- South Plains Social Worker Luncheon | February 20, 2024 | B. Singer
- SPAG-AAA Advisory Council Meeting | February 20, 2024 | J. Blackmon
- West Texas Caregiver Conference Day 3: Virtual Series | February 21, 2024 | B. Singer, J. Franco, V. Lopez
- West Texas Caregiver Conference Day 4: Virtual Series | February 22, 2024 | B. Singer, J. Franco, V. Lopez
- West Texas Caregiver Conference Day 5: Virtual Series | February 23, 2024 | B. Singer, J. Franco, V. Lopez
- Elder Abuse – Virtual Series | February 28, 2024 | B. Singer
- Bashire Easton – Virtual Series | February 29, 2024 | B. Singer
- Enhabit Home Health and Hospice Meeting | February 29, 2024 | B. Singer

March 2024

- Carillon meeting | March 4, 2024 | B. Singer
- Southwest Parkinson's Society Meeting | March 5, 2024 | J. Blackmon
- South Plains Home Care Association Luncheon | March 6, 2024 | B. Singer
- Brookdale Monterey with Allison McMillian | March 7, 2024 | B. Singer
- Catholic Charities Women's Conference | March 8, 2024 | C. Aguirre, C. Mendoza
- Lubbock Women's Club | March 11, 2024 | J. Blackmon Guest Speaker
- DSHS Alzheimer's Partnership Meeting (Zoom) | March 12, 2024 | B. Singer, V. Lopez
- ADRC Outreach Core Meeting | March 12, 2024 | V. Lopez, B. Singer
- Dunbar Neighborhood Association with Billie Russell and Pat Page | March 12, 2024 | B. Singer, V. Lopez
- Project FRONTIER Leaders Luncheon | March 21, 2024 | C. Aguirre, B. Singer, V. Lopez, C. Mendoza
- SPAG Conference | March 25, 2024 | B. Singer
- Alzheimer's Association meeting with El Paso leadership | March 27, 2024 | B. Singer, V. Lopez
- Alzheimer's Support Group Meeting | March 28, 2024 | J. Blackmon
- GRILL Lab/ Garrison Institute on Aging BINGO | March 28, 2024 | B. Singer

April 2024

- South Plains Rehab Tour | April 1, 2024 | B. Singer, V. Lopez
- Wovenly Informational Meeting | April 2, 2024 | V. Lopez
- Southwest Parkinson's Society Meeting | April 2, 2024 | J. Blackmon, B. Singer
- DSHS Alzheimer's Disease Partnership | April 3, 2024 | V. Lopez, B. Singer
- South Plains Home Care Association Luncheon | April 3, 2024 | B. Singer
- VCA Summit | April 8, 2024 | V. Lopez
- PAC Teepa Snow Informational Session | April 9, 2024 | V. Lopez, B. Singer
- Alzheimer's Association Support Group | April 11, 2024 | B. Singer
- Raider Ranch Support Group | April 12, 2024 | J. Blackmon
- Parkinson's Symposium | April 12, 2024 | B. Singer, J. Blackmon
- Hillcrest Manor Meeting | April 15, 2024 | J. Blackmon
- Medical Social Worker Luncheon | April 16, 2024 | B. Singer
- Hillcrest Manor Health Fair | April 22, 2024 | J. Blackmon
- VC Student Tour | April 24, 2024 | B. Singer, V. Lopez
- LMOW Volunteer Appreciation Event | April 26, 2024 | J. Blackmon
- DSHS Alzheimer's Disease Partnership | April 30, 2024 | B. Singer, V. Lopez

May 2024

- South Plains Home Care Association Luncheon | May 1, 2024 | B. Singer
- Fiesta Bingo Cochran | May 1, 2024 | C. Aguirre, B. Singer, V. Lopez, C. Mendoza
- Texas AmeriCorps Seniors Quarterly Call | May 6, 2024 | V. Lopez
- South Plains Rehab Informational Meeting | May 7, 2024 | B. Singer, V. Lopez
- Raider Ranch Support Group | May 9, 2024 | J. Blackmon
- Feed Seniors Now Committee Meeting | May 13, 2024 | J. Blackmon
- Medicare Patrol Session | May 14, 2024 | J. Blackmon, B. Singer, V. Lopez
- Southwest Baptist Support Group meeting | May 14, 2024 | B. Singer
- Parmer County Open House | May 21, 2024 | C. Aguirre, V. Lopez, R. Gonzales, C. Mendoza
- DSHS Implementation Planning Workgroup State Alzheimer's Disease | May 23, 2024 | V. Lopez, B. Singer

June 2024

- Healthy Habits from Alzheimer's Association (Zoom) | June 4, 2024 | B. Singer
- Alzheimer's Support Group | June 5, 2024 | J. Blackmon
- South Plains Home Care Association Luncheon | June 5, 2024 | B. Singer
- Raider Ranch Alzheimer's Support Group | June 13, 2024 | J. Blackmon
- Carillon Alzheimer's Support Group | June 13, 2024 | B. Singer

- **KCBD Health Wise Expo | June 15, 2024 | J. Blackmon, B. Singer, V. Lopez**
- **Exodus Prison Ministry Meeting | June 16, 2024 | J. Blackmon**
- **DSHS Alzheimer's Partnership Meeting (Zoom) | June 18, 2024 | V. Lopez, B. Singer**
- **SPAG-AAA Caregiver Conference | June 20, 2024 | J. Blackmon, V. Lopez**
- **SPAG-AAA Advisory Council Meeting | June 26, 2024 | J. Blackmon**
- **Alzheimer's Association Meeting | June 26, 2024 | V. Lopez, B. Singer**

July 2024

- Southwest Parkinson's Society Meeting | July 2, 2024 | J. Blackmon
- Carillon Alzheimer's Support Group | July 11, 2024 | B. Singer
- School of Medicine Summer Camp | July 12, 2024 | B. Singer, V. Lopez,
- Raider Ranch Open House | July 16, 2024 | J. Blackmon
- Medical Social Worker Luncheon | July 16, 2024 | B. Singer
- Alzheimer's Disease DSHS State Implementation Workgroup Meeting | July 16, 2024 | V. Lopez
- SPAG Health Fair Slaton | July 17, 2024 | B. Singer, J. Franco
- Cheese Burger Festival | July 20, 2024 | C. Aguirre, B. Singer, V. Lopez, R. Gonzales

August 2024

- Age-U-Cate training (Zoom) | August 1, 2024 | B. Singer, J. Franco
- AmeriCorps National Conference – Baltimore, Maryland | July 29 – Aug 2, 2024 | J. Blackmon
- TTU Staff Senate Caregiving Resource Fair | August 6, 2024 | J. Blackmon, B. Singer
- Dunbar Neighborhood Nites Out | August 6, 2024 | B. Singer
- Night Out at Patterson Library | August 6, 2024 | J. Blackmon
- Raider Ranch Support Group | August 8, 2024 | J. Blackmon
- Carillon Alzheimer's Support Group | August 8, 2024 | B. Singer
- Senior Medicare Patrol Training & Assessment (Zoom) | August 13, 2024 | J. Blackmon, B. Singer, V. Lopez
- Refraining Agitation and Aggression as Responsive Behaviors by Alzheimer's Foundation (Zoom) | August 21, 2024 | B. Singer
- RSVP Advisory Council Meeting | August 22, 2024 | J. Blackmon

September 2024

- Alzheimer's Disease Partnership Meeting | September 4, 2024 | B. Singer, V. Lopez
- South Plains Home Care Association Luncheon | September 4, 2024 | B. Singer
- Navigating Dental Care for Individuals with Dementia by Alzheimer's Foundation of America (Zoom) | September 12, 2024 | B. Singer
- Carillon Alzheimer's Support Group | September 12, 2024 | B. Singer
- Raider Ranch Support Group | September 12, 2024 | J. Blackmon

- An Overview of the Other Types of Dementia – Related Illnesses by Alzheimer’s Foundation of America (Zoom) | September 18, 2024 | B. Singer
- UMC Balance Expo | September 21, 2024 | J. Blackmon, B. Singer
- Wellness! Practical Ways to Manage Stress (Zoom) | September 24, 2024 | J. Blackmon
- Alzheimer’s Disease Partnership Meeting DSHS (Zoom) | September 25, 2024 | B. Singer, V. Lopez

October 2024

- Alzheimer’s Walk to Remember / Adventure Park | October 5, 2024 | J. Blackmon, B. Singer, V. Lopez
- SPAG Health Fair in Lamesa | October 5, 2024 | B. Singer
- Raider Ranch Support Group | October 10, 2024 | J. Blackmon
- SPAG Health Fair in Tahoka | October 10, 2024 | B. Singer
- Alzheimer’s Association Health Fair | October 10, 2024 | B. Singer
- Southwest Parkinson’s Walk – NRHC | October 12, 2024 | J. Blackmon
- Foster Grandparents in Service Session | October 15, 2024 | J. Blackmon
- Medical Social Worker Luncheon | October 15, 2024 | B. Singer
- Fall Festival at Primrose | October 17, 2024 | J. Blackmon
- Magic Morning Show Interview | October 23, 2024 | B. Singer, V. Lopez
- Innovation in Dementia Care: A Collaborative Conversation | October 23, 2024 | B. Singer, V. Lopez

November 2024

- Medical Social Worker Luncheon | November 12, 2024 | B. Singer
- DSHS Alzheimer’s Workgroup (Zoom) | November 12, 2024 | B. Singer
- Carillon Alzheimer’s Association Support Group | November 14, 2024 | B. Singer
- Grace Clinic Provider Meeting | November 15, 2024 | B. Singer
- Patriot Stocking Project | November 17, 2024 | J. Blackmon
- Alzheimer’s Disease Partnership Meeting DSHS (Zoom) | November 20, 2024 | B. Singer, V. Lopez
- Alzheimer’s Support Group | November 21, 2024 | J. Blackmon

December 2024

- Alzheimer’s Disease Partnership Meeting DSHS (Zoom) | December 4, 2024 | B. Singer, V. Lopez
- Presentation at Seniors are Special UMC | December 6, 2024 | B. Singer
- Fall Prevention Workshop by Alzheimer’s Foundation of America | December 12, 2024 | B. Singer
- Carillon Alzheimer’s Support Group | December 12, 2024 | B. Singer
- Alzheimer’s Support Group | December 19, 2024 | J. Blackmon
- Medical Social Worker Luncheon | December 17, 2024 | B. Singer

10TH ANNUAL CAREGIVER CONFERENCE

The 10th Annual Caregiver Conference, hosted by the Area Agency on Aging (AAA), was a remarkable success, continuing its tradition of providing vital resources and support to caregivers in the community. This year's event was held at TTUHSC Academic Event Center on 3401 4th Street in Lubbock, Texas, and offered attendees an enriching experience with informative presentations, vendor resources, and opportunities for connection. The conference, free and open to the public, welcomed over 100 participants and featured more than 15 vendors sharing valuable community resources for caregivers and their loved ones.

The highlight of the conference was the keynote address delivered by Dr. Jonathan Singer, Assistant Professor in Clinical Psychology at Texas Tech University and Director of Garrison Institute on Aging Comprehensive Memory Clinic at TTUHSC. Dr. Singer's presentation focused on improving the psychological health of patient-caregiver dyads dealing with life-limiting illnesses. Drawing from his extensive research and clinical work, Dr. Singer provided actionable strategies for navigating the emotional challenges of caregiving, emphasizing the importance of maintaining mental well-being and fostering a supportive caregiver-patient relationship. His insights were both engaging and empowering, leaving a lasting impression on attendees.

In addition to the educational sessions, the event featured a variety of vendor booths offering resources tailored to caregivers, a complimentary lunch, and exciting door prizes that added a sense of fun and community. The success of the conference was made possible through the generous support of sponsors, including Raider Ranch, the TTUHSC Garrison Institute on Aging, and Brookdale Monterey. Their commitment to supporting caregivers underscores the importance of collaboration in addressing the challenges faced by those caring for loved ones with dementia and other conditions.

The 10th Annual Caregiver Conference was a testament to the enduring commitment of the Area Agency on Aging and its partners to empower and support caregivers, providing them with the tools, knowledge, and community connections needed to thrive in their caregiving roles.

BINGO NIGHTS *in* DAWSON *and* COCHRAN COUNTIES

The Garrison Institute on Aging (GIA) hosted Bingo Nights in Dawson and Cochran Counties as part of its mission to engage rural communities and provide essential information about its programs and initiatives. These events were designed to create a welcoming environment where community members could gather, have fun, and learn about vital resources for brain health and aging.

Through these Bingo Nights, attendees learned about Project FRONTIER, which focuses on understanding and addressing health disparities in rural communities, and TX-CARES a project within the GRILL Lab, which explores innovative approaches to health and well-being.

Additionally, the events provided an opportunity to share details about the Brain Bank, a program contributing to groundbreaking research on neurodegenerative diseases, and the newly established Comprehensive Memory Care Clinic, led by Dr. Jonathan Singer. This clinic offers diagnostic and care services to those impacted by dementia and memory-related conditions.

By combining engaging activities like Bingo with educational outreach, the GIA successfully connected with underserved populations, fostering awareness and access to their critical programs.

KCBD HEALTH EXPO 2024

On June 15, 2024, the GIA proudly served as the Main Stage Sponsor for the inaugural KCBD Health Wise Expo, held at the Lubbock Civic Center. This first-of-its-kind event brought together health organizations, experts, and community members to promote wellness and provide valuable resources.

As a leader in aging and brain health, the GIA took this opportunity to connect with the public, sharing information on our key programs, including Dementia Live, the Memory Clinic, Project FRONTIER, and the Care Partner Academy. Our entire team was in attendance, ensuring that attendees had direct access to educational materials and support.

By sponsoring the Main Stage at this landmark event, GIA reinforced its dedication to enhancing the well-being of older adults and caregivers through education, research, and community outreach. Our participation in this historic expo reflects our ongoing mission to promote proactive aging and brain health awareness across West Texas.



LUBBOCK RETIRED *and* SENIOR VOLUNTEER PROGRAM (RSVP)

Lubbock RSVP, housed under the TTUHSC GIA, continues to be a driving force in community engagement by providing meaningful volunteer opportunities for older adults. Under the leadership of Eva Garza, Lubbock RSVP Manager, and Joan Blackmon, Program Coordinator, the program remains dedicated to connecting seniors with impactful service roles that benefit the Lubbock community.

This year, RSVP volunteers have played a vital role in supporting local nonprofits, providing companionship to seniors, tutoring students, and assisting with community initiatives that address needs. Their contributions not only enhance the lives of those they serve but also promote a sense of purpose and fulfillment among volunteers.

As an integral part of the GIA, Lubbock RSVP aligns with our mission to support older adults in leading active, engaged, and meaningful lives. We are proud of the continued impact of RSVP and the dedication of its volunteers in making a lasting difference in the community.

RECOGNITION DINNER

On March 9, 2024, the Lubbock RSVP held its annual volunteer recognition luncheon at the TTUHSC Academic Event Center. With a lively Roaring 20s theme, the event brought together over 90 attendees, including volunteers and community partners, to celebrate the incredible contributions of the RSVP volunteers. The atmosphere was filled with joy and energy, as attendees enjoyed dancing to the vibrant music provided by Jeff McCreight.

This event was a wonderful opportunity to honor the dedication and service of the volunteers who continue to make a significant impact in the Lubbock community. The luncheon not only highlighted their invaluable work but also fostered a sense of camaraderie and appreciation among all those involved. Lubbock RSVP remains committed to recognizing and supporting the efforts of its volunteers, and this year's event was a perfect reflection of their enduring spirit and dedication to service.

RSVP STATISTICS

October 31, 2023 – October 31, 2024 are as follows:

- Total # of Volunteers as of October 31, 2023: 532
- New Volunteers since October 31, 2023: 36
- Approximate # of community served hours since October 31, 2023: 89,478.75

- Obtained Continuation award for Retired and Senior Volunteer Program (V. Lopez).
- Annual Recognition Event held on March 4, 2023 had 75 volunteers present for the dinner
- Items made by volunteers since October 31, 2023 - October 31, 2024:
 - o Lap quilts: 117
 - o Children's Blankets: 165
 - o Knitted hats and beanies: 3239
 - o Stockings for U.S. servicemen: 874
 - o Bears for Children's Connection, Children's Cancer and Texas Boys Ranch: 128
 - o Adult bibs: 38
 - o Walker pockets: 32
 - o Pot holders: 125
 - o Patches: 80
 - o Totes: 36
 - o Stuffed animals: 150

PRESIDENTIAL LIFETIME ACHIEVEMENT AWARDEES

Each year, Lubbock RSVP recognizes volunteers who have individually contributed more than 4,000 hours of volunteer service to our community.

The 2024 Presidential Lifetime Achievement Award was presented to:

Marcia Mayfield: Marcia volunteers at the University Medical Center and Friends of the Library. She began first with UMC in 2014 and added Friends of the Library in 2015.

Kathy Nale: Kathy began volunteering in 2017 with Friends of the Library which is her primary site at this time. Previously she had volunteered at the South Plains Food Bank and Word of Hope.

Kathy Graham: Kathy volunteers at Lubbock Meals on Wheels and began her service in 2010. Previously, she also volunteered with UMC. She has been a continued source of energy at LMOW.

Alyce Horsey: Alyce is our next volunteer. Alyce has volunteered continuously with Exodus Prison Ministries since 2013. Exodus is an all-volunteer group that introduces prisoners to Christ, educates them in the principles of Christian living, and encourages all to be faithful and live a life according to Christian principles.

Lee Layton: Lee joined RSVP in 2003. Previously, she had volunteered with LMOW...and recently with RSVP Comfort Corps. She assisted with crocheting squares that were put together for Afghans. The complete

Afghans were distributed to Hope Lodge, VA, SPFB, and numerous other locations for those in need. We could not have completed the items without assistance.

Susan Ebelwhite: Susan joined Friends of the Library and Lubbock Meals on Wheels in 2010. She and her husband have been active for several years. Thank you, Susan, for all of your continuous effort with both stations.

Dan Taylor: Dan is a staple in the agriculture environment in the South Plains Area. For years he always said he would not be a farmer, but somehow that idea turned around. He has been instrumental in the efforts of the FiberMax Center for Discovery in repairing ag equipment.

RSVP ADVISORY COUNCIL MEMBERS

The RSVP Advisory Council plays a crucial role in the Garrison Annual Report by representing the collective interests of our volunteers, volunteer stations, and the broader community. Comprising dedicated individuals, these Council members offer invaluable advice, support, and advocacy to ensure the effective operation of RSVP of Lubbock County. Their commitment extends to fostering positive changes within the program, generating innovative concepts, and acting as emissaries to the wider Lubbock community.

The 2024 Council includes the following leaders:

- Lauri Bandy, Trust Point Rehabilitation Hospital of Lubbock
- Lesli Griffin, High Plains Senior Care
- Kristie Jordan, Caprock Home Health Service
- Christy Martinez-Garcia, Publisher-Owner Latino Lubbock Magazine/District 1 Councilwoman
- Stacie Perez, HHSC Foster Grandparents
- Kami Shore, Carillon Senior Living
- Shawn Ward, Buddy Holly Hall of Performing Arts and Sciences





CLINICAL PROGRAMS

The Garrison Institute on Aging (GIA) has expanded its community service programs under the leadership of GIA faculty Dr. Singer to provide free mental health services through the CREATIVE MINDS, TX CARES, TX CARES-TELEHEALTH, and an Adapted Dialectical Behavioral Therapy (DBT) Skills programs. In collaboration with neuropsychologist Dr. Singer, geriatric psychiatrist Dr. Ayers, and neurologist Dr. Bertelson, the GIA under the leadership of GIA executive director Dr. Neugebauer, has created a new Comprehensive Memory Clinic to provide vital care services for persons with dementia and family members, including comprehensive assessments, educational resources, care plans, treatments and caregiver support, all under one roof.

MEMORY CLINIC

In October 2024, the Garrison Institute on Aging realized a long-standing vision with the launch of the Comprehensive Memory Clinic, addressing a critical gap in dementia care in West Texas and beyond. For over a decade, Drs. Jonathan Singer and Volker Neugebauer have championed the need for accessible, affordable, and comprehensive dementia care, recognizing that Texas had only three such clinics statewide, all located in larger metropolitan areas.

Since opening its doors, the GIA Comprehensive Memory Clinic has already served over 50 patients, providing more than 500 hours of specialized care to individuals from over 15 counties across Texas, as well as patients traveling from as far as Albuquerque, NM. The clinic delivers a full spectrum of services, including neurocognitive testing, comprehensive assessments, personalized care plans, medication management, caregiver support, and education. By bringing these essential services to Lubbock, the clinic is ensuring that patients and their families receive the guidance and support they need, close to home.

As we look ahead to 2025, the clinic is preparing for significant expansion to enhance its service capacity. Planned additions include a Physician's Assistant, a Speech Pathologist, a Licensed Clinical Social Worker, and a Patient Service Specialist. These new team members will strengthen the clinic's ability to provide holistic, patient-centered dementia care. Additionally, the clinic will play a pivotal role in the CMS GUIDE program, which launches in July 2025. As the only site in Texas west of Dallas, the clinic will offer free, comprehensive, and coordinated dementia care designed to improve the quality of life for individuals living with dementia, alleviate strain on family caregivers, and enable patients to remain in their homes and communities. Through Medicare-supported services, the program will provide care coordination, caregiver education and support, and respite care.

Through a dedicated grant, the GIA has also launched the Garrison Dementia Evaluation Program (GDEP), significantly improving access to neurocognitive assessments. Traditionally, these assessments cost upwards of \$1,500, with wait times exceeding a year. However, in 2024 alone, GDEP provided over 20 free neurocognitive assessments and more than 40 at low to no cost, all conducted within three months of referral. By reducing both financial and time barriers, the program is facilitating earlier and more accurate diagnoses, which in turn allows for timely interventions and access to emerging treatments.

The establishment and rapid growth of the GIA Comprehensive Memory Clinic mark a transformative step in dementia care for West Texas and beyond. With continued expansion and innovative programs like CMS GUIDE and GDEP, the clinic is poised to set new standards in accessible, patient-focused dementia care in the years ahead.

MENTAL HEALTH SERVICES

The GIA provides free mental health services in through the CREATIVE MINDS, TX CARES, TX CARES-TELEHEALTH, and an Adapted Dialectical Behavioral Therapy (DBT) Skills programs headed by Dr. Singer. Our programs have been delivering mental health support and interventions specifically tailored to family caregivers, such as family members, who are caring for individuals with dementia. For our TX CARES study, which is offered in person or over telehealth, participants meet with a therapist for one hour every week. To further assist caregivers, we offer CREATIVE MINDS, a respite service that was introduced this year, allowing caregivers to bring their loved ones with dementia to a designated location on Monday mornings from 9 am to 12 pm. This service offers caregivers a much-needed break from their caregiving responsibilities. The program has been so successful that there is now a plan to expand its availability to an additional day to accommodate the growing demand.

The GIA also offers a Stress Busting Dementia Program to help caregivers manage their own well-being while caring for someone with dementia. The Dementia Live program is a new initiative that gives caregivers a hands-on experience to better understand the challenges faced by those with Alzheimer's disease. Dementia Live is an immersive, hands-on training program designed to deepen the understanding and empathy of caregivers, healthcare professionals, and family members towards individuals living with dementia. Through a unique, high-impact sensory experience, participants gain valuable insights into the daily challenges faced by those with cognitive impairments.

MENTAL HEALTH SERVICES

This new program headed by GIA members Drs. Jonathan Singer and Volker Neugebauer aims to implement an individual



mental health treatment that currently showing promising results in Lubbock County to rural areas of West Texas through telehealth. More specifically, the purpose of the study is to advance our understanding and improve mental health care of an underserved population by implementing individual mental health services for family caregivers of persons with dementia in rural Texas. This program will provide rural Texas with clinical services to be accessed, serve to stimulate the newly implemented Telehealth Institute at TTUHSC, and generate vital pilot data for sustained funding including NIH grant applications. Caregivers of persons with Alzheimer's Disease (AD) and AD Related Dementia (AD/ADRD) experience a significant amount of stress and burden, as well as higher rates of depression and anxiety than their age-matched non-caregivers. Also, recent research has indicated that caregiving can impact neurocognitive functioning in caregivers of persons with AD/ADRD. However, an important knowledge gap exists about the mechanism(s) underlying this demonstrated cognitive decline in caregivers, though it has been hypothesized to be in part due to the high rates of poor psychosocial functioning in caregivers. Notably, family caregivers living in rural communities are especially susceptible to reduced psychosocial functioning.

Recent research has also indicated there is an understanding that the physical and mental well-being of one person in the dyad (i.e., caregiver and person with AD/ADRD) can greatly affect the other person. Specifically, the well-being of the person with AD/ADRD (e.g., symptom severity, attitude) has been found to negatively impact the person providing care, which can ultimately affect the quality of care provided, resulting in cascading effects for the person with AD/ADRD. However, the relationship between more severe AD/ADRD symptoms and severe behavioral and psychological symptoms has not been examined in relation to caregivers' neurocognitive functioning.

Medical conditions, psychological factors, and visual or hearing impairments can all accelerate age-related cognitive decline, while caregiving in rural areas has been found to contribute to worse psychosocial functioning, compared to caregivers living in urban areas. Further, rural caregivers have less, if any access, to any mental health treatments. Therefore, our overarching goal is to implement a telehealth program to expand our mental health services to individuals living in rural counties (e.g., Cochran County; Bailey County) in West Texas. We will also examine the dyadic relationship between family caregivers receiving telehealth services and the person with AD/ADRD and underlying biopsychosocial mechanisms. Currently, we have enrolled more than 30 family caregivers over the last 9 months in our study located in Lubbock, TX, with more than 15 participants already completing the behavioral treatment. One person stated "when I started services, I was stressed, had a lot of burden, and felt like giving up. After a little over 2 months of therapy, I have hope for my future and I can cope with my loved one's dementia. I got my life back." We also had a family caregiver who completed the mental health intervention (80 years old) who was rarely leaving the house when he started treatment because of severe depression. This last month, he sent us pictures from the top of a Colorado mountain, which was a long-term goal of his. We hope we can provide these same services to family caregivers living in rural Texas.

AWARDS *and* RECOGNITION

AWARDS

Neugebauer, V. Grover E. Murray Professorship, Texas Tech University System, 2024.

Neugebauer, V. Included on Stanford University/Elsevier Sixth Edition of the World's Top 2% of Scientist List (Ionannidis, John P.A. 2023 Elsevier Data Repository, V6).

Neugebauer, V. Susan G. Talkmitt Science Motivator Award, TTU Center for the Integration of STEM Education & Research (CISER), 2024.



Neugebauer, V. Douglas M. Stocco Scholarship/Research Award, SOM, TTUHSC, 2024.

INVITED TALKS

Neugebauer, V. (2024, October) mGlu and neuroimmune signaling in the amygdala in pain modulation. 11th International Meeting on Metabotropic Glutamate Receptors: From the bench to the clinic. Taormina, Italy.



Singer, J. (2024, October). Community Outreach and Engagement. Texas Tech University. Teaching Learning & Professional Development Center. Lubbock, TX

Singer, J. (2024, September). Interventions for Persons with Neurodegenerative Disorders and their Care Partners in Urban and Rural Texas. Purdue University, Symposium Series.

Singer, J. (2024, September). Dementia and Caregiving. Goodwill Industries of Northwest Texas.



Singer, J. (2024, June). Living a Valued Centered Life While Being A Prepared Care Partner For A Person With A Life Limiting Illness. South Plains Association – Governments (SPAG) Caregiver Conference. Lubbock, TX.

Neugebauer, V. (2024, May) Amygdala neuroplasticity and neuroimmune signaling. Pain Mechanisms and Therapeutics Conference. Verona, Italy.

Decourt, B. (2024, April) Translational research on dementia: from drug testing to identifying risk factors. Center of Excellence for Translational Neuroscience and Therapeutics, Texas Tech University Health Sciences Center, Lubbock, TX.

Lawrence, J. J. (2024, April) Mental Health, Health Disparities, and Vitamin D. First Friday Lunch, Honors College, Texas Tech University, Lubbock, TX.

Lawrence, J. J. (2024, April) Vitamin A nutrigenomics and Alzheimer's disease pathogenesis: emerging multi-level preclinical and human studies. Eighth Annual Center for Translational Neuroscience and Therapeutics Conference, Texas Tech University Health Sciences Center, Lubbock, TX.

Lawrence, J. J. (2024, April) KCNIP1: A Potential Cellular Mechanism Underlying Cellular Hyperexcitability in Alzheimer's Disease. Center for Membrane Protein Research XVI Annual Symposium, Texas Tech University Health Sciences Center, Lubbock, TX.

Decourt, B. (2024, March) Antimicrobial Agents to Treat Alzheimer's Disease? Department of Immunology and Molecular Microbiology, Texas Tech University Health Sciences Center, Lubbock, TX.

Singer, J. (2024, February). Understanding Family Caregivers of Persons with Alzheimer's disease Burden, Stress, and Pre-death grief. 3rd Annual Alzheimer's Caregiver Conference. Lubbock, TX.

Singer, J. (2024, February). Investigating the Relationship Between Stress and Neurocognitive Functioning in Persons with Dementia and their Caregivers: A Dyadic Intervention Study. Annual Meeting of the Texas Alzheimer's Research and Care Consortium. Austin, TX.

Singer, J. (2024, January). Interventions for Caregivers – Tx CARES and CREATIVE MINDS. RICE Academy, Texas Tech Health Sciences Center. Lubbock, TX.

RECOGNITION

Lawrence, J. J. (2024) Moderator, Institute for One Health Innovation Neurological Strategy Workshop.

Neugebauer, V. (2024) Organizing Committee Member, 11th International Meeting on Metabotropic Glutamate Receptors.

Neugebauer, V. (2024) Organizing Committee Member, Pain Mechanisms and Therapeutics Conference.

Neugebauer, V. (2024) Organizer, 8th Annual Symposium, Center of Excellence for Translational Neuroscience and Therapeutics.

Neugebauer, V. (2024) Grant Reviewer (ad-hoc), NIH, ZRG1 ICN-T (02).

Neugebauer, V. (2024) SOM Dean's Executive Leadership Team.

NEWS RELEASES

Educational Activities for the LAY Public



“From Bedside to Bench”, Probe – Advancing knowledge through innovative research. In: Pulse 34, 2024; <https://pulse.ttuhsc.edu/issue/winter-2024/#bedsidebench>.

“Twelve Full-Time TTUHSC Researchers Named to Latest World’s Top 2% of Scientists Rankings.” In: TTUHSC Statline Daily Dose, by Mark Hendricks, June 13, 2024; <https://dailydose.ttuhsc.edu/2024/june/top-two-percent-scientists-ranking.aspx>.

“TTUHSC doctor honored as Grover E. Murray Professor. TTUHSC professor receives highest faculty honor.” In: KCBD News Channel 11, by KCBD Staff, August 8, 2024; <https://www.kcbd.com/2024/08/08/ttuhsc-doctor-honored-grover-e-murray-professor>.

“Board of Regents Approve Appointment of Grover E. Murray Professor. TTUHSC Professor Receives Highest Faculty Honor.” In: TTUHSC Statline Daily Dose, by Suzanna Cisneros, August 9, 2024; <https://dailydose.ttuhsc.edu/2024/august/grover-e-murray.aspx>.

Noon Notebook: “TTUHSC’s Garrison Institute on Aging to Host Fifth Alzheimer’s Awareness Symposium.” In: KCBD

News, by Julie Castaneda, October 29, 2024; <https://www.kcbd.com/2024/10/29/noon-notebook-ttuhscs-garrison-institute-aging-host-fifth-alzheimers-awareness-symposium/>.

Noon Notebook: “Free Alzheimer’s Symposium during Awareness Month.” In: KCBD News, by Karin McCay, November 6, 2024; <https://www.kcbd.com/2024/11/07/free-alzheimers-symposium-during-awareness-month/>.



Trends and Friends: “The TTUHSC Garrison Institute on Aging is hosting three events in November on Alzheimer’s Disease.” In: Everything Lubbock, by Brandi Driggers, November 7, 2024; <https://www.everythinglubbock.com/news/trends-and-friends/the-ttuhsc-garrison-institute-on-aging-is-hosting-three-events-in-november-on-alzheimers-disease/>.

TTUHSC Health Check: “Memory Loss: Help for Patients and Their Caregivers.” In TTUHSC Health Check, by Melissa Whitfield, November 14, 2024; <https://www.ttuhsc.edu/communications-marketing/media/podcast/default.aspx>.

Trends and Friends: “The New Memory Clinic at the Texas Tech University Health Sciences Center’s Garrison Institute on Aging opened in October.” In: Everything Lubbock, by Brandi Driggers, December 10, 2024; <https://www.everythinglubbock.com/news/trends-and-friends/the-new-memory-clinic-at-the-texas-tech-university-health-sciences-centers-garrison-institute-on-aging-opened-in-october/>.



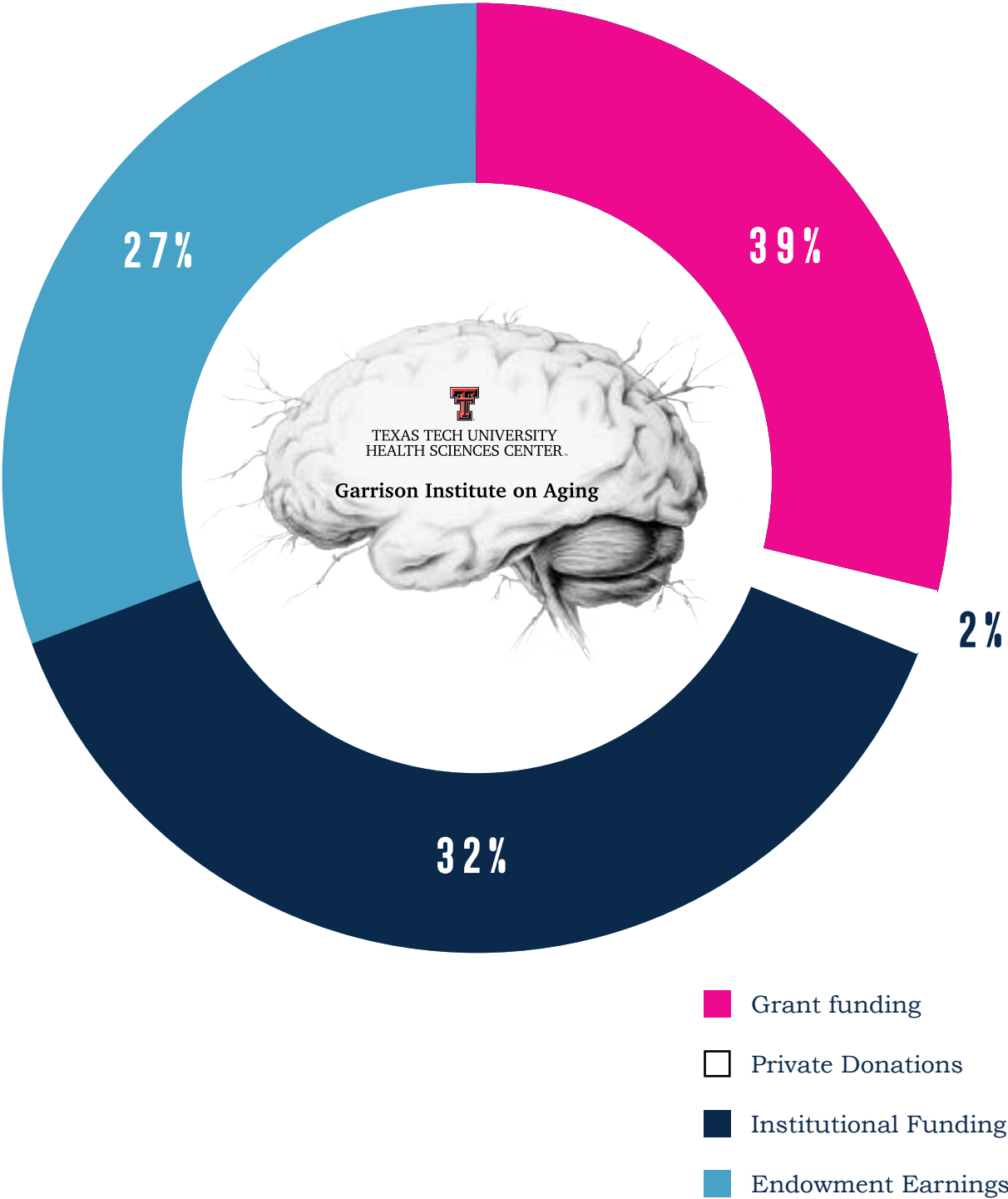
Noon Notebook: “TTUHSC’s Memory Clinic.” In: KCBD News, by Julie Castaneda, December 13, 2024; <https://www.kcbd.com/video/2024/12/13/noon-notebook-ttuhscs-memory-clinic/>.



FINANCIALS

The Garrison Institute on Aging (GIA) is funded by a combination of competitive grants, institutional funding, and endowment earning (Fig. 1). The GIA is committed to securing external funding through grant applications for collaborative innovative projects. A number of grants have been obtained by GIA faculty for preclinical and clinical studies (see **COLLABORATIVE RESEARCH PROJECTS ON AGING, ALZHEIMER'S DISEASE, AND OTHER NEURODEGENERATIVE DISEASES AND BRAIN DISORDERS**). Through a generous endowment provided by the Garrison family, the GIA receives a secure flow of income from the earnings on the endowment, which is greatly appreciated and provides valuable funding for a variety of research projects, community outreach and education programs, and the GIA Brain Bank. Other generous donors include the Newby and Pickering families. We are also very grateful for the continued support from the Texas Tech University Health Sciences Center administration and leadership, particularly the Office of Research.

Funding sources for GLA activities (FY2024)





TEXAS TECH UNIVERSITY
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Garrison Institute on Aging