What is *FIRST*®?

Slides courtesy of *FIRST*® in Texas

info@firstintexas.org

FIRST® LEGO® LEAGUE JR.

FIRST® LEGO® LEAGUE

FIRST® TECH CHALLENGE

FIRST® ROBOTICS COMPETITION

FIRST® is…

Inspiring youth to become science & technology leaders & innovators,
by engaging them in exciting, experiential, Mentor and project-based programs that teach science, technology, engineering, and math (STEM) skills, inspire innovation, and foster well-rounded life capabilities.

FIRST LEGO LEAGUE JR.

FIRST LEGO LEAGUE

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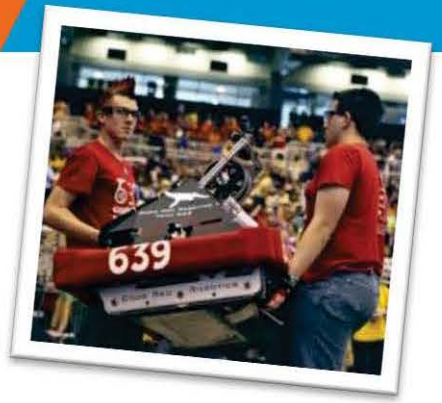
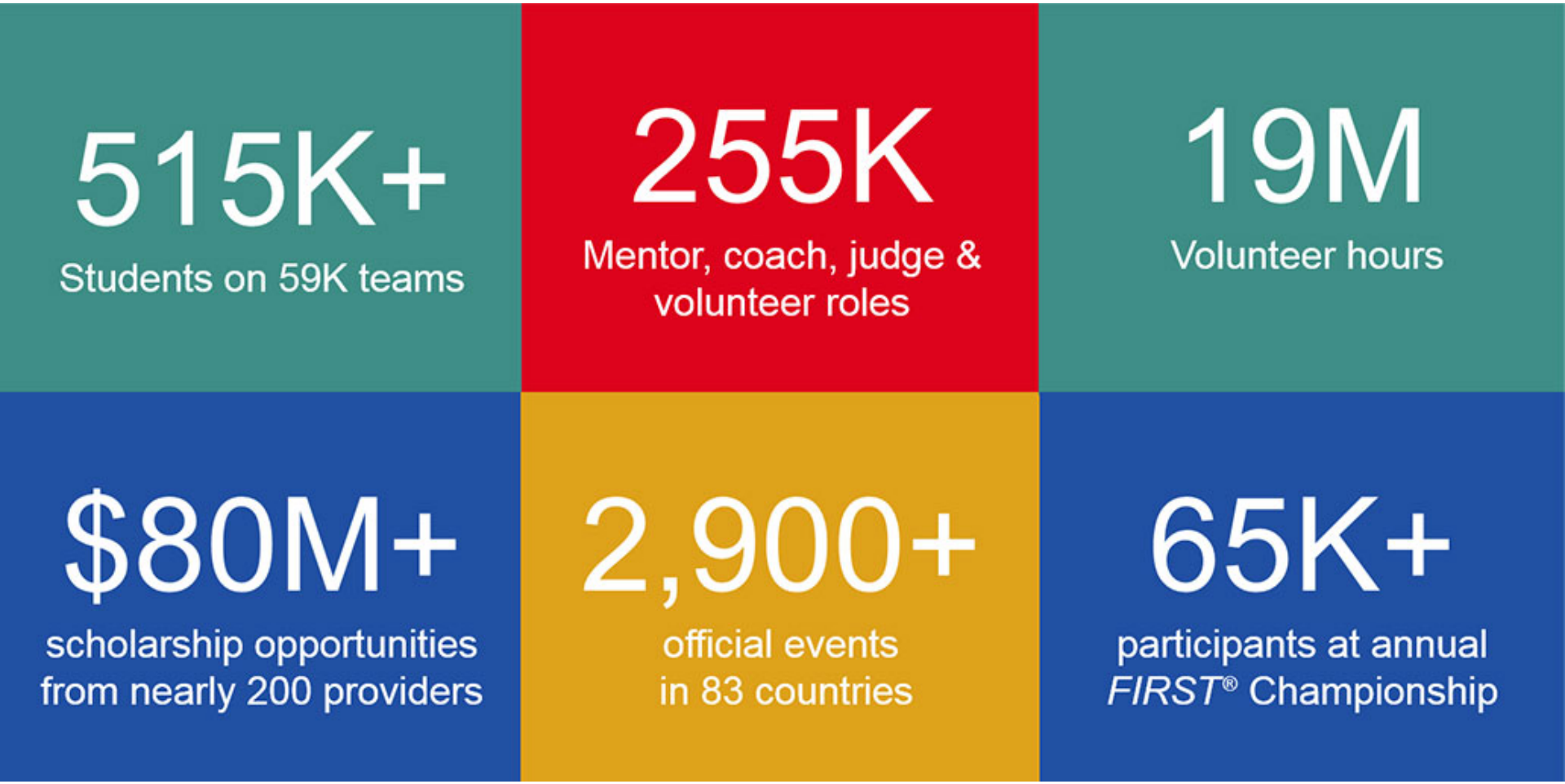


FIRST® At-a-Glance 2017-2018



FIRST® Tech Challenge

- ***Teams***
  - Up to 15 members, 7-12 grade
  - 2+ adult mentors
  - Multiple teams per school/group
- ***Robot***
  - 18” x 18”, max weight 42 lbs
  - Multiple kit options available
    - other materials as desired
- ***Season***
  - Kickoff: September 8th 2018
  - Open build season
  - Competitions: October - April

FIRST® Robotics Competition

- ***Teams***
  - 10+ members, 9-12 grade
  - 2+ adult coaches/mentors
  - 1 team per school/group
- ***Robot***
  - Industrial-sized (150lbs)
  - Standard kit of parts
    - other materials as desired
- ***Season***
  - Kickoff: January 5th 2019
  - 6 week build season
  - Competitions: March-April

FIRST® Challenges & Skills

Technical

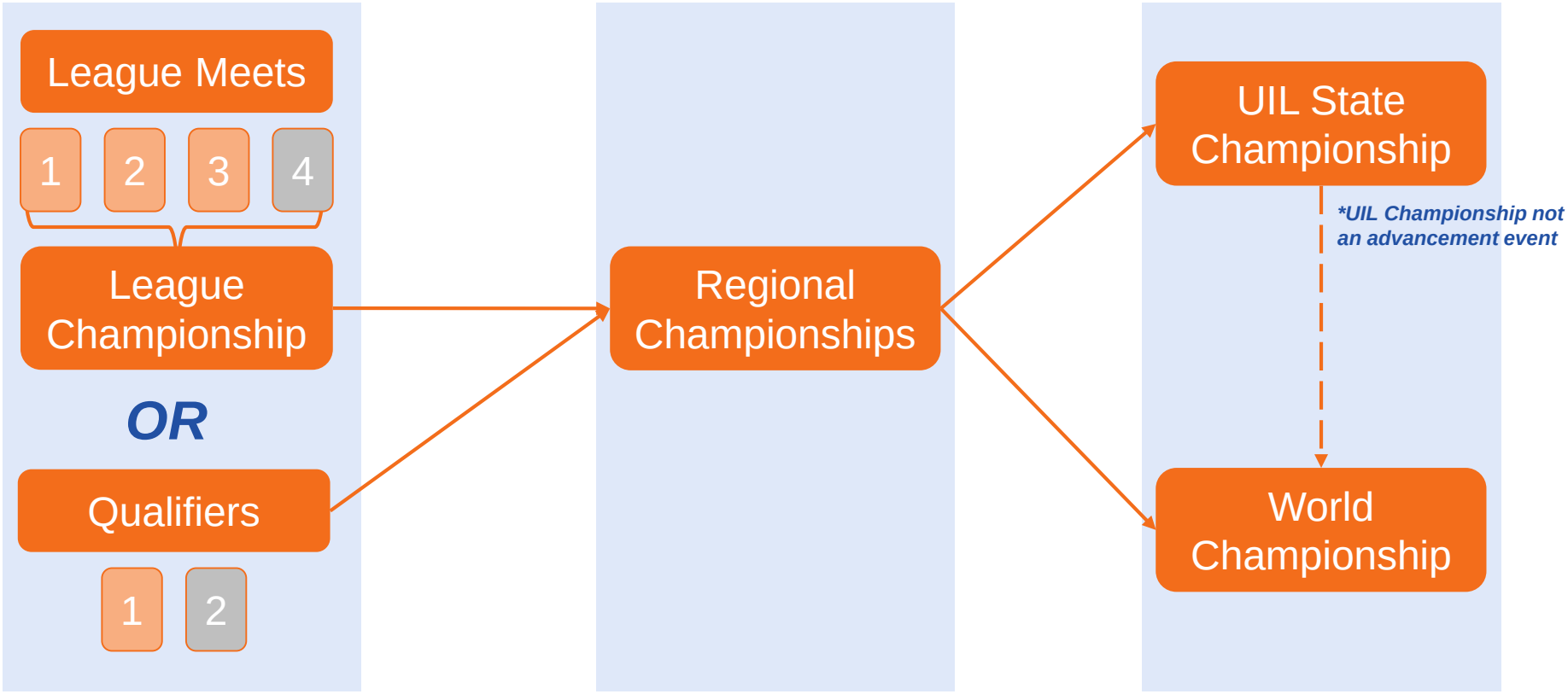
- Mechanical Design
- CAD
- Programming
- Electronics & Wiring
- Pneumatics
- Machining & Manufacturing
- Iteration
- Physics & Math
- Engineering Notebook

Non-Technical

- Outreach
- Fundraising
- Business Plan
- Marketing & Branding
- Presentations/Public Speaking
- Team Spirit
- Website
- Writing (Awards)
- Scouting & Strategy

FIRST® : Competitions

FIRST® Tech Challenge



FIRST® : Competitions

FIRST® Robotics Competition

UIL Championship standing based on performance at this event

FIRST® Rookie Costs

FIRST® Tech Challenge

- Rookie Team: **$1,500 - $2,000**
  - Registration: **$275**
  - Kit & Electronics: **$725 - $1,000**
  - Local Event Registration: **$250-$400**

FIRST® Robotics Competition

- Rookie Team: **$10,000 - $25,000**
  - Registration: **$5,000**
    - Includes Standard Kit of Parts & Registration for 2 District Events

Additional costs in Rookie Total:

- Materials, tools, travel, food, team shirts and other optional items will vary
- Registration fees for state & world championship events

FIRST® in Texas Funding: Grants

Texas Workforce Commission:

- Eligibility requirements: All students must be between 9th – 12th grades and must be living in the state of Texas

***FIRST*® Robotics Competition:** Up to **$5,000** Rookie Grant

***FIRST*® Tech Challenge:** Up to **$1,525** Rookie Grant

Other grants available through *FIRST*® in Texas and *FIRST*® from Dell, NASA, Rackspace, 3M, National Instruments, Qualcomm, etc.

FIRST® in Texas: Grant Application

- One application for all *FIRST*® in Texas grants
- Opens mid-August
  - http://firstintexas.org/grants/apply/
- ***For new teams:*** register with *FIRST* first!
- Apply when you receive your temporary (or permanent once you pay) team number

FIRST® in Texas: Grant Application

Data that team coaches will need to complete the application:

- Team Number & Program (each team must apply separately)
- Two (2) Contacts (email & phone)
- School(s)/ISD(s) or Organization
- Rookie season
- Highest & lowest student grade levels
- Team demographics (including race/ethnicity, gender, & socio-economic level)
- Adult volunteers & mentors information

If teams receive a grant award:

- Team Shipping & Billing Address
- W-9 w/ tax ID (EIN)
- Team Roster on School Letterhead

FIRST® in Texas: Grant Application

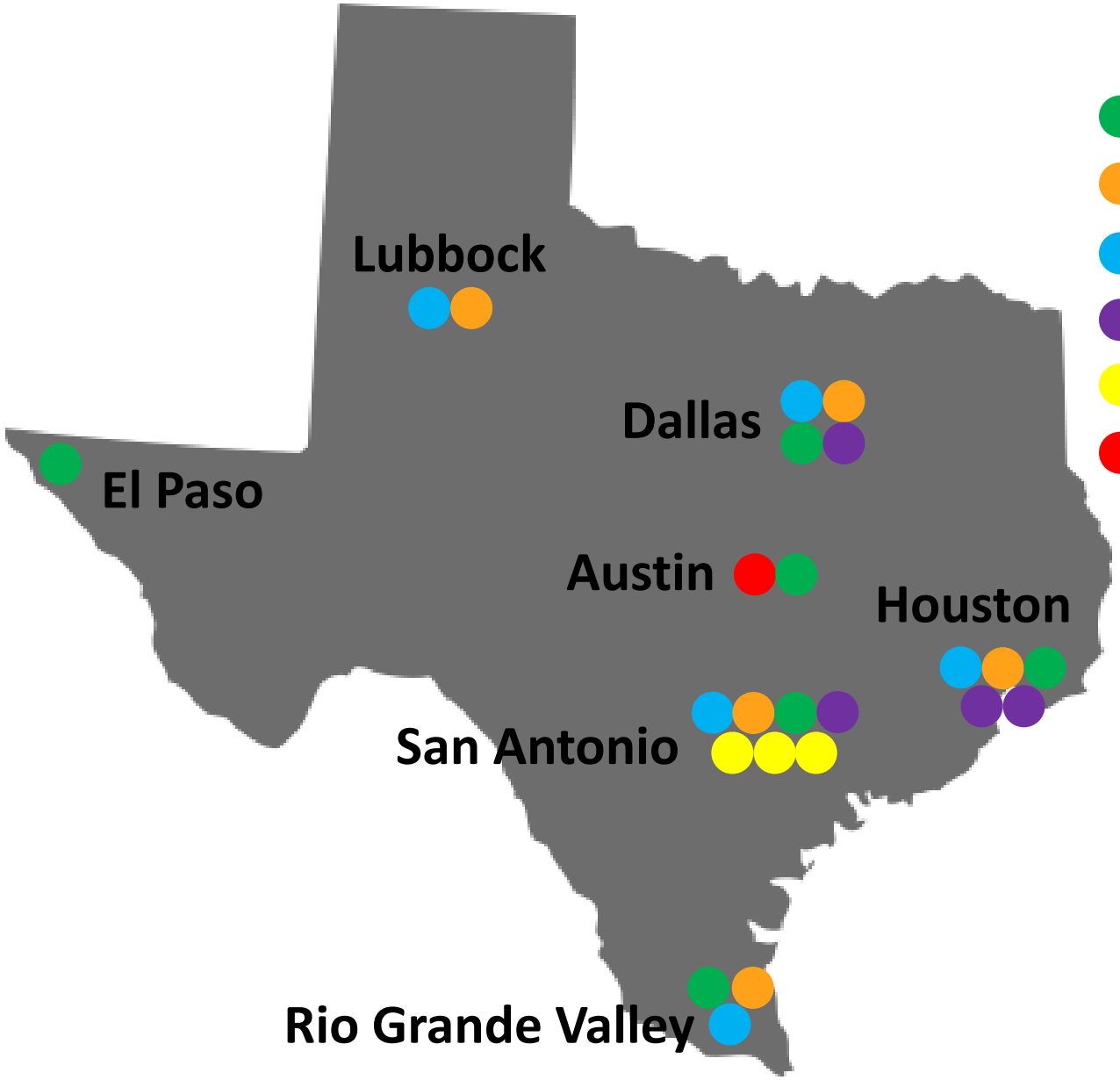
FIRST® in Texas Mission:

Increase STEM accessibility for low-income and underrepresented students

- Applications will be scored more highly when teams include larger numbers of:
  - Females
  - Students eligible for reduced price or free lunch
  - Students from Title I schools
  - Under-served minority students

FIRST® in Texas: Resources

- ***Workshops***
  - Sustainability & Fundraising
  - Social Media & Marketing
  - Student Diversity Recruitment
- ***Mentor Match System***
  - http://firstintexas.org/resources/mentors/
- ***Other Resource Links***
  - http://firstintexas.org/resources/



Organizers:

- FLL/FLLJr. Partners: **6**
- FTC Partners: **5**
- Regional Directors: **5**
- Senior Mentors: **4**
- VISTAS: **3**
- *FIRST* in Texas

Teams (2017-18):

FLLJr.: **378**

FLL: **1,481**

FTC: **659**

FRC: **162**

FIRST®
IN TEXAS

FIRST® Impact: More than Robots

- ***STEM Awareness, Skills and Intent***
  - Increase the number of youth who pursue post-secondary education and careers in STEM-related fields and industries
- ***Innovation and Entrepreneurship***
  - Inspire youth to become leaders and innovators in their field and society
- ***21st Century Work-Life Skills***
  - Enable youth to develop valuable, real-world skills applicable to all career choices and outcomes
  - Ethos of Gracious Professionalism® and Coopertition®

FIRST® IMPACT

10 years of evaluation data indicates that with participation in ***FIRST***,® team members are:

STEM MAJOR CITED BY *FIRST* PARTICIPANTS

2x as likely to major in science or engineering

Major in engineering **41%**

33% of women major in engineering

Source: Brandeis University, 2005 Evaluation of *FIRST*® Robotics Competition Alumni

SCHOOL ENGAGEMENT INCREASES FOR *FIRST* PARTICIPANTS

More interested in doing well in school

87%	86%	88%
FIRST® LEGO® League	*FIRST*® Tech Challenge	*FIRST*® Robotics Competition

Plan to take a more challenging math or science course

84%	90%
FIRST® Tech Challenge	*FIRST*® Robotics Competition

More interested in going to college

88%	87%	91%
FIRST® LEGO® League	*FIRST*® Tech Challenge	*FIRST*® Robotics Competition

Source: Brandeis University, 2011 *FIRST*® Tech Challenge – *FIRST*® Robotics Competition Evaluation and 2013 *FIRST*® LEGO® League Evaluation

21ST CENTURY WORK-LIFE SKILLS GAINED BY *FIRST* PARTICIPANTS

Improved problem solving skills	Increased time management skills	Increased conflict resolution skills	Strengthened communication skills
98%	95%	93%	OVER 76%

REV 1/17

Source: Brandeis University, 2011 *FIRST*® Tech Challenge – *FIRST*® Robotics Competition Evaluation and 2013 *FIRST*® LEGO® League Evaluation

FIRST ALUMNI IN STEM CAREERS

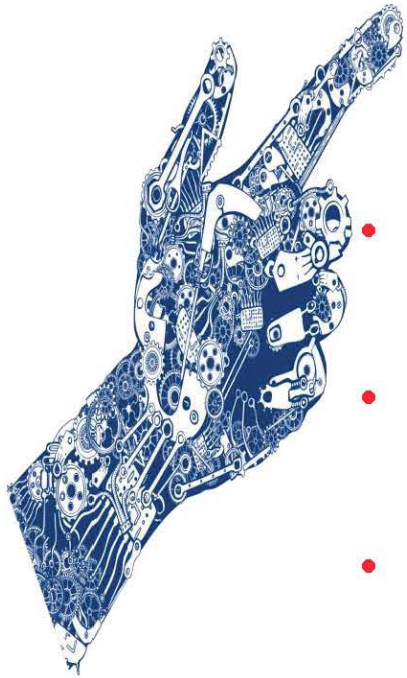
OVER **75%** of Alumni are in a STEM field as a student or professional

Source: *FIRST*, 2015 *FIRST* Alumni Survey

FIRST® Scholarship Program

Providing over $80 million of scholarship opportunities from nearly 200 providers

FIRST® Alumni are in demand:



- **~ 10%** of the 2016 incoming Freshman class at **Massachusetts Institute of Technology (MIT)**
- **10%** of the 2016 incoming Freshman class at **Milwaukee School of Engineering (MSOE)**
- **14%** of the 2016 incoming Freshman class at **Worcester Polytechnic Institute (WPI)**
- **36%** of the 2016 incoming Freshman class at **Olin College of Engineering**
- **21%** of the 2015 incoming Freshman class at **Kettering University**
- **30%** of the 2015 incoming Freshman class at **Capitol Technology Institute**

FIRST® UIL Robotics Events

- UIL Robotics State Championship – *FIRST*® Division
  - When: April 4th – 6th 2019
  - Where: Palmer Events Center, Austin TX
  - More Info: www.firstintexas.org/uil

- Additional *FIRST*® events during fall & spring throughout Texas
  - April 2019: World Championship in Houston!
  - Visit www.firstintexas.org/events

Start a *FIRST*® Team

- Visit the *FIRST*® in Texas Website:
  - www.firstintexas.org/resources
- Visit the *FIRST*® Website:
  - www.firstinspires.org
- Email *FIRST*® in Texas:
  - info@firstintexas.org

FIRST® is… #morethanrobots

- This isn't a Robot…