A “Framingham-like” study designed to examine health conditions of adults and elders living in rural communities and to apply this knowledge to improving their healthcare.

**Principal Investigator:**
Matthew E. Lambert, PhD
Sr. Director, Rural Health Research
*F. Marie Hall Institute for Rural & Community Health*
*Texas Tech University Health Sciences Center*

**Advisory Boards:**
TTUHSC Scientific Advisory Board
Cochran County Community Advisory Board
Parmer County Community Advisory Board
Bailey County Community Advisory Board
Hockley County Community Advisory Board

**Sponsoring Organizations:**
F. Marie Hall Institute for Rural & Community Health, TTUHSC
Garrison Institute on Aging, TTUHSC

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**Participating Sites**

Project FRONTIER is currently being run in three West Texas counties – Cochran County, Parmer County, Bailey County and soon to be running in Hockley County with the ultimate goal of expanding to many rural counties throughout West Texas. The central administrative offices for Project FRONTIER are located at the F. Marie Hall Institute for Rural & Community Health on the Lubbock campus of the Texas Tech University Health Sciences Center. Individual County Coordinators manage the day-to-day activities in the participating counties.
Project Background

What does it mean to live and age in a rural community? Are rural residents more at risk for Alzheimer’s disease, obesity, cardiovascular disease, diabetes mellitus, and a number of other diseases? If so, what drives these disparities, and what can be done to stem their rising incidence in rural communities? These are the type of questions that inspired the initial creation of the Cochran County Aging Study and its expansion into Project FRONTIER, and which drive its daily work. While “rural” is not a term that can be applied to a completely homogeneous group, locations that fall under this description do share certain characteristics which bring increased risk for unfavorable health outcomes. This research platform is designed to address these very issues.

The Cochran County Aging Study (CCAS) began in 2006 with the primary focus on the interaction between cardiovascular risk factors and the development of cognitive dysfunction, particularly Alzheimer’s disease. Over the following two years, over 300 participants completed a brief interview and cognitive assessment, and 100% of the participants gave their consent to be recontacted for future study, thus establishing the potential viability of a rural longitudinal research study. In 2008, recontact of Phase 1 participants began with an expanded protocol, generating almost 2,000 individual data points per participant. The introduction of Parmer County as a study community in the summer of 2009 resulted in a new name – Project FRONTIER (Facing Rural Obstacles to healthcare Now Through Intervention, Education & Research). Bailey County and Hockly County have been added as study sites and there are currently over 1200 participants from three of the counties.

One of Project FRONTIER’s most unique features is its commitment to the training, support, and development of new and future researchers. This research platform has provided training opportunities for many undergraduate and graduate students, residents, and fellows. Project FRONTIER data has assisted in the completion of a Doctoral dissertation, Master’s thesis, and Undergraduate Research Fellowship. There is also a close relationship between Project FRONTIER and the “Science Rocks U” middle school science club in Whiteface (Cochran County), which has produced both an award-winning project and a poster presented at a 2010 regional psychological conference.

Additionally, Project FRONTIER is committed to the advancement of important and interdisciplinary research topics. Project FRONTIER investigators and partners are currently looking at topics that span from depression to community-based respite care to the creation of normalized standards on cognitive tests appropriate for the populations in which they are being used. Environmental exposures and their influence on health are recent additions as topics of study as well.

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Key Personnel

Administrative Offices:

Project Coordinator: Cathy Hudson
Database Manager: Adriana Gamboa
Other staff: Dr. Gordon Gong (Biostatistician)

Cochran County:
County Coordinator: Lousinda Anguiano

Parmer County:
County Coordinator: Rocio Carrasco

Bailey County:
County Coordinator: Cordelia Aguirre

Hockley County:
County Coordinator: Ida Davis
Research Projects and Activities of Project FRONTIER

Language Proficiency and Diabetes and Cardiovascular Disease Status
The relationship between GGT and Cardiovascular Disease
The Role of Vitamin B-12 and Depression
Symptom Overlap in the Clinical Dementia Rating Scale and Geriatric Depression Scale: A Project FRONTIER Study
Comprehensive Risk Factors for Suicide Risk among Rural Adults
End of Life Decision Making in Rural West Texas
A study of Thyroid function in rural-dwelling West Texans
Association of hypothyroidism with arsenic exposure
Food insecurity in Rural West Texas
Algorithm Development for Polysomnography to Diagnosis Obstructive Sleep Apnea
Relationship between allostatic load and glucocorticoid receptor polymorphisms in individuals living in rural West Texas: A Project FRONTIER Study
Comparing Efficacy of Diabetes Education Models in Large and Rural Medical Settings
Reducing Prostate Cancer Incidence From Arsenic Exposure
Association between Coronary Heart Disease and Toenail Arsenic Concentration at Low-Level Arsenic Exposure - A Project FRONTIER Study
Impacts of vitamin B12, obesity, and musculoskeletal function on cognition in a rural Texas Counties: a Project FRONTIER study
Rural-urban differences in Breast cancer screening rate
Multicomorbidity and health equity
Vitamin D and MMSE-7
Association among Arsenic Exposure, Arsenic Concentration in Nails, Coronary Heart Disease and Genetic Polymorphisms in Project FRONTIER Subjects
Vitamin D and MMSE-7 Performance
Arsenic exposure and Cancer in Texas
Prevalence of hypothyroidism and arsenic exposure in rural Texas
Publications


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National, Regional, and University Presentations


FRONTIER study. Poster presented at the annual American Psychological Association Convention, Washington, DC.

Mauer, CB, Johnson, L, Hall, J, & O’Bryant, SE (2011, August). The link between anxiety and neuropsychological functioning with depression as a moderating factor: A Project FRONTIER study. Poster presented at the annual American Psychological Association Convention, Washington, DC.


Gong, G., & O’Bryant, S.E. (2011, June). Low-Level Arsenic Exposure, AS3MT Gene Polymorphism and Cardiovascular Diseases in Rural Texas Counties. Oral presentation at the National Environmental Health Association (NEHA), Columbus, OH.


1. Poster presented at TTUHSC Student Research Week; Lubbock, TX, March 2011.
3. Poster presented at TTU Undergraduate Research Conference; Lubbock, TX, April 2011.

Imhof, B., Liston, K., & O’Bryant, S. Creation of the Cochran County Community-Based Respite Program: A Project FRONTIER Study

1. Poster presented at TTUHSC Student Research Week; Lubbock, TX, March 2011.
2. Poster presented at TTU Undergraduate Research Conference; Lubbock, TX, April 2011.

Buie, R.R., Schrimsher, G.W., Edwards, M., & O’Bryant, S.E. (2011, April). Alternate scoring method for the RBANS Figure Copy and Figure Recall subtests based on individual elements present within the overall figure: A Project FRONTIER Study. Poster presented at TTU Undergraduate Research Conference; Lubbock, TX, April 2011.

Mathew, M., Johnson, L., & O’Bryant, S.E. (2011, April) The relation between HbA1c levels and depression symptoms in an ethnically diverse rural sample: A Project FRONTIER Study; TTU Undergraduate Research Conference. Lubbock, TX.

1. Poster presented at TTUHSC Student Research Week; Lubbock, TX, March 2011.
2. Poster presented at TTU Undergraduate Research Conference; Lubbock, TX, April 2011.
Buie, R.R., Schrimsher, G.W., Edwards, M., & O’Bryant, S.E. (2011, April) Alternate scoring method for the RBANS Figure Copy and Figure Recall subtests based on individual elements present within the overall figure: A Project FRONTIER Study. Poster presented at the TTU Undergraduate Research Conference; Lubbock, TX.


**Project FRONTIER Grants**

**Million Hearts™ in the FRONTIER – High Tech and High Touch Approaches to Reducing Cardiovascular Risk Factors in a Rural Cohort**
National Heart, Lung and Blood Institute
Principal Investigator: Billy D. Philips, Ph.D.
Funding Dates: Under Revision
Total Direct Costs: $400,000 (requested)

**Suicide Risk in Rural Adults: A Comprehensive Model of Risk**
American Foundation for Suicide Prevention
Principal Investigator: Kelly Cukrowicz, Ph.D.
Funding Dates: October 2013 – September 2015
Total Direct Costs: $90,000

**A Pilot Study of Suicide Assessment in Rural Adults**
American Foundation for Suicide Prevention
Principal Investigator: Kelly Cukrowicz, Ph.D.
Funding Dates: August 2012 – July 2013
Total Direct Costs: $30,000

**Understanding and Improving the Health of Rural West Texans**
The CH Foundation
Principal Investigator: Sid E. O’Bryant, Ph.D.
Funding Dates: December 1, 2010 – November 30, 2011

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Total Direct Costs:  $50,000 (with $50,000 Institutional match)
Project Summary: To obtain multiplex assays on 300 samples from the Project FRONTIER Biobank in order to study the biological mediators of health outcomes among rural-dwelling adults and elders.

**Depression Among Rural-Dwelling Adult and Elder Texans**

Hogg Foundation for Mental Health  
Principal Investigator: Sid E. O’Bryant, Ph.D.  
Funding Dates: June 1, 2010 – May 31, 2011  
Total Direct Costs: $14,926  
Project Summary: To study the prevalence and presentation of depressive symptoms among rural adults and elders of West Texas. Also, to investigate prescription practices of anti-depressant medications.

**Normative Data for the RBANS among English-Speaking Mexican Americans**

National Academy of Neuropsychology  
Principal Investigator: Sid E. O’Bryant, Ph.D.  
Funding Dates: September 1 2009 – August 31, 2010  
Total Direct Costs: $15,000

**A Community-Based Respite Care Program: Project FRONTIER Study**

Carl B. & Florence E. King Foundation  
Principal Investigator: Sid E. O’Bryant, Ph.D.  
Funding Dates: October 2009 – September 2010  
Total Direct Costs: $49,770

**Arsenic Exposure and Alzheimer’s Disease**

South Plains Foundation  
Principal Investigator: Sid E. O’Bryant, Ph.D.  
Co-Investigators: Gordon Gong, M.D., Jullian Spallholz, Ph.D., Mallory Boylan, Ph.D.  
Funding Dates: September 1, 2009 – August 31, 2010  
Total Direct Costs: $15,000

**The Cochran County Aging Study (now Project FRONTIER)**

Carl B. & Florence E. King Foundation  
Principal Investigator: Sid O’Bryant, Ph.D.  
Funding Dates: October 2006 – September 2007  
Total Direct Costs: $58,402.00

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