

2018 ANNUAL REPORT

dream
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Texas Alliance for Minorities in Engineering



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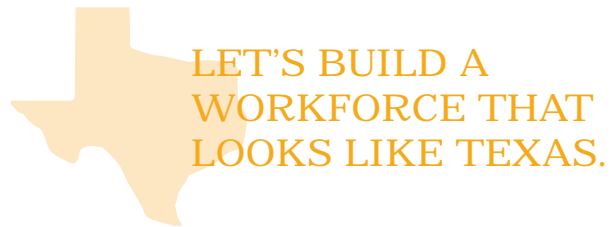
OUR MISSION

To enable Texas students to pursue careers in Science, Technology, Engineering and Math (STEM) by:

- » Creating partnerships among educators, industry, government and families to inform, educate and motivate students
- » Implementing classroom and extracurricular programs and activities
- » Focusing on populations that remain underrepresented in fields of STEM
- » Promoting diversity in STEM careers

OUR VISION

Every K-12 student has the educational experiences necessary to pursue a career in the fields of science, technology, engineering, and math.



LETTER FROM THE BOARD CHAIR

Do you have a favorite movie or TV show about engineers? When *The Big Bang Theory* first came on the air, for instance, my colleagues and I were thrilled. We may have balked a little at the stereotype of the nerdy scientist, but at least it was finally cool to be nerdy!

I've always enjoyed *Apollo 13* for its portrayal of the intense teamwork between the astronauts and the ground team. But this movie also has its drawbacks, namely, an almost total lack of diversity. Granted, *Apollo 13* took place in 1970, but women and minorities were playing significant roles at NASA well before then (as *Hidden Figures*, another Hollywood movie, showed).

Fortunately, TAME doesn't need to depend on Hollywood to get kids excited about STEM. We have the Trailblazers for that! Thanks to our strong network of sponsors, dedicated volunteers, and tireless staff, we are able to bring our free, high-quality, teaching-aligned STEM programs to more and more communities across Texas.

Over the past year, we've done some amazing optimization to TAME programs. For instance, this was our first year offering the State STEM Competitions at an overnight camp. The feedback was tremendously positive, both in terms of

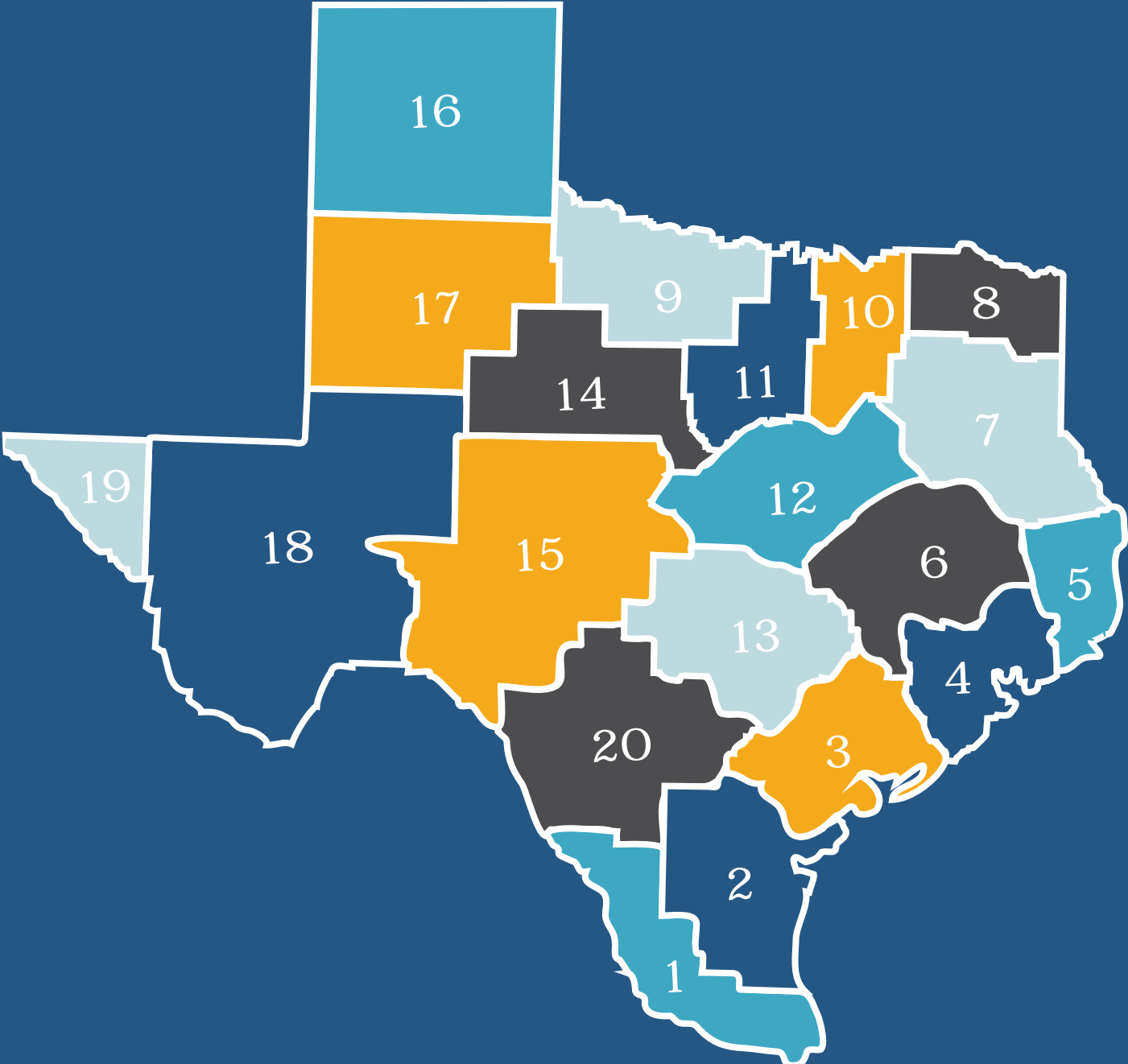
student experience and in terms of operation. Another area of continuous improvement is in our messaging. How do we encourage students – especially those who aren't usually seen as “science types” – in STEM careers? Research from the National Academy of Science shows that messaging really does make a difference. For instance, while some girls (myself included) respond to a “gears and cogs” view of engineering, many others don't. Instead, they respond strongly to the idea that through engineering or another STEM field, they can make a positive difference in the world.

In 2019, the TAME Board will begin another round of strategic planning to lay out our vision for the next five years. It's a great time to be involved with TAME, and I look forward to exploring how we can continue to improve.

If you're a TAME supporter, I want to thank you for your continued support. If you're not, I hope you'll consider joining us this year. Together, we can help Texas kids see themselves in the STEM picture – even if they're not seeing themselves on screen.

LAURA BOSWORTH
Chair, TAME Board of Directors

CHAPTERS



TAME Chapters provide local leadership and support for STEM education. Chapters, which correspond to the regions defined by the Texas Education Agency, bring together volunteers from local schools, colleges, universities, corporations, businesses, and community organizations into a leadership team. They offer locally relevant programs like career days, factory tours, and professional development for teachers. They also coordinate and host the annual Divisional TAME STEM Competitions for students in their Chapter.

TEA Region	Chapter	Chair(s)	Number of Trailblazer visits	Number of Clubs	Students Served
1	Valley	Nelinda Villarreal	7	13	819
2	Corpus Christi	Dr. Cynthia Hopkins	4	3	506
3	Victoria		2	0	340
4	Gulf Coast (GC TAME)	Astra Zeno, Dan Bureson	53	21	7,013
5	Golden Triangle (GT TAME)	Annie Carter	24	15	5,899
6	Huntsville		3	0	280
7	East Texas	Cynthia Nyvall	2	4	463
8	Mount Pleasant		0	0	0
9	Wichita Falls	Denise Simmons, Marcie Williford	6	14	2,113
10	Dallas	Maurine Amend	5	11	1,273
11	Fort Worth	Eva Trevino, Steve De Leon	2	14	498
12	Waco		3	0	379
13	Capital Area	TAME Staff	31	16	4,231
14	Abilene		7	0	864
15	San Angelo	Janice Trees	3	2	189
16	Amarillo	Dominic Cortez, Floyd Anthony	11	11	1,928
17	Lubbock	Olga Achourkina	1	4	271
18	West Texas	Kim McKay	8	8	1,843
19	El Paso	Ruth Mejia	0	3	23
20	San Antonio	Devethia Thompson	17	27	3,226

Our PHILOSOPHY

... we envision a two-pronged strategy for transforming K-12 education.*



inspire

We must *inspire* students so that all are motivated to study STEM subjects in school and many are excited about the prospect of having careers in STEM fields.



prepare

We must *prepare* students so they have a strong foundation in STEM subjects and are able to use this knowledge in their personal and professional lives.

“ Love when we get the Trailblazer here! My hard to reach students almost always are my best students when in the Trailblazer!!! AWESOME!!! ”
– TAME Teacher, Wichita Falls Chapter

*Report, The President's Council of Advisors on Science and Technology, September 2010 | https://nsf.gov/attachments/117803/public/2a--Prepare_and_Inspire--PCAST.pdf

TAME PROGRAMS: 2017-18



13,395 inspired



19,197 prepared

Comic Books: **4,400**

Trailblazer @ Community Events: **2,972**

Trailblazer @ STEM Camps: **300**

Trailblazer @ STEM Events: **2,052**

Trailblazer @
Science Rocks! (Libraries): **3,671**

Trailblazer @ Schools: **16,374**

Multi-week Family STEM Events: **61**

TAME Clubs: **2,762**

Divisional & State
STEM Competitions: **2,599**

Scholarships & Mentoring: **67**

OVERALL PARTICIPATION STATISTICS:

GENDER

Female: **53%**

Male: **47%**

ETHNICITY

Hispanic: **45%**

Caucasian: **36%**

African American: **14%**

Asian/Pacific Islander: **4%**

Other: **1%**

The PROGRAMS



START WITH A GREAT STORY: TAME Science Squad™ Comic Books

- » Adventures of five ethnically diverse student superheroes
- » Professionally produced series in English and Spanish

STEM saves the day! (Elementary School, Inspire)



GET THEIR HANDS ON STEM: TAME Trailblazers

- » STEM-museums-on-wheels visiting schools, libraries and community events
- » 5 exciting, hands-on exhibit areas
- » Fun introduction to STEM concepts, electives, and career paths with local STEM professionals

STEM field trip comes to you! (Elementary/Middle School, Inspire & Prepare)



BRING IN THE FAMILY: Family STEM Events

- » Family and community-focused activities
- » Partnership with local STEM program providers
- » Increase awareness of STEM careers

STEM in the community! (Elementary/Middle School, Inspire)



inspire =  +  = prepare



TAKE TIME TO EXPLORE: TAME Clubs

- » Deeper skill building and problem-solving activities
- » Peer network of students
- » Strong network of STEM educators

Hands on STEM! (Middle/High School, Inspire & Prepare)



CELEBRATE LEARNING: Divisional & State STEM Competitions

- » Individual math and science tests
- » Collaborative, group engineering design challenges
- » Computational thinking

Showcase STEM Skills! (Middle/High School, Inspire & Prepare)



SEE THEM THROUGH: TAME Scholarships & Mentoring

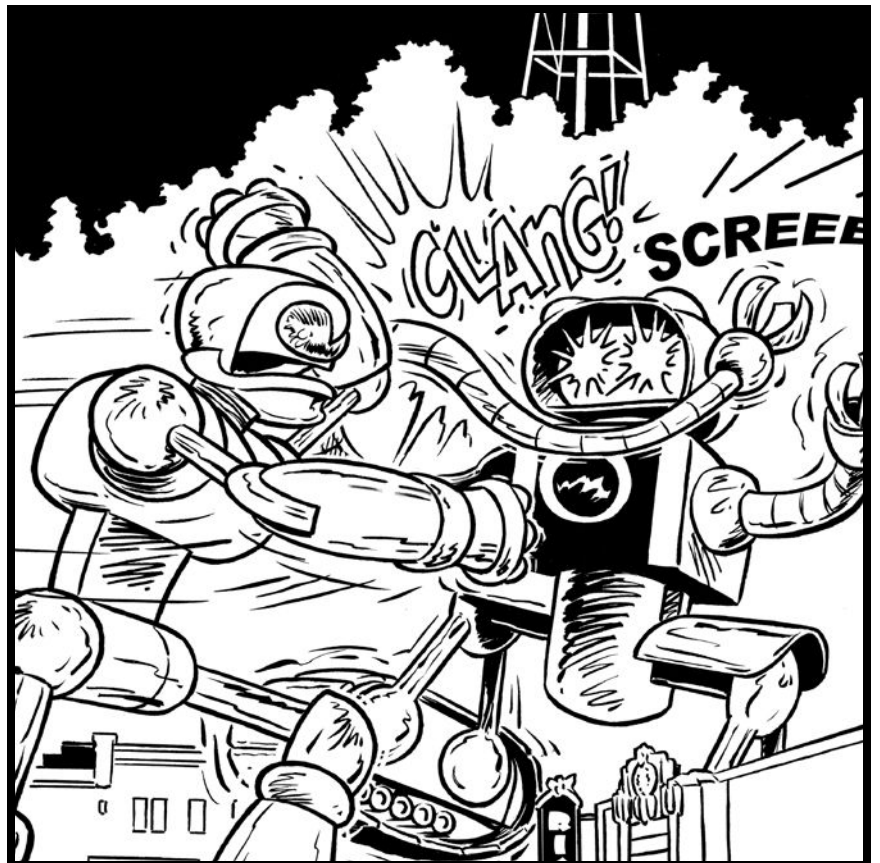
- » Financial boost and encouragement
- » Support students in the critical first year of college

STEM Careers take off! (High School/College, Prepare)



COMIC BOOKS

The TAME Science Squad™ Comic Books are a professionally produced series showcasing the adventures of five ethnically diverse TAME students who use their abilities in STEM to save the day. The books are available in English and Spanish. (Elementary school, Inspire)



TRAILBLAZERS

The TAME Trailblazers are unique interactive museums-on-wheels, traveling to schools and communities across Texas to bring hands-on science to students. With curated content from NASA, NOAA, and the National Energy Discovery Project, the Trailblazers offer hands-on activities and exhibits that allow students to explore concepts of energy, space, weather, biotechnology, and aerodynamics. The Trailblazers anchor Family STEM Events, Science Rocks! summer reading events at libraries and large public events.



“ I want to be the first girl on another planet. ”

– Izzy B., Age 8, Trailblazer visitor

Family STEM Events encourage participants to explore STEM concepts, learn about STEM careers, and interact with STEM professionals in an informal learning setting. These events are designed to strengthen family awareness of and support for their students' involvement in STEM.

Science Rocks! Library Programs are offered in the summer, typically in conjunction with reading programs. A visit from the TAME Trailblazer, training and toolkits help library staff offer informal STEM programs in their community.



TRAILBLAZER PROGRAM VISITS

Community Events: **21**

Science Rocks Events: **37**

School Events: **113**

STEM Camp Events: **6**

(Title I campus visits: **106**)

Family STEM Events: **14**

Total Visits: 191



Total Student Visitors:
25,369



Total Miles Traveled:
25,878

GENDER

Female: **54%**

Male: **46%**

ETHNICITY

Hispanic: **45%**

Caucasian: **37%**

African American: **14%**

Asian/Pacific Islander: **3%**

Other: **1%**

CLUBS

A TAME Club is an enrichment program designed to support students interested in exploring STEM subjects with the guidance of sponsors and leaders. While all TAME programs are inclusive, TAME Clubs focus on recruiting women and under-represented minority students. The clubs are typically sponsored by teachers or community partners and are usually hosted on a school campus or at a community center. Clubs meet regularly and program activities are designed to increase student skills, awareness of STEM careers, and access to role models.



166

NUMBER OF CLUBS



125

TITLE I SCHOOLS



2,762

CLUB MEMBERS



TAME Club, San Antonio

STEM COMPETITIONS

At the Divisional & State STEM Competitions, TAME Club members in grades 6 -12, from all across Texas, compete in math & science tests and in solving real-world engineering design challenges. The annual Competitions bring together thousands of high-performing students to celebrate their math, science, and engineering skills and to connect participants with a network of peers and mentors across Texas.



This year, in addition to recruiting young women and students from groups traditionally underrepresented in STEM TAME focused on recruiting students who would be the first-generation of college graduates in their family, and students who qualify for free and reduced meals at school. **Overall, 80% of students at the STEM Competitions met one of these categories.**

PARTICIPATION STATISTICS:

GENDER

Female: 40%

Male: 60%

ETHNICITY

Hispanic: 40%

Caucasian: 25%

Asian/Pacific Islander: 21%

African American: 12%

Other: 2%

Native American: 1%



IMPACT DATA



“ The best part was working with my team on the engineering challenge. I was able to learn how to be a leader and follower. The challenge allowed my team to communicate together. ” – Student, State STEM Competition

PRESENTING SPONSOR, STATE STEM COMPETITION: RAYTHEON

Other Sponsors: Arconic, Boeing, Chevron, ConocoPhillips, Halliburton, IBM, Lockheed Martin, Shell Oil Company, Angelo State University, American Society of Civil Engineers, Chevron Phillips, Emerson Process Management, Enbridge, Lamar University, LeTourneau University, Midwestern State University, National Instruments, Odessa College, St. Philip's College, Tarrant County College, Texas Board of Professional Engineers, Texas Tech University, Texas Instruments, Trinity University, University of Houston, The University of Texas at Austin, University of Texas Rio Grande Valley

SCHOLARSHIPS

TAME supports careers in STEM by offering scholarships to TAME Club members who have been accepted into an accredited university or community college to pursue higher education in a STEM-related field.

2018 SCHOLARSHIP RECIPIENTS

Name	Major	University	Funder
Bryan Benitez	Civil Engineering	Clarkson University	ConocoPhillips
Christian Douglas	Civil Engineering	The University of Texas at Austin	Crespin Guzman Endowed Scholarship
Cristofer Perez Monroy	Mechanical Engineering	Texas A&M University	Texas A&M University
Evan Orlandi	Mechanical Engineering	University of Houston	University of Houston
Evan Villalpando	Chemistry	Midwestern State University	Pratt & Whitney
Gabriela Franco	Biomedical Engineering	The University of Texas at Austin	The University of Texas at Austin
Gabriela Garcia	Mathematics	The University of Texas at Austin	Pratt & Whitney
Jacob Wang	Aerospace Engineering	Wichita State University	Pratt & Whitney
Janet Santacruz	Civil Engineering	Texas A&M University	TAME Board Members
Jesus Jimenez Castillo	Electrical Engineering	University of Texas at San Antonio	ConocoPhillips
Muhammad Shahzad	Chemical Engineering	Lamar University	ConocoPhillips
Najat Omer	Civil Engineering	The University of Texas at Austin	Crespin Guzman Endowed Scholarship
Nathnael Mekuria	Computer Engineering	University of Texas at Dallas	ConocoPhillips
Noah Castro	Business/Finance/ Electrical Engineering	Tarrant County College	Pratt & Whitney
Pedro De Leon	Mechanical Engineering	Texas Tech University	Texas Tech University
Peng-Yu Ang	Mechanical Engineering	The University of Texas at Austin	The University of Texas at Austin
Samuel Aranda	Business/Accounting	University of Texas at Permian Basin	ConocoPhillips

FINANCIALS

2017-18 DATA



Revenue

Contributions: **\$693,667**
Program Fees: **\$146,178**
Other Income: **\$1,620**

TOTAL: \$841,465



Expenses

Program: **\$771,170**
Administration: **\$40,882**
Fundraising: **\$31,500**

TOTAL: \$843,552

BOARD *of* DIRECTORS

Board Member	Employer	Position
Laura Bosworth-Bucher	TeVido BioDevices	Chair
Tricia Gore	The University of Texas Austin (Retd.)	Immediate Past Chair
Karl Nichols	E3 Alliance	Secretary
Michele Meyer	The University of Texas Austin	Treasurer
Aaron Maestas	Raytheon Corporation	Member at large
Andy Deck	National Instruments	Member at large
Britiany Hayes	ConocoPhillips	Member at large
Deb Dorman	IBM (Retd.)	Member at large
Deborah Kariuki	Round Rock ISD	Member at large
Dominic Cortez	B&W Pantex	Member at large
Grant Butkus	Macquarie Capital	Member at large
Ifeanyi Okonkwor	BASF	Member at large
Jeff Lacy	Trinity University	Member at large
Marcos Villarreal	The University of Texas, Rio Grande Valley	Member at large
Mike Alvarez	Shell	Member at large
Steve De Leon	Lockheed Martin (Retd.)	Member at large
Steve Gonzales	Vickrey Associates	Member at large
Tamara Crawford	Lockheed Martin	Member at large
Tramaine Chargois Singleton	Halliburton	Member at large

ADVISORY BOARD

Annie Carter | *Chevron Phillips (Retd.)*

Stuart Mussler | *ConocoPhillips*

Crespin Guzman | *Texas Civil Engineering Foundation*

Pat Rossman | *BASF*

Bridget Lauderdale | *Lockheed Martin*

Trudy Sullivan | *Raytheon*

DONORS & PARTNERS

Platinum: 50K+

Boeing
 ConocoPhillips
 Lockheed Martin
 Raytheon
 Shell Oil Company
 Tocker Foundation

Diamond: 25 - 50K

3M
 BASF
 Chevron
 Chevron Phillips Chemical
 Halliburton Foundation
 The University of Texas at Austin

Gold: 15 - 25K

Arconic Foundation
 Dow Chemical
 Hillcrest Foundation
 Rackspace

Silver: 10 - 15K

Annie Lee Robbins Foundation
 Enbridge Inc.
 Graham Perry Charitable Trust
 Marathon Oil Company
 Permian Basin Area Foundation
 Port Arthur Industrial Group

Bronze: 5 - 10K

Emerson Process Management
 Harry W. Bass Jr. Foundation
 Kathy & Bob Zerda
 McCoy Foundation
 Pratt and Whitney Canada Corp.
 Marcia & Otto Koehler Foundation
 Workforce Solutions of West Central Texas
 WP & Bulah Luse Foundation

FRIENDS of TAME

Albertsons
 Amazon Smile Foundation
 Anahita Goudarzi
 Andy Deck
 Annie Carter
 Arantza Garcia
 BASF Total Petrochemicals

Britiany Hayes
 Cabela's
 Casmen Gantner
 Central Market
 Cheniere Energy Inc
 Chevron Phillips
 David Morris
 Dell
 Dessie Sherrill
 Enbridge
 Exxon Mobil Corporation
 Fort Worth Aviation Museum
 Grant Butkus
 Harris County
 HEB
 Houston Hispanic Forum
 IBM
 Ineos
 Julie Johnson
 Kimberly Cornett
 Koch Companies
 Laura Bosworth
 Leslie Diamond
 Linda Collins
 Meha Jha
 Monica Duck
 Motiva Enterprises LLC
 National Instruments
 Northrop Grumman
 Oxbow
 Pacific Rim
 Paypal Giving Fund
 Rachel Green
 Radha Thothadri
 REI
 Ronnie Spraddlin
 Safe Place
 Sam Ziggrossi
 Samsung
 San Antonio Area Foundation
 Savita Raj
 Smiles of Austin
 Tamara Crawford
 Teresa Gorchs
 Texas ASCE
 Texas Board of Prof Engineers
 The City of Port Arthur
 Tramaine Singleton
 Valero
 Veolia
 Wayman Smith

PARTNERS

School Districts

Alvin ISD
 Amarillo Area Center for Advanced Learning
 Beaumont ISD
 Birdville ISD
 Brenham ISD
 Bridge City ISD
 Dallas ISD
 Dumas ISD
 George West ISD
 Georgetown ISD
 Hitchcock ISD
 La Porte ISD
 Lake Travis ISD
 Navarro ISD
 Northside ISD
 Round Rock ISD
 Stratford ISD
 Wimberley ISD

Community Partners

Elgin Public Library
 Fort Worth Aviation Museum
 Harris County
 HESTEC
 Houston Hispanic Forum
 Permian Basin Petroleum Museum
 Port Arthur Public Library
 Round Rock Chamber of Commerce
 Texas ASCE
 Texas Board of Professional Engineers
 Wichita Falls ISD Career Education Center
 Workforce Solutions of West Central Texas

Universities

Angelo State University
 Lamar University
 LeTourneau University
 Odessa College
 St. Philip's College
 Tarrant County College
 Texas A&M University
 Texas Tech University
 The University of Texas Rio Grande Valley
 The University of Texas at Austin
 University of Houston

See where a little inspiration can take you!



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