THE TEXAS SPACE GRANT CONSORTIUM – A RESOURCE FOR K-12 EDUCATORS

• MARCH 7, 2019 PRESENTATION
• Teacher Enrichment Program
• Center for Excellence in Education
• Houston, TX
THE TEXAS SPACE GRANT CONSORTIUM
– A RESOURCE FOR IGNITING STUDENTS
AND TEACHERS IMAGINATIONS

The Re-Emergence of Space as the STEM catalyst

What can teachers do to support students interested in space travel and space colonization?

What resources are available for students and teachers to ignite the imaginations of students and educators?

The Texas Space Grant Consortium
Presentation Overview

• Maximum Impacts - An Overview of the Texas Space Grant Consortium
• Focus on Secondary Educational Institutions – Students & Teachers
• Members: Collaborations and Partnerships
• TSGC Secondary Education Focus
  • CLASSROOM ACTIVITIES
  • HIGH SCHOOL INTERNSHIPS
  • PROFESSIONAL DEVELOPMENT
  • RESOURCE MATERIALS
  • PUBLIC OUTREACH
• Contact with TSGC Staff
• Q&A
MAXIMUM IMPACTS - HIGHLIGHTING THE TX SPACE GRANT CONSORTIUM

The NASA Texas Space Grant Consortium, formed in 1989, has as its objectives to:

• *Foster sharing of space related course materials among consortium academic institutions*
• Foster the development of multi-institutional space research efforts including industry-university teaming
• Foster high quality graduate level space research at consortium academic institutions
• *Use interest in space to increase participation in science and mathematics in the public schools*
• *Foster space-related programs and curricula for public schools and for the public*
• *Increase the pool of high school graduates who enter college to study STEM with emphasis on underrepresented minorities and women*
• The TSGC membership currently includes 59 organizations -- the largest among the 52 consortia nationally.
• *Academic members include institutions both public and private; large and small; minority and non-minority.*
• *Industry members include both large and small companies. TSGC members have developed a very balanced program in the mix of higher education, research infrastructure and public service projects.*

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Non-Educational Members at the TSGC

Government Members

- Office of the Governor
- Texas Higher Education Coordinating Board

Industrial Members

- Lockheed Martin

Non-Profit Members

- Austin Astronomical Society
- Austin Planetarium
- Bob Bullock Texas State History Museum
- Capitol Area Council, Boy Scouts of America
- Don Harrington Discovery Center
- Girlstart
- Rio Grande Valley Science Association
- Scobee Education Center
- Seal of Valor
- Southwest Research Institute
- TAME (Texas Alliance for Minorities in Engineering)
- Texas Medical Center
- Universities Space Research Association (USRA)
TSGC
MEMBER INSTITUTIONS
POTENTIAL
COLLABORATORS

Austin Community College
Angelo State University
Baylor University
El Paso Community College
Houston Community College
Northwest Lamar University
Lone Star College
McLennan Community College
Prairie View A&M University
Rice University
San Jacinto College
Southern Methodist University
St. Edwards University
Sul Ross State University
TSGC
MEMBER INSTITUTIONS
POTENTIAL COLLABORATORS

Tarleton State University
Texas A&M University
Texas A&M International University
Texas A&M University - Commerce
Texas A&M University - Corpus Christi

Texas A&M University - Kingsville
Texas A&M University - Texarkana
Texas Christian University
Texas Southern University
Texas State University - San Marcos

Texas Tech University
Texas Woman's University
Trinity University
University of Dallas
University of Houston

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TSGC
MEMBER INSTITUTIONS
POTENTIAL COLLABORATORS

University of Houston, Clear Lake
University of Houston, Downtown
University of North Texas
University of Texas at Arlington
University of Texas at Austin
University of Texas at Dallas
University of Texas at El Paso
University of Texas at San Antonio
University of Texas at Tyler
University of Texas Health Science Center, Houston
University of Texas Health Science Center, San Antonio
University of Texas Medical Branch, Galveston
University of Texas of the Permian Basin
University of Texas - Rio Grande Valley
University of Texas Southwestern Medical Center

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TSGC K-12 PROGRAMS

- Classroom Activities
- High School Internships
- Professional Development
- Resource Materials
- Public Outreach
TSGC
CLASSROOM ACTIVITIES

• Space Vision
  Concepts of Astronomy and space exploration are likely to be more abstract to a visually impaired person than to other people. However they encounter news about the Solar System through their daily life. Space Vision's goal is to satisfy the interest of visually impaired students and help them understand these concepts. TSGC, in cooperation with the Texas School for the Blind and Visually Impaired (TSBVI) organized an annual enhancement workshop with Astronomy theme in 2004. Hands-on, in inquiry-based activities were adapted or developed make astronomy accessible, and to engage the students in the scientific discovery process.
• **Space Explorers**
  An interdisciplinary space exploration education curriculum designed for middle school youth funded by the Texas Space Grant Consortium. The curriculum includes lessons for use in mathematics, language arts, social studies, science, computer, theater, physical education, and art classes. Students will broaden their knowledge and comprehension of space exploration through interactive, hands-on learning activities.

• **Audience:** Fifth to eighth grade middle school students

• **GRACE Educational Activities**
  In partnership with 10 Master Teachers across the nation the Texas Space Grant Consortium has developed over 70 kindergarten though 12th grade classroom activities that are aligned to the national education standards.
The Summer Intern Program is a nationally competitive STEM program for high school students. The program provides selected students with exposure to Earth and space research. Interns will learn how to interpret NASA satellite data while working with scientists and engineers in their chosen area of work.

Scientists and Engineers at UT/CSR are conducting NASA supported research on astronomy, remote sensing, and space geodetic techniques to help understand Earth systems, natural hazards and climate science. This summer TSGC and UT/CSR will support a summer intern program where interns will work remotely prior to their on-site internship July 13-27, 2019. Housing, meals, and local transportation will be provided for those selected. A limited number of travel scholarships to Texas are available. The summer intern program will allow interns to view and investigate NASA remote sensing data including CSR analysis of ice sheets, Earth’s gravity field, and other satellite observations while being mentored by project scientists.

Summer internships to motivated high school students who have an interest in pursuing Science, Technology, Engineering, or Mathematics careers. The interns will work beside CSR scientists analyzing and visualizing data. This content knowledge, coupled with hands-on experiences, allows the intern to gain experience in authentic NASA research through field investigation and data analysis.
LiftOff
This week-long professional development training for teachers emphasizes science, technology, engineering, and mathematics experiences by incorporating a space science theme supported by NASA missions. Teacher participants are provided with curriculum, materials, and experiences through hands-on activities and field investigations that will promote space science and enrichment activities for themselves and others. This program announcement is contingent upon receiving NASA funding.
• **VOYAGE to Spread Space Excitement Educator Newsletter**
  This space related newsletter is published once every two weeks and contains useful information for K-12 grade Educators such as curriculum ideas, internet links, program announcements and other resources. You can submit articles for the newsletter and share your ideas! *Do you have a science or math Web site you’ve found especially helpful to your students? Send TSGC the URL address and the grade level it best serves and they will pass it on!!*

• **Everything About...**
  Learn all about the Moon and Mars in this educational series. Contains factoids, galleries, quizzes, games and much more.
• **Door to the Universe**
  The "Opening the Door to the Universe" and its predecessor, "Door to the Universe", are a series of **multi-day, professional development workshops designed for elementary and middle-school teachers**. The topics of the workshops cover background material on our solar system, and Sun-Earth connections, the Earth Moon system and space exploration. **The hands-on activities the teachers learn are chosen to help teachers to teach important concepts required by the TEKS and TAKS.**

• **NASA Astronauts with Texas Roots**
  Biographies of NASA astronauts with Texas roots have been prepared by the Astronaut Office at Johnson Space Center and have been provided through the Internet as a public service to the World Wide Web community.
• **K-12 Educational Programs**

The Texas Space Grant Consortium has a long history of conducting space related Educational Programs at the K-12 level across the state and the nation. TSGC is currently soliciting proposals that are designed to enhance students understanding of the benefits of space exploration and space based research.
Motivating Students, Teachers, and Parents
The Roles of the Texas Space Grant Consortium

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