

# **Governor's University Research Initiative**

## **2017 Legislative Report**

Reporting Period: September 2015 - December 2016



OFFICE OF THE GOVERNOR  
ECONOMIC DEVELOPMENT & TOURISM

## Table of Contents

Overview of the Governor’s University Research Initiative Grant Program .....	- 3 -
Reporting Requirements.....	- 3 -
Program Activity.....	- 4 -
Distinguished Researchers.....	- 4 -
GURI Advisory Board.....	- 7 -

## Overview of the Governor's University Research Initiative Grant Program

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*"We are beginning the process of elevating higher education in Texas to greater heights than it's ever been before. Through our Governor's University Research Initiative, Texas is making a strategic investment to vault the standings of our public colleges and universities into the top-ranked nationally. Our investment into GURI will help our universities recruit even more Nobel Laureates and National Academy members to the Lone Star State, and will serve as a catalyst for further economic development." -Governor Greg Abbott*

The Governor's University Research Initiative grant program ("GURI") was enacted in 2015 by the 84th Legislature with a goal to bring the best and brightest researchers in the world to Texas colleges and universities. Through the GURI program, Texas welcomed transformative researchers who will in turn serve as economic catalysts to the Texas economy for years to come.

This program is a matching grant program to assist eligible Texas institutions of higher education in recruiting distinguished researchers, such as Nobel Laureates and members of national honorific societies, from around the world. The program is codified in Chapter 62 of the Texas Education Code, Subchapter H and the program's administrative rules may be found in Title 10, Part 5, Chapter 190 of the Texas Administrative Code.

The GURI Advisory Board was established to assist the office with the review and evaluation of applications for funding of grant proposals under this chapter. The first application was received February 25, 2016. As of December 31, 2016, there were 11 GURI Advisory Board meetings.

## Reporting Requirements

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The contents of the GURI legislative report are outlined in Section 62.168 of the Texas Government Code:

Sec. 62.168. REPORTING REQUIREMENT. (a) Before the beginning of each regular session of the legislature the governor shall submit to the lieutenant governor, the speaker of the house of representatives, and the standing committees of each house of the legislature with primary jurisdiction over economic development and higher education matters and post on the office of the governor's Internet website a report on matching grants made to eligible institutions from the fund that states:

- (1) the total amount of matching funds granted by the office;
- (2) the total amount of matching funds granted to each recipient institution;
- (3) a brief description of each distinguished researcher recruited by each recipient institution, including any amount of external research funding that followed the distinguished researcher to the institution;

(4) a brief description of the expenditures made from the matching grant funds for each distinguished researcher; and

(5) when available, a brief description of each distinguished researcher's contribution to the state's economic competitiveness, including:

(A) any patents issued to the distinguished researcher after accepting employment by the recipient institution; and

(B) any external research funding, public or private, obtained by the distinguished researcher after accepting employment by the recipient institution.

(a-1) The report may not include information that is made confidential by law.

(b) The governor may require an eligible institution that receives a matching grant under this subchapter to submit, on a form the governor provides, information required to complete the report.

## **Program Activity**

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As of December 31, 2016, the OOG has approved \$39,012,550 in GURI matching funds to three Texas universities:

- \$28,680,000 of matching funds, in 7 awards, granted to Texas A&M University
- \$8,532,550 of matching funds, in 3 awards, granted to the University of Houston
- \$1,800,000 of matching funds, in 1 award, granted to the University of Texas at Austin

The full \$39,012,550 is encumbered and is no longer available for additional recruitment awards. Universities receiving GURI matching grant awards are required to submit quarterly status reports and reimbursement requests with supporting documentation. To date, grantee universities have submitted two quarterly reports. In the first reporting period, grantee universities did not request any reimbursements. The reports for the second reporting period were due December 30, 2016, and OOG staff is reviewing reimbursement requests to ensure compliance prior to disbursing funds. As universities begin to spend money on allowable expenses, they will request reimbursement from the funds that have been encumbered for the GURI program.

## **Distinguished Researchers**

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The following contains a brief description of each distinguished researcher recruited by each recipient institution. All of the distinguished researchers enhance the faculty at each university, and their research and discoveries have the potential to catalyze job creation and commercialization efforts in Texas.

## **Texas A&M University**

### **Girish Saran Agarwal, Ph.D.**

*Member of the Royal Society – UK*

Dr. Girish Saran Agarwal is a pioneer in work on “slow light” and has published influential papers on phase space and master equations in quantum optics. His research will be in theoretical quantum optics focusing on the interaction of laser light with atoms. These applications will permit the identification of chemical compounds and will form the basis to detect pathogens and chemicals at a distance. In spring 2017, Dr. Agarwal will begin teaching a graduate course on Spectroscopy, in addition to mentoring graduate students immediately upon arrival.

### **Leif Andersson, Ph.D.**

*Foreign Associate of the National Academy of Sciences*

Dr. Leif Andersson is among the most renowned international leaders in the genomic and molecular studies of domestic animals as models of biomedical genomics. Dr. Andersson conducts research on the genetic changes underlying phenotypic diversity in horses, pigs, dogs, and a variety of other domestic animals. Many of Dr. Andersson’s discoveries in domestic animal models can be directly applied to agriculture, as he uses the latest genomic tools to reveal the genetic control of many important production traits in agricultural animals. Dr. Andersson will participate in graduate education programs of the College of Veterinary Medicine at Texas A&M University.

### **Richard B. Miles, Ph.D.**

*Member of the National Academy of Engineering*

Dr. Richard B. Miles comes to Texas A&M University from Princeton University, and his research focuses on the use of lasers, electron beams, low temperature plasmas, microwaves and magnetic devices to observe, control, accelerate, extract power and precondition gas flows for subsonic, supersonic and hypersonic fluid dynamics, combustion, propulsion and homeland defense applications. One such application of his research is the development of state-of-the-art remote detection that will identify hazardous gases and dangerous contaminants such as anthrax or the Ebola virus, hidden explosives such as IEDs, and/or greenhouse gases and pollutants. Dr. Miles will establish and lead a Center of Excellence in Interdisciplinary Optical and Laser Detection Systems for National Security and Safety at Texas A&M University.

### **Thomas Overbye, Ph.D.**

*Member of the National Academy of Engineering*

Dr. Thomas Overbye maintains a robust research portfolio including very large, multi-investigator energy projects such as a \$22.5 million cyber security project with the Department of Energy, an ARPA-E project on synthetic data for power grid analysis, and a National Science Foundation project on the impact of geomagnetically-induced currents on power networks. In

joining the work already ongoing at Texas A&M University to make the state's electric power grids operate smarter, thus called "Smart Grids," Dr. Overbye will lead in the areas of improved power system operations, real-time smart grid visualization, and cyber security. These improvements will save money for the public utility companies and the State, making the state's power systems more reliable and secure. Dr. Overbye will serve as a professor in the Department of Electrical and Computer Engineering and teach on topics related to power distribution and generation.

**George M. Pharr, Ph.D.**

*Member of the National Academy of Engineering*

Dr. George M. Pharr is one of the top researchers in the world and the main developer of the materials characterization technique called nano-indentation. Upon the hiring of Dr. Pharr, Texas A&M University will create an Excellence Cluster in "Nano-Materials Innovation and Characterization for Energy," whose focus will be on nanoscale materials for uses in high strength materials for energy production and storage, electronics, modern medicine, computer hard drives and everyday products. Dr. Pharr's nano-indentation technique serves as an instrumental tool in the development and deployment of a variety of new materials for a wide range of applications and industry needs, including national security, transportation infrastructure and vehicle reliability and optimization, and health devices and measurements.

**University of Houston**

**Andrea Prosperetti, Ph.D.**

*Member of the National Academy of Engineering*

Dr. Andrea Prosperetti comes to the University of Houston from Johns Hopkins University and is a world-renowned authority in the field of multiphase flow. Dr. Prosperetti will join the University of Houston as a Distinguished Professor of Mechanical Engineering in the Cullen College of Engineering. Dr. Prosperetti will also lead the multi-disciplinary Center for Advanced Computing and Data Systems. This center represents efforts in high performance computing as it applies to important applications that will have significant impact on the State of Texas including energy, infrastructure, aerospace, health and national security.

**John Suppe, Ph.D.**

*Member of the National Academy of Sciences*

Dr. John Suppe's is a world leader in structural geology and tectonics, and his research focuses on seismic tomography and new tomographic models. Dr. Suppe joins the University of Houston as a Distinguished Professor of Earth & Atmospheric Sciences in the College of Natural Sciences and Mathematics. Dr. Suppe will also establish and lead the multi-disciplinary Center for Tectonics and Tomography (CTT) at University of Houston. The center's research agenda will cover many relevant research topics such as sea-level rise, geo-hazards, stratigraphy, and petroleum and resource exploration, all of which are vital to the economy and well-being of Texas. Dr. Suppe's research will be focused on seismic tomography as well as generation of

new tomographic models. His work will transform the impact of geosciences programs in the state and beyond, particularly on the natural resources industry.

**Ganesh Thakur, Ph.D.**

*Member of the National Academy of Engineering*

Dr. Ganesh Thakur is a pioneer and world authority in the field of integrated petroleum reservoir management. Dr. Thakur will join the University of Houston as a Distinguished Professor of Petroleum Engineering in the Cullen College of Engineering. Dr. Thakur will also serve as the Director for Energy Industrial Partnerships at the University of Houston. This center represents efforts in upstream and midstream as it applies to important applications and will have immense impact on the State of Texas in the field of energy. Dr. Thakur's research will be focused on waterflood management as applied to secondary recovery of oil.

**The University of Texas at Austin**

**Joan Brennecke, Ph.D.**

*Member of the National Academy of Engineering*

Dr. Joan Brennecke will be a professor in the McKetta Department of Chemical Engineering and holder of an endowed chair. She is an internationally recognized leader in sustainable chemical process technologies and energy storage capabilities. As a member of the faculty at the University of Texas, Dr. Brennecke will conduct research on energy and sustainability, including the design of ionic liquid systems for safer, more reliable and longer-lasting batteries. Dr. Brennecke will work closely with the university's office of technology commercialization to facilitate technology transfer from her lab to the marketplace thus benefiting not only the university, but the entire state of Texas.

**GURI Advisory Board**

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The following have been appointed by the Governor to serve as members of the GURI Advisory Board.

**James Huffines (Chairman)** of Dallas is president and chief operations officer of PlainsCapital Corporation and serves on the Hilltop Holdings, PlainsCapital Bank, and PrimeLending boards of directors.

**Jacquie Baly** of Sugar Land is president and chief executive officer for BalyProjects, a former member of the Sugar Land City Council, and former adjunct professor at the University of Houston.

**Cindy Conroy** of El Paso is first executive assistant and charitable giving coordinator at WestStar Bank.

**Antonio Falcon** of Rio Grande City is medical director of Family Health Center, L.L.P.

**John Goodman** of Frisco is founder and executive chairman of Family ER + Urgent Care Centers and is a board member, co-founder, former executive chairman, and former chief executive officer of Goodman Networks.

**Wendy Gramm** of Helotes is chairman of the Texas Public Policy Foundation Board of Directors.

**J. Michael Lewis** of Dallas is a private investor and the general partner of Coronado Resources, Olympia Royalty, and Wellspring Royalties.

**Michael Plank** of Houston is chairman and chief executive officer of The Plank Companies, Inc. and three affiliated companies: National Property Holdings, Rail Logix and Speed Shore Corporation.

**Sam L. Susser** of Corpus Christi is president of Susser Holdings II, L.P. and previously served as chairman of Sunoco, L.P. and Stripes, L.L.C.



Office of the Governor  
Economic Development and Tourism  
PO Box 12428, Austin, Texas 78711  
512-936-0101  
[gov.texas.gov/ecodev/guri/home](http://gov.texas.gov/ecodev/guri/home)