



CHARTING A NEW HORIZON



TEXAS TECH UNIVERSITY
HEALTH SCIENCES CENTER™
Garrison Institute on Aging

2009 ANNUAL REPORT

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DIRECTOR'S REPORT



Paula Grammas, Ph.D.

“

Although solving the complex puzzle that is Alzheimer's disease is difficult, everyday our work identifies a new piece of the puzzle.

We believe a world without Alzheimer's disease is just over the horizon.

”

Paula Grammas, Ph.D.
GIA Executive Director

Dear Friends of the Garrison Institute on Aging,

2009 has been another busy and exciting year at the Garrison Institute on Aging (GIA). The Institute continues to make great strides in research, education and community outreach. Our scientists have published cutting-edge research and new scientific findings in over twenty publications in 2009 in premier scientific journals, such as the *American Journal of Pathology* and the *Journal of Neuroinflammation*. On the education front, the Geriatric Education Training Academy trained approximately 100 new Certified Nurse Aids (CNA) in 2009 bringing the program's total to over 2,000. From the community outreach division, GET FIT Lubbock recently wrapped up its fifth season and the results have community members well on their way to a healthier lifestyle with a recorded total of over 77,000 hours of exercise and more than 9,000 pounds lost.

The strong and dynamic spirit of West Texas' aging population is at the heart of the Texas Tech University Health Sciences Center's (TTUHSC) aging initiative. The GIA, as the keystone for the aging initiative, is helping seniors successfully age and extend the years of quality life through a multifaceted approach. We are investigating the causes of neurodegenerative disease, preparing health care professionals for the growing demands of geriatric care, and educating the community about how to delay the onset of Alzheimer's disease. Growing old is inevitable; however, we want you to know that healthy aging and a good quality of life in the golden years are possible.

I'd like to personally thank the people of West Texas for the encouragement and support I have received since arriving at TTUHSC five years ago. Through the generosity of our friends and donors, the Institute is able to continue the pursuit of new knowledge through research and to develop new programs to better serve the community.

As Eleanor Roosevelt once said, "The future belongs to those who believe in the beauty of their dreams." Let's keep working and dreaming together.

With gratitude,

A handwritten signature in cursive script that reads "Paula Grammas".

Paula Grammas, Ph.D.
GIA Executive Director



Paula Grammas, Ph.D.

GIA Executive Director
Mildred and Shirley L. Garrison Chair in Aging
Professor, TTUHSC Department of Neurology

Where were you born/raised?
Far Rockaway, New York, NY

Where did you get your degrees?
B.A. Barnard College
M.S. New York Medical College
Ph.D. Wayne State University

What do your degrees specialize in?
B.A. in Biology and Political Science
M.S. in Experimental Pathology
Ph.D. in Experimental Pathology

How many years have you worked for TTUHSC?
5 years

What do you enjoy most about living in West Texas?
Friendly people and the night sky

Alzheimer's disease is an irreversible, progressive brain disorder that slowly destroys memory, thinking skills and eventually even the ability to carry out the simplest tasks such as; eating, walking, or remembering your own children's names. The number of people with Alzheimer's disease is projected to sharply increase from more than 5.3 million today to an estimated 16 million by 2050. Dr. Grammas and her research team are currently funded by three National Institutes of Health (NIH) grants, totaling over \$3 million. These research projects include; "Vascular Inflammation in the Aging Brain," which tests the hypothesis that age-related inflammatory changes in brain blood vessels contribute to age-related pathology in the brain; "Vascular-mediated Neuronal Cell Death in Alzheimer's," which focuses on the theory that failed signaling mechanisms in brain blood vessels result in the release of toxic proteins that kill brain nerve cells; and "Is there a Link between Alzheimer's and Atherosclerosis?," where the idea that risk factors involved in atherosclerosis (a disease affecting arterial blood vessels) are also linked to the development of vascular-mediated neuronal cell death in Alzheimer's disease is explored. By identifying a mechanistic cascade linking cardiovascular risk factors, specific proteins and brain nerve cell death, Dr. Grammas is providing a unique framework to study the pathogenesis of Alzheimer's which may lead to novel therapeutic approaches for the prevention and treatment of this disease.



Sid O'Bryant, Ph.D.

Director Rural Research

F. Marie Hall Institute for Rural and Community Health

Assistant Professor, TTUHSC Department of Neurology

GIA Director of Geriatric Community Outreach

Just like the rest of the human body, the brain changes as it ages. Most people notice some slowed thinking and occasional problems with remembering certain things. It's hard for family doctors, let alone relatives and friends, to recognize when forgetfulness might hint at the early stages of Alzheimer's disease. However, serious memory loss, confusion and other major changes in the way our minds work are not a normal part of aging. They may be a sign that brain cells are dying. Dr. O'Bryant and researchers from four Texas universities hope to find telltale signs of Alzheimer's disease hidden in a patient's blood. By joining a consortium of four other Texas institutions - Baylor College of Medicine, The University of Texas Southwestern Medical Center, the University of North Texas Health Sciences Center and the University of Texas Health Science Center at San Antonio - the Lubbock researchers recently secured part of a \$6.85 million grant to find Alzheimer's disease "markers" in the blood and genes, and use them to improve diagnosis and treatment. His work on Alzheimer's disease, as well a broader study (Cochran County Aging Study) on the health of people in two rural West Texas counties, earned Dr. O'Bryant a 2009 Early Career Award from the National Academy of Neuropsychology, which recognizes research excellence achieved within 10 years of completing formal training. "Our currently available medications for Alzheimer's disease slow progression, which is very important in prolonging life quality but they do not halt or reverse the disease process," Dr. O'Bryant said. "We are hoping that a better understanding of the biological pathways associated with the disease will lead to novel treatments that halt progression."

Where were you born/raised?

Galvez, Louisiana

Where did you get your degrees?

B.S. Louisiana State University,
Ph.D. University of Albany, State
University of New York

What do your degrees specialize in?

Ph.D. in Clinical Psychology with
emphasis in Neuropsychology

How many years have you worked for TTUHSC?

4 years

What do you enjoy most about living in West Texas?

I first-and-foremost love the people. I have truly enjoyed all of the opportunities to work with the people of Lubbock and the surrounding rural communities. I have the utmost respect for rural West Texans as they provide an incredible infrastructure that allows the rest of Texas to prosper upon.



Xingjia Wang, Ph.D.

GIA Director of Trainee Development
Associate Professor, TTUHSC Department of Neurology

Where were you born/raised?

China

Where did you get your degrees?

B.S. Sichuan Agricultural University,
Sichuan China

M.S. Sichuan Agricultural University,
Sichuan China

Ph.D. Texas Tech University

What do your degrees specialize in?

B.S. in Animal Science

M.S. in Animal Science

Ph.D. in Cell Biology and
Biochemistry

How many years have you worked for TTUHSC?

19 years

What do you enjoy most about living in West Texas?

Clear, blue sky

Xingjia Wang and his research team are focusing on the link between the male sex hormone testosterone and Alzheimer's disease. Testosterone production increases at the onset of puberty and decreases rapidly after age 50 (to 20–50% of peak level by age 80). It is believed that the loss of testosterone with aging contributes to age-associated conditions and diseases. Dr. Wang and his research team have been focusing on proteins associated with testosterone function including cyclooxygenase-2 and the StAR protein. Exciting results from Dr. Wang's group demonstrate that natural compounds found in food delay age-related decline in testosterone biosynthesis. These data suggest that novel dietary strategies based on this work could improve the health of men as they age.

Research Associate of Dr. Wang Wins Best Poster Award

Akhilesh Pandey, Ph.D. Research Associate of Dr. Wang at the GIA, was awarded by the President of Endocrine Society for the esteemed Best Poster Award at the Endo2008 Trainee Poster Competition at the 90th Annual Meeting of the Endocrine Society in San Francisco, CA for "An Autocrine Loop Involved in Cyclooxygenase-2-Dependent Inhibition of Steroidogenic Acute Regulatory Gene Expression in MA-10 Mouse Leydig Cells."



Mark Lyte, Ph.D.

GIA Director of Translational Research
Professor, TTUHSC School of Pharmacy

Mark Lyte and his research team are exploring the possible clinical applications of “Microbial Endocrinology,” an approach to research that was pioneered by Dr. Lyte. This field seeks to understand how humans interact with microorganisms both in us (such as in our gut) as well as in the environment. Interestingly, Dr. Lyte’s group has shown in experimental animals that changing the composition of bacteria in the gut can actually affect memory and learning. Dr. Lyte is working on using “Microbial Endocrinology” as a basis for improved treatment of age-associated neurodegenerative disorders characterized by defects in memory and learning. Another important clinical application of “Microbial Endocrinology” is improved diagnosis of infections in immunocompromised (Incapable of developing a normal immune response, usually as a result of disease or malnutrition) patients. Dr. Lyte and his research team have shown that they can increase the ability to detect antibiotic-damaged bacteria in the laboratory by adding specific hormones to the medium that is used for laboratory diagnosis. Based on this preliminary work, they have initiated a double-blind trial in patients to see if they can improve the laboratory detection rate for infections in immunocompromised patients.

Where were you born/raised?

New Jersey

Where did you get your degrees?

B.S. Fairleigh Dickinson University, NJ

Ph.D. Weizmann Institute of Science Rehovot, Israel

What do your degrees specialize in?

B.S. in Clinical Laboratory Studies

Ph.D. in Membrane Biophysics of Immune Cells on Aging
Board Certified in Clinical Laboratory Medicine

How many years have you worked for TTUHSC?

4 years

What do you enjoy most about living in West Texas?

Love the tumbleweeds and the fact it doesn’t snow!



Inna Kruman, Ph.D.

CH Foundation Chair in Parkinson's Disease (GIA)
Associate Professor, TTUHSC Department of Neurology

Inna Kruman's research interests focus on the biochemical mechanisms that control brain nerve cell death. Nearly all cells, including brain nerve cells, contain a set of internal suicide cues or pathways. These pathways are critical for the maintenance of neuronal cellular homeostasis. However, over-activation of these "suicide pathways" can result in unwanted brain nerve cell death and lead to neurodegenerative diseases such as Alzheimer's disease. Dr. Kruman's current work focuses on specific suicidal pathways such as the "DNA damage response" and "cell cycle machinery" and how these biochemical pathways are regulated in death and disease. Dr. Kruman's goal is to identify the mechanism that determines how and why brain nerve cells die. Understanding how these suicide pathways are regulated could lead to new treatments aimed at preventing brain nerve cell death in Alzheimer's disease and other age-associated neurodegenerative diseases.

Where were you born/raised?

Moscow, Russia

Where did you get your degrees?

Ph.D. Moscow State University

What do your degrees specialize in?

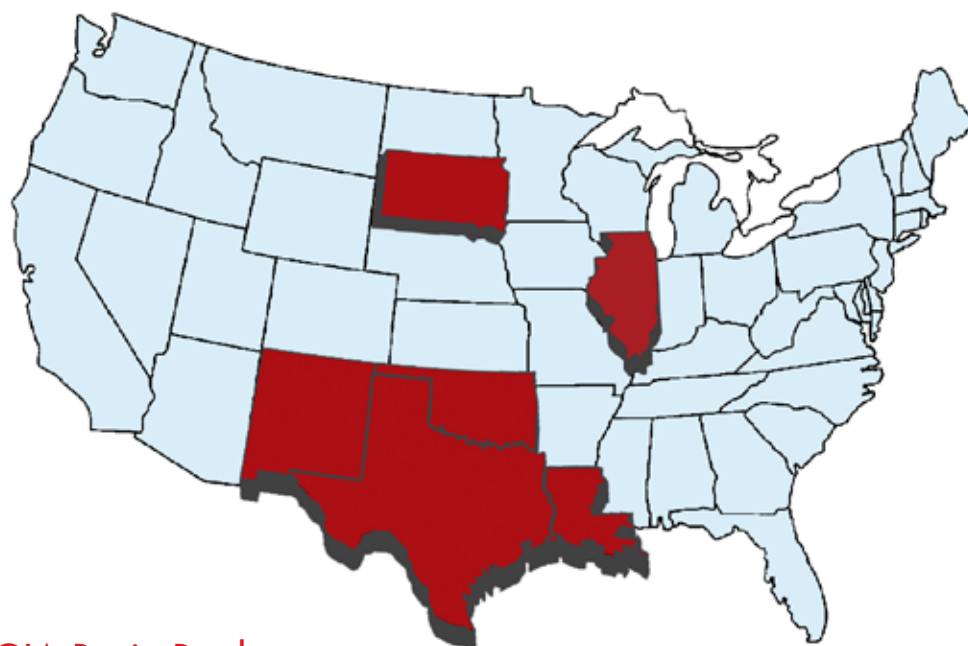
Ph.D. in Cellular Biology

How many years have you worked for TTUHSC?

2 years

What do you enjoy most about living in West Texas?

Enjoy the small town feel of Lubbock. Not so much hustle and bustle of big cities like New York.



■ Since January 2007, 58 brains have been donated to the GIA Brain Bank from around the United States.

GIA Brain Bank

In order for researchers and medical practitioners to fully understand Alzheimer's disease, a neuropathology diagnosis on the brain must be performed. Since the creation of the Brain Bank, 58 brains have been donated from around the United States. This program helps families of dementia patients by providing a free brain autopsy and also banks tissue for qualified researchers studying dementia-related diseases, such as Alzheimer's.

The GIA Brain Bank provides the service of a brain autopsy, which is the

only way to confirm clinical diagnosis of Alzheimer's disease, at no cost to the patient's family. Just as important as tissue with dementia, non-dementia or "control tissue" is also needed desperately for research. The brain tissue is retained in the laboratory to use and share with other qualified scientific researchers across the country studying diseases related to dementia.

The Brain Bank is a highly recognized program whose existence is vital to important research findings and publications. In 2009, representatives from the Brain Bank

were asked to give 11 Brain Bank lab tours and six presentations to various community groups including; Crosbyton Health Advisory Board, Lubbock Lion's Club, and Texas Tech University Sports Science College.

This program is funded solely through private contributions. Families who have donated to the Brain Bank want to memorialize a loved one and are motivated by personal experience with Alzheimer's disease. Brain donation is a legacy for future generations.

Andrew Dentino, M.D., F.A.C.P., A.G.S.F., F.A.P.A., C.M.D.

GIA Director of Clinical Geriatrics

Andrew Dentino, M.D., F.A.C.P., A.G.S.F., F.A.P.A., C.M.D., GIA Director of Clinical Geriatrics has been instrumental in shaping the minds and helping the student scholars experience what the field of geriatrics has to offer. His guidance and enthusiasm are what make this program so successful. In addition to serving as a Student Scholars' mentor, Dr. Dentino brings a wide array of experience while serving as Bernhard Mittermeyer Endowed Chair of Geriatrics; chief of the Division of Geriatrics and Palliative Medicine; professor of internal medicine, family and community medicine and psychiatry; and executive medical director of the Mildred and Shirley L. Garrison Geriatric Education and Care Center.

Student Scholars in Geriatrics

The Student Scholars in Geriatrics Program was established to develop a core group of students from allied health sciences, medicine, nursing and pharmacy who have a long-term commitment to advancing health care for older adults and are actively engaged in projects around the community designed to improve the quality of health care for the aging population.

2009 Student Scholars in Geriatrics

- Audra Lewis Goodwin - Nursing
- Lisa Antonson - Nursing
- Madelyne Cearley - Pharmacy
- Abigail Kirk - Allied Health Sciences
- Eser Graham-Marski - Allied Health Sciences
- Rebecca Tompkins - Allied Health Sciences
- Camille Stephens - Medicine
- Daniel Rhoads - Medicine

“
The Geriatric Student Scholars Program provides a link to the future combined with the efforts of the present to advance elderly wellness and enhance tomorrow's health professionals today.
”

Dr. Andrew Dentino
Director of Clinical Geriatrics

American Geriatric Society (AGS) Student Chapter

The AGS strives to enhance the visibility of geriatric medical care, and to provide educational programs on geriatric health care. Student chapters work toward the goals of the society with particular emphasis on:

- Encouraging interest in geriatrics among faculty and students in various health care professions concerned with the care of the elderly.
- Advocating interprofessional curriculum development in the Health Sciences Center schools.
- Including geriatrics in the general curriculum and in elective course offerings and interprofessional programs.
- Developing educational opportunities in geriatrics and making them accessible to interprofessional audiences at TTUHSC and practicing health professionals throughout West Texas.
- Promoting educational activities throughout West Texas and TTUHSC's network of campuses.



Geriatric Education and Training Academy (GETA)

GETA's mission is to enhance the health of older persons by advancing best practices and professionalism in long-term care workforce training. The programs are targeted to advance geriatric care and professionalism, improve staff recruitment and retention and improve the quality of care in nursing homes.

Certified Nurse Aid (CNA) Training Program

The CNA training expands the number of well-trained, qualified and committed CNAs available to work in long-term care, specifically in rural and under-served areas. The 80-hour CNA certification course includes: clinical training at a nursing home, review sessions prior to NACES testing, courses taught by a nursing facility, and advanced training for CNAs in conflict resolution, end-of-life care, strokes, nutrition, abuse, Alzheimer's disease and more. GETA offers CNA training, CNA advanced training and a CNA refresher course.

The Academy has trained approximately 100 new CNAs. These graduates had a 100% pass rate on the state exam! There are many students that have said the information they learned in the CNA program helped them tremendously in their nursing school experience. The goal for

the program is to make it more available to rural facilities through technology such as webinars, Skype video, and teleconferences. "Eventually, we want to expand our relationships with other facilities, perhaps hospitals, to give our students a broader clinical experience," said Diane Botello, CNA Nurse Educator and Training Program Coordinator.

Collaborative Career Ladder Program aims to increase CNA job satisfaction

As Baby Boomers age, the need for long term care steadily rises. Shortages at all care levels impact the quality of resident care, most especially in the area of certified nurse aides (CNAs). Texas, along with many other states, has experienced a high rate of turnover among CNAs, sometimes as high as 100% per year according to the American Association of Homes and Services for the Aged (AAHSA). However, research has shown that a successful career ladder program for CNAs can reduce turnover rates and increase job satisfaction.

The GIA, in collaboration with the TTUHSC Anita Thigpen Perry School of Nursing, has developed an innovative course of study designed not only to further educate CNAs in geriatric care, but also to provide them with a solid foundation in basic life and work place skills such as; employee accountability, budgeting, time management, communication skills, dementia care, and diabetes care.

At the present time, the GIA is testing a certified nurse aide career ladder program in two long-term care facilities in Lubbock; The Plaza at Lubbock and at the Mildred and Shirley L. Garrison Geriatric Education and Care Center. The facilities serving as testing sites hope that providing this program for their CNAs will not only empower them to perform at a higher level, but also to inspire them to continue to invest in themselves.

“... your CNA class was an amazing and humbling experience. I’m used to the fast pace, critical care of neonatal/pediatrics. I never knew I would love taking care of the elderly. This was totally life changing for me. Just when you think you have your plan laid out...God puts another plan in your path. Thank you for what you do!”

— Susi Mitchell, respiratory therapist in Pediatric ICU for the last 20 years, completed her CNA training and now pursuing her Bachelors of Science in Nursing

COMMUNITY OUTREACH



GIA Healthy Lubbock Initiative

The Healthy Lubbock Initiative seeks to make Lubbock and its surrounding communities a healthier place to live by supporting and encouraging people to improve nutrition, increase physical activity, and exercise regularly to promote wellness.

Healthy Lubbock Day draws big crowd

Close to 700 people, including about 55 health and wellness vendors, were on hand for Healthy Lubbock Day 2009, June 6 at Maxey Park. This year's event included many new features such as a 1-mile walk to kick off the event, belly dancing demonstrations and Texas' largest Zumba class.

Free health screenings were provided by Bodyworks, Covenant, Texas Tech School of Nursing, United Supermarkets, Walmart and others. Community Health Centers of Lubbock (CHCL) provided free child immunizations.



The event is organized by the Healthy Lubbock Coalition, a program of the Garrison Institute on Aging. Other sponsoring participants include Betenbough Homes, Bodyworks Family Sports Centers, CHCL, City of Lubbock Department of Parks and Recreation, First Care, Humana Market Point, Texas Department of State Health Services, Texas Tech Physicians, Texas Tech Rec Sports and UMC Health System.



Get FiT Lubbock IV Launches

The Garrison Institute on Aging in September 2009 launched GET FiT Lubbock IV, a community fitness challenge that is a program of the Healthy Lubbock Initiative. The contest took place Sept. 28 through Nov. 23.

GET FiT Lubbock IV, presented by Bodyworks Family Sports Centers, was an 8-week challenge in which teams of two to four participants earned points for minutes of exercise, weight lost and attendance at community health events. The GET FiT Lubbock competitions include exercise and weight loss activities such as GET FiT Tennis Rally sponsored by USTA Texas Section and spinning classes at Bodyworks. Health and fitness professionals were also on hand throughout the competition for encouragement and support through one-on-one consultations and free GET FiT Lubbock lectures. GET FiT Lubbock IV featured 101 teams who exercised a combined 6,835 hours and lost 864 pounds.

To date, GET FiT Lubbock has recorded a total of over 77,000 hours of exercise and more than 9,000 pounds lost since its first season.

Additional sponsors for GET FiT Lubbock IV include; Betenbough Homes, Calvert Home Health Care, Curves, footTech, Hub City Aviation, KFYO, Kool 98, 99.5 KQBR, and 102.5 KISS FM, Lubbock Family Chiroprac-

tic, Premier Sportsplex, Raider Ranch, The Falls Tennis and Athletic Club, The Shropshire Agency, TTU Physicians of Lubbock, Texas Department of State Health Services, UMC Activities Center, and YWCA.



COMMUNITY OUTREACH



Heart and Stroke City Recognition Program Invites Healthy Lubbock to Join Board

With the guidance of the Texas Department of State Health Services (DSHS), the Healthy Lubbock Initiative is establishing programs to educate the Lubbock community about the prevention of cardiovascular disease and stroke. Through this collaboration with the Texas DSHS and other local organizations, we are able to combine resources and reassure the Lubbock community that Lubbock is a healthier and safer city.

The Heart and Stroke City Recognition Program recognizes cities for having environmental and policy infrastructure and practices in place that are public health priorities for reducing the risk of cardiovascular disease and stroke. Cities involved in the program are assessed on ten priority community-based policy, systems, and environmental change indicators that are vital to reducing the burden of heart disease and stroke. This program was developed in 2003 under the leadership of the Texas Council on Cardiovascular Disease and Stroke and a group of public and private organizations dedicated to reducing these health risks in Texas.

GIA Educates the Lubbock Community

The Lecture Series on Healthy Aging is a monthly educational program for the public to learn more about innovative research and aging health topics of interest to seniors. The lectures take place September through May at the TTUHSC Academic Classroom Building and focus on the importance of taking care of the body, mind, and spirit at any age. In 2009 the audience consisted of mostly retired seniors, but many other health professionals, HSC students and researchers also attended the lectures to hear a variety of experts speak on how to improve their individual health and fitness. "The Lecture Series strives to educate the community on issues that concern the process of healthy aging. This free

lecture every month covers a wide array of topics from tips to prevent heart disease and stroke to nutritional advice at every stage of your life," said Jason LeMaster, GEC coordinator.

Lecture Topics Covered in 2009

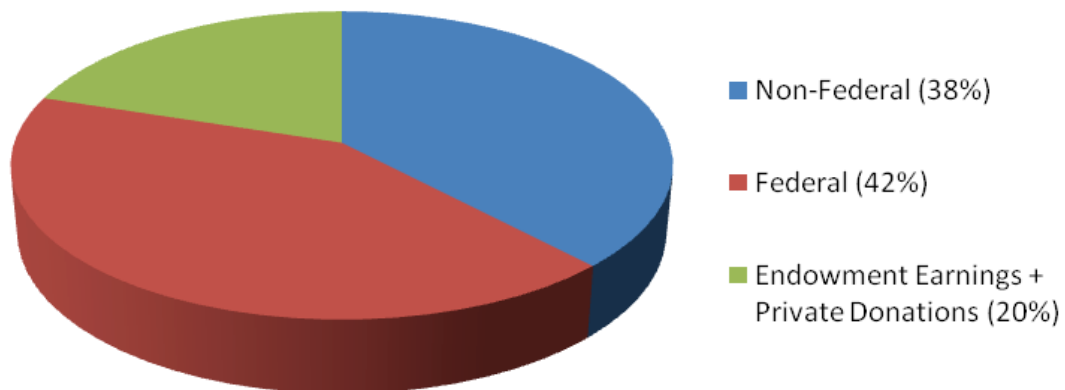
- "Balance and Gait"
- "Diet and Obesity in Aging"
- "Chronic Lung Disease in Older Patients"
- "Pain Management in Older Adults"
- "Smart Financial Choices in Retirement"
- "Exercise for Life"
- "Brain Food"
- "Living Life to the Fullest"

FINANCIAL REPORT



The Garrison Institute on Aging was renamed in 2005 to honor and recognize the generosity and commitment of Shirley L. Garrison in the fight against Alzheimer's disease. The importance and quality of research at GIA is attested to by the success of Institute researchers attracting competitively awarded grants from the National Institutes of Health which account for 42% of the annual budget. Approximately 38% of Institute support is comprised of non-federal funding which include institutional funds and legislative appropriations. Private foundations, including the Garrison Family Foundation, and individual donors have contributed roughly 20% of GIA revenue for 2009.

Funding Sources Fiscal Year 2009



Total Revenue for FY 2009 - \$2,254,619.80

“
Any gift, whether small or large, can have a significant impact
on our efforts to advance research and education.
”

Dr. Paula Grammas,
GIA Executive Director

1. Sanchez A, Vittal Rao, H, Grammas P. PACAP38 protect rat cortical neurons against the neurotoxicity evoked by sodium nitroprusside and thrombin. *Regulatory Peptides*, 152:33-40, 2009.
2. Vittal Rao H, Thirumangalakudi L, Grammas P. Cyclin C and cyclin dependent kinases 1,2, and 3 in thrombin-induced neuronal cell cycle progression and apoptosis. *Neuroscience Letters*, 450:347-350, 2009.
3. Thirumangalakudi L, Vittal Rao H, Grammas P. Involvement of PGE2 and PGDH but not COX-2 in thrombin-induced cortical neuron apoptosis. *Neuroscience Letters*, 452:172-175, 2009.
4. Tripathy D, Grammas P. Acetaminophen protects brain endothelial cells against oxidative stress. *Microvascular Research*, 77:289-296, 2009.
5. Tripathy D, Grammas P. Acetaminophen inhibits neuronal inflammation and protects neurons from oxidative stress. *Journal of Neuroinflammation*, 6:10, 2009.
6. Pandey AK, Yin X, Schiffer RB, Hutson JC, Stocco DM, Grammas P, Wang X. Involvement of the Thromboxane A2 receptor in the regulation of steroidogenic acute regulatory gene expression in Murine Leydig cells. *Endocrinology*, 7:3267-73, 2009
7. Sanchez A, Tripathy D, Grammas P. RANTES release contributes to the protective action of PACAP38 against sodium nitroprusside in cortical neurons. *Neuropeptides*, 43:315-320, 2009.
8. Pandey A, Yin X, Stocco D, Grammas P, Wang X. Blocking L-type calcium channels reduced the threshold of cyclic AMP-induced steroidogenic acute regulatory gene expression in MA-10 mouse Leydig cells. *Journal of Endocrinology*, In Press (Epub ahead of print).
9. Tripathy D, Thirumangalakudi L, and Grammas P. RANTES upregulation in the Alzheimer's disease brain: a possible neuroprotective role. *Neurobiology of Aging* 1:8-16, 2010.
10. Yin X, Wright J, Wall T, Grammas P. Brain endothelial cells synthesis neurotoxic thrombin in Alzheimer's disease. *American Journal of Pathology*, In Press.
11. Sanchez A, Wadhani S, Grammas P. Multiple neurotrophic effects of VEGF on cultured neurons. *Neuroscience Research*, In Press.
12. Tomashevski A, Webster DR, Grammas P, Gorospe M, Kruman I. Cyclin C-dependent cell cycle entry is required for activation of nonhomologous end joining DNA repair in postmitotic neurons. *Cell Death Differentiation*, In Press.
13. Lyte M. Microbial endocrinology as a basis for improved L-DOPA bioavailability in Parkinson's patients treated for *Helicobacter pylori*. *Medical Hypotheses*, (Epub ahead of print) 2009.
14. Lyte M. The microbial organ in the gut as a driver of homeostasis and disease. *Medical Hypotheses*, (Epub ahead of print) 2009.
15. Pullinger GD, Carnell SC, Sharaff FF, van Diemen PM, Dziva F, Morgan E, Lyte M, Freestone PPE, Stevens MP. Norepinephrine augments Salmonella-induced enteritis in a manner associated with increased net replication but independent of the putative adrenergic sensor kinases QseC and QseE. *Infection and Immunity*, (Epub ahead of print) 2009.
16. Sandrini SM, Shergill R, Woodward J, Muralikuttan R, Haigh RD, Lyte M, Freestone PP. Elucidation of the mechanism by which catecholamine stress hormones liberate iron from the innate immune defense proteins transferrin and lactoferrin. *Journal of Bacteriology*, (Epub ahead of print) 2009.
17. Lyte M. Reciprocal gut-brain evolutionary symbiosis provokes and amplifies the postinjury systemic inflammatory response syndrome. *Surgery*, 146:950-954, 2009.
18. Li W, Lyte M, Freestone PP, Ajmal A, Colmer-Hamood JA, Hamood AN. Norepinephrine represses the expression of *toxA* and the siderophore genes in *Pseudomonas aeruginosa*. *FEMS Microbiology Letters*, 299:100-109, 2009.
19. Lyte M, Gaykema RPA, Goehler LE. Behavior modification of host by microbes. *Encyclopedia of Microbiology*, 4th edition (Moselio Schaechter, Editor), Oxford: Elsevier, 121-128, 2009.
20. Li W, Dowd SE, Scurlock B, Acosta-Martinez V, Lyte M. Memory and learning behavior in mice is temporally associated with diet-induced alterations in gut bacteria. *Physiology and Behavior*, 96:557-567, 2009.



21. O'Bryant SE, Lacritz L, Hall J, Waring S, Chan W, Khodr ZG, Massman PJ, Hobson V, Cullum. CM Validation of the New Interpretive Guidelines for the Clinical Dementia Rating Scale Sum of Boxes Score in the NACC Database. *Archives of Neurology*, In Press.
22. Weichmann A, Hall J. O'Bryant SE. Utility of the four point scoring of the Clock Drawing Task in differentiating forms of cognitive impairment. *Psychological reports*, In Press.
23. O'Bryant SE, Waring SC, Hobson V, Hall JR, Moore CB, Bottiglieri T, Massman P, Diaz-Arrastia, R. Decreased C-Reactive Protein Levels in Alzheimer's Disease. *Journal of Geriatric Psychiatry and Neurology*, In Press.
24. Hobson VL, Hall JR, Humphreys-Clark JD, Schrimsher GW, O'Bryant SE. Identifying functional impairment with scores from the Repeatable Battery for the Assessment of Neuropsychological Status (RBANS). *International Journal of Geriatric Psychiatry*, In Press.
25. Gong G, Braddock E, Zhang Y, Hudson C, Lefforge D, O'Bryant SE. Trend and racial disparities in infant mortality rates in Texas from 1990 to 2004. *Journal of the National Medical Association*, In Press.
26. Gong G, Braddock E, O'Bryant SE, Hudson C, Scott-Fleming I, Bishara J, Danner P, Voyles D, Yang H, Patterson P, Lefforge D. Trend analysis of the supply of primary care physicians in rural and urban East, South, and West Texas from 1981 to 2007. *Texas Public Health Journal*, In Press.
27. Mendoza JE, Apostolos GT, Humphreys-Clark JD, Hanna-Pladdy B, O'Bryant SE. The Coin Rotation Task (CRT): A new test of motor dexterity. *Archives of Clinical Neuropsychology*, 24: 287-292, 2009.
28. Duff K, O'Bryant SE, Westervelt H, Sweet J, Reynolds CR, van Gorp WG, Tranel D, McCaffrey RJ. On becoming a peer reviewer for a neuropsychological journal. *Archives of Clinical Neuropsychology*, 24: 201-208, 2009.
29. O'Bryant SE, Hobson V, Hall J, Lacritz L, Massman P, Cullum M, Diaz-Arrastia R. Brain-derived neurotrophic factor (BDNF) in Alzheimer's disease. A project of the Texas Alzheimer's Research Consortium (TARC). *Journal of Alzheimer's Disease*, 17: 1051-1055, 2009.
30. O'Bryant SE, Zhang Y, Owen D, Cherry B, Ramirez V, Silva M, Hudson C, Hobson V, Grammas P, Schiffer RB, Manning G, Schrimsher GW, Lucas JA, Sutker PB. for the Cochran County Aging Study Research Team The Cochran County Aging Study: Methodology and Descriptive Statistics. *Texas Public Health Journal*, 61: 5-7, 2009.
31. Ashcraft A, Owen D, Braddock E, Waring S, O'Bryant SE. Rural West Texas: Healthcare implications of "living the simple life." *Texas Public Health Journal*, 61: 8-12, 2009.
32. Zhang Y, Ashcraft A, Hobson V, O'Bryant SE. An examination of cardiovascular disease risk factors in a rural-dwelling ethnically diverse cohort. *Texas Public Health Journal*, 61: 13-16, 2009.
33. Zhang Y, Spering C, Jenkins M, O'Bryant SE. An examination of health-related gender differences in a rural-dwelling cohort. *Texas Public Health Journal*, 61: 17-21, 2009.
34. Hobson V, Spering C, Humphreys JD, O'Bryant SE. An evaluation of the age- and education-adjusted MMSE scores among rural dwelling Mexican American elders: The Cochran County Aging Study. *Texas Public Health Journal*, 61: 22-24, 2009.
35. Schrimsher G, Cohen L, O'Bryant SE. The relation between alcohol and tobacco use and cognitive functioning in the Cochran County Aging Study. *Texas Public Health Journal* 61: 25-28, 2009.
36. Hargrave K, Alyce A, Bishara J, Hobson V, Zhang Y, O'Bryant SE. A description of migration patterns and disease prevalence in the Cochran County Aging Study cohort. *Texas Public Health Journal* 61: 29-35, 2009.
37. Akhilesh P, Wei L, Xiangling Y, Stocco D, Grammas P, Wang X. Blocking L-type Calcium Channels Reduced the Threshold of Cyclic AMP-induced Steroidogenic Acute Regulatory Gene Expression in MA-10 Mouse Leydig Cells. *Journal of Endocrinology*. 204:67-74, 2010.
38. Akhilesh P, Xiangling Y, Randolph S, James H, Stocco D, Grammas P, Wang X. Involvement of the Thromboxane A2 Receptor in the Regulation of Steroidogenic Acute Regulatory Gene Expression in Murine Leydig Cells. *Journal of Endocrinology*. 150:3267-3273, 2009.

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