



# More Than Robots®

## // TABLE OF CONTENTS

Introduction	03	Youth Robotics Teams Inspire at <i>FIRST</i> Championship in Houston	28
Leadership Letter	05	Sponsors and Contributors	30
<i>FIRST</i> ® Longitudinal Impact	06	Thank You to Our Retiring Long-Time Board Member: John Abele	31
<i>FIRST</i> Programs	08	<i>FIRST</i> & Qualcomm: A Pioneering Partnership to Inspire Young Innovators	37
“More Than Robots” Documentary Captures Inspiring and Transformational <i>FIRST</i> Experience	10	Program Delivery Partners	43
Building <i>More Than Robots</i>	15	2022 <i>FIRST</i> Volunteers of the Year	44
2021-2022 Season Highlights	20	2022 Woodie Flowers Award Recipient	46
<i>FIRST</i> ® LEGO® League	23	Financials	47
<i>FIRST</i> ® Tech Challenge	25	Leadership	48
<i>FIRST</i> ® Robotics Competition	27		

## // REMEMBERING “MOM OF *FIRST*” EVELYN KAMEN

Evelyn Kamen, mother of *FIRST* founder Dean Kamen, passed away on November 25, 2021, at age 96. She was a schoolteacher who raised four children with her husband and inspired hundreds of thousands more through her classrooms and her contributions to *FIRST*. She found great joy from attending *FIRST* events and helping in the selection of the Bart Kamen Scholars and the Dean’s List students, through which she got to know stories of some amazing *FIRST* students.



“

My mother was an important member of a small group of visionaries that helped me found *FIRST* over thirty years ago. During the start-up years she personally managed all the finances! But her greatest and most lasting contribution to *FIRST* was her enthusiasm and belief in its mission, visible in her absolute confidence that we could change the world.”

– Dean Kamen in a [letter to the \*FIRST\* community](#) announcing her passing.

*FIRST*® has always been about **More Than Robots**®. We are an **inclusive community** preparing young people for the future. We’re a **global movement** to get kids excited about leadership and innovation in STEM (science, technology, engineering, and math). We’re a **foundational ethos** of *Gracious Professionalism*® and *Coopertition*®. We’re a **thrilling, inspiring sport** where every kid can go pro. **And the world is taking notice.**

This season, youth robotics participants applied our *More Than Robots* attitude towards embracing problem-solving and innovation and tackled transportation-themed challenges in *FIRST*® FORWARD<sup>SM</sup> presented by Qualcomm. They were supported by our incredible community of mentors, educators, event volunteers, sponsors, donors, and alumni.

Through *FIRST*, participants gain the community, skills, and self-confidence to build a better future. Our mentor-guided, team-based programs allow young people to ignite their innate innovative spirit and, most importantly, recognize their worth and abilities are **more than they ever imagined.**

**We are More Than Robots.**



**Belief in oneself  
is nothing short of  
life-changing.**



**When we expand  
STEM, we expand  
esteem.**



**Chris Moore** is the chief executive officer of *FIRST*



**Kelly Ortberg** is the chairman of the *FIRST* Board of Directors



**Dean Kamen** is the founder of *FIRST*

“

We hope the inspiring stories you'll read throughout this report will help affirm that ***FIRST* is truly a transformative experience for kids – one we couldn't deliver without you.**”

– *FIRST* Leadership

The last few years have been a challenge to us all – **especially our children**. The social, emotional and mental well-being of our nation's youth has been impacted by the pandemic in ways that can affect them for the rest of their lives. Parents, educators, and other caregivers are trying to find ways to help kids cope with ongoing stress and worries.

At *FIRST*, we strive to create places and spaces where students learn to believe in themselves – and **this belief is nothing short of life-changing**. When you give kids **the power** of self-esteem and the tools to drive their ideas forward, their potential is limitless. This is just one of many ways ***FIRST is More Than Robots***.

As we've done so many seasons before, our 2021-2022 season, ***FIRST FORWARD* presented by Qualcomm**, was developed with our students in the forefront of our minds. Together, we inspired kids everywhere to explore the future of transportation – and explore they did. *FIRST* students went **full speed ahead** into the *FIRST FORWARD* season challenges, showcasing their creativity, resilience, and innovative spirit at every turn.

Student access to *FIRST* has been challenged since 2020 by pandemic-driven loss of in-person learning. This season saw the return of many in-person events and, for the first time since 2019, culminated in our international *FIRST* Championship. **Youth participation increased significantly to over 534,000 students**, up 68% from last season (see page 20).

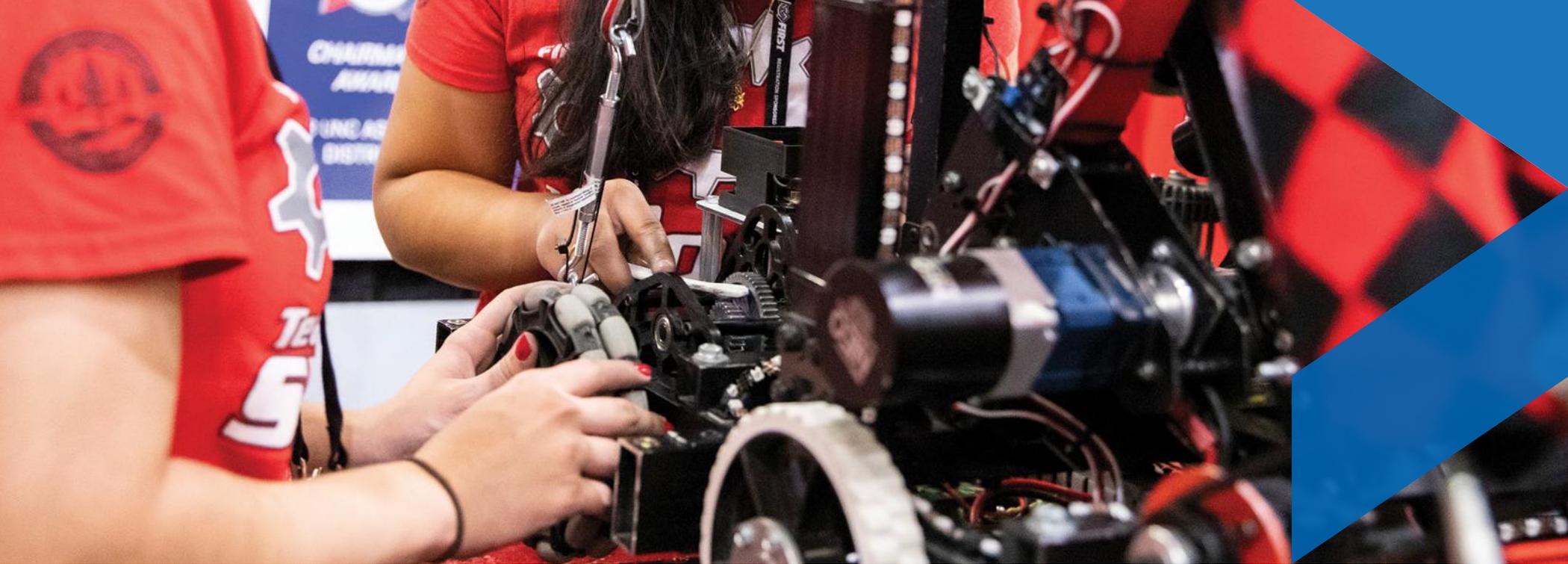
We continue to **work strategically to remove barriers** and ensure greater access to *FIRST* programs for all young people through investment in training and resources, thought leadership, partnerships, grants, and more (see page 21).

This year, we **celebrated the global release of the Disney+ documentary “*More Than Robots*,”** directed by actress and filmmaker Gillian Jacobs (see page 10). Thirty years after our inaugural *FIRST* Robotics Competition event, the documentary follows four teams of teenagers from around the world as they prepared for the 2020 *FIRST* Robotics Competition – and how the students pivot to address pandemic needs in their communities following the season's abrupt cancellation.

While we've been about *More Than Robots* since our beginning, it has taken on an even deeper meaning these past few years. The world needs kids like our participants more than ever. *FIRST* has a **proven, lasting impact** on their lives (see page 06), which enables and inspires them to change the world for the better.

With extraordinary generosity and collaboration from our sponsors, donors, volunteers, mentors, educators, alumni, parents, and other supporters, **we continue to move *FIRST* forward**. We hope the inspiring stories you'll read throughout this report will help affirm that ***FIRST* is truly a transformative experience for kids** – one we couldn't deliver without you. Thank you.

Sincerely,  
Chris, Kelly, and Dean



## FIRST Longitudinal Impact

### // RESEARCH SHOWS FIRST HAS LASTING IMPACT ON STUDENTS

- › Eight years into data collection, the *FIRST* Longitudinal Impact Study provides ongoing evidence that *FIRST* is having lasting impact on participating students.
- › Participants from communities who have been historically underrepresented in STEM are having gains in STEM outcomes and impact; gains continue to be greater for girls and young women in *FIRST*.
- › STEM interest and attitudes are transforming into behaviors and actions beyond high school where the majority of *FIRST* participants are majoring in STEM.

### An Increase in STEM-Related Attitudes

96 months after enrollment in the study, *FIRST* students and alumni are still roughly two times more likely to show an increase in STEM-related attitudes than comparison group students.



### Higher Levels in STEM Outcomes in *FIRST* Female Students

At 96 months, *FIRST* female students and alumni are more likely to show significantly higher levels in STEM outcomes than comparison female students.



“

*FIRST* has helped me to **see opportunities to learn and problem solve in all aspects of my life and to encourage others to do the same.** Also not being afraid to fail and **accepting that I will make mistakes, but that means the opportunity to learn** from these is so much greater. That is the biggest impact *FIRST* and its mentors has had on me.”

–Longitudinal study participant

Detailed information can be found at [www.firstinspires.org/impact](http://www.firstinspires.org/impact)

SOURCE: *FIRST* Longitudinal Study: Findings at 96-Month Follow-up, Brandeis University, April 2022. The study included 570 *FIRST* students and 385 comparison group students. The comparison group included students who did not participate in *FIRST* programs, but were enrolled in science and math classes at the same schools. All students received a baseline survey and follow-up surveys each year. Overall, 75% of students remained in the study at year eight.

### Pursuing College Pathways in STEM

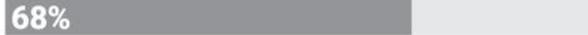
By their fourth year of college, *FIRST* alumni are significantly more likely to pursue college pathways into engineering and computer science than comparison students. They are more likely to be interested in majoring in computer science, engineering, and robotics; to take computer science and engineering courses; and to declare a major in computer science or engineering.

#### DECLARE A MAJOR IN STEM

FIRST ALUMNI



COMPARISON GROUP

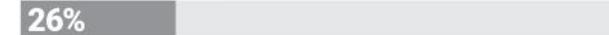


#### DECLARE A MAJOR IN ENGINEERING OR COMPUTER SCIENCE

FIRST ALUMNI



COMPARISON GROUP



#### MORE LIKELY TO TAKE ENGINEERING COURSES OR COMPUTER SCIENCE COURSES.



#### MORE LIKELY TO DECLARE A MAJOR IN ENGINEERING OR COMPUTER SCIENCE.



By their 4th year of college, compared to their peers, female *FIRST* alumni:

#### DECLARE A MAJOR IN STEM

FIRST ALUMNI



COMPARISON GROUP

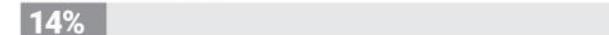


#### DECLARE A MAJOR IN ENGINEERING OR COMPUTER SCIENCE

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COMPARISON GROUP



#### MORE LIKELY TO TAKE ENGINEERING COURSES OR COMPUTER SCIENCE COURSES.



#### MORE LIKELY TO DECLARE A MAJOR IN ENGINEERING OR COMPUTER SCIENCE.



# FIRST Programs

## // A SUITE OF HANDS-ON, STEM LEARNING PROGRAMS

FIRST combines the rigor of STEM learning with the fun and excitement of traditional sports and the inspiration that comes from community. Participants benefit from a suite of programs that have a proven impact on learning, interest, and skill-building inside and outside of the classroom.



*FIRST* changed who I was. **Made me passionate about something for the first time in my life.** Made me develop my work ethic. Gave me extremely valuable leadership experience.”

– FIRST alum

### FIRST® LEGO® League Divisions

FIRST® LEGO® League guides youth through STEM learning and exploration at an early age. From Discover to Explore and then to Challenge, students will understand the basics of STEM and apply their skills in an exciting competition while gaining productive learning habits, confidence, and teamwork skills along the way.

**FIRST  
LEGO  
LEAGUE**

**DISCOVER**

AGES  
4-6

GRADES  
PreK-1

#### FIRST LEGO LEAGUE DISCOVER

This playful introductory STEM program ignites children's natural curiosity and builds their habits of learning with hands-on activities in the classroom and at home using LEGO® DUPLO® bricks.

**FIRST  
LEGO  
LEAGUE**

**EXPLORE**

AGES  
6-10

GRADES  
2-4

#### FIRST LEGO LEAGUE EXPLORE

Teams of students focus on the fundamentals of engineering as they explore real-world problems, learn to design and code, and create unique solutions made with LEGO bricks and powered by LEGO® Education SPIKE™ Essential or WeDo 2.0.

**FIRST  
LEGO  
LEAGUE**

**CHALLENGE**

AGES  
9-16\*

GRADES  
4-8

#### FIRST LEGO LEAGUE CHALLENGE

Teams of students engage in research, problem solving, coding, and engineering – building and programming a LEGO® Education SPIKE™ Prime or LEGO® MINDSTORMS® robot that navigates the missions of a robot game. They also participate in the Innovation Project to identify and solve a relevant real-world problem. \*Ages vary by country



## Young Innovators Use Skills and Imagination to Solve Problems as a Team



Grades PreK-8 · Ages 4-16\*

### THE CHALLENGE

Through a guided, global robotics program, students are introduced to STEM learning and exploration at an early age. Children can begin with Discover (ages 4-6) and progress through Explore (ages 6-10) and Challenge (ages 9-16\*), or join at any division based on their age or grade level.

### THE JOURNEY

Children are introduced to STEM concepts and develop habits of learning through engaging, fun challenges using LEGO Education materials, with opportunities to show their skills through festivals and competitions.

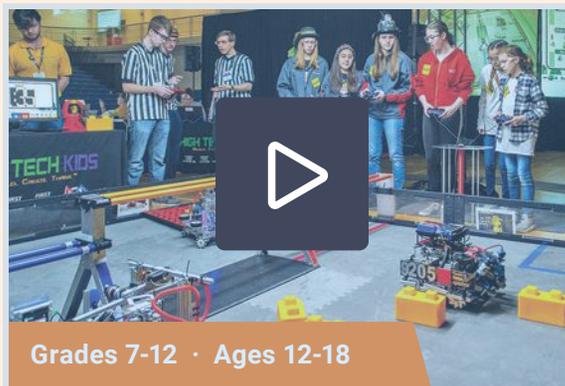
### THE OUTCOME

Students gain real-world problem-solving experiences that inspire them to experiment and grow their critical thinking, coding, and design skills while building confidence, growing their knowledge, and developing habits of learning.

\*Ages vary by division and country



## It's Way More Than Building Robots



Grades 7-12 · Ages 12-18

### THE CHALLENGE

Student teams design, build, and program robots, built from a reusable platform powered by Android technology, to compete head-to-head in an alliance format. Students are encouraged to create a team identity and be an ambassador for *FIRST* and STEM in their communities.

### THE JOURNEY

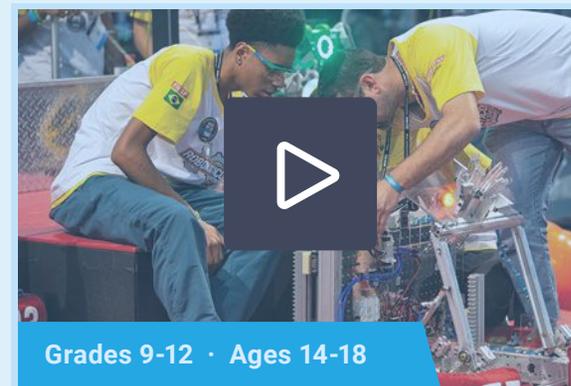
Teams compete at local and regional events, qualifying up to the *FIRST* Championship. They earn awards based on their teamwork, creativity, innovation, and the engineering design process.

### THE OUTCOME

While developing their STEM skills and mastering engineering principles, students learn the value of persistence, innovation, teamwork, and the engineering design process. Participants and alumni have access to education and career discovery opportunities, connections to scholarships and employers, and a place in the *FIRST* community for life.



## An Exciting Sport Built Around the World of STEM



Grades 9-12 · Ages 14-18

### THE CHALLENGE

Under strict rules, with limited time and resources, teams use sophisticated technology to build and program industrial-size robots for a challenging field game. Each team creates a team identity, raises funds to meet its goals, and works to promote STEM in the local community.

### THE JOURNEY

At district and regional events, cheering crowds root for teams as students compete with their robots for prestigious awards and a coveted spot at the *FIRST* Championship.

### THE OUTCOME

As students learn real-world engineering concepts, they build their confidence and workforce skills and connect with professional team mentors and sponsors who can help them succeed. Plus participants and alumni have access to education and career discovery opportunities, connections to scholarships and employers, and a place in the *FIRST* community for life.



## “More Than Robots” Documentary Captures Inspiring and Transformational *FIRST* Experience

Earlier this year, Disney+ and *FIRST* premiered the Gillian Jacobs directed film “[More Than Robots](#),” an original documentary produced by Supper Club, at the world-renowned SXSW (South by Southwest) Film Festival and launched it for international streaming on Disney+.

The moment marked an important milestone for the *FIRST* community. The concept of *FIRST* being *More Than Robots* was nothing new, of course – anyone who has ever been involved in our sport knows that well. But the documentary hooked new audiences with an inspiring, suspenseful sports story and allowed us to introduce millions of people to the transformational experience of *FIRST*. Upon watching the documentary, viewers understood what makes *FIRST More Than Robots* – and what makes our community so special.

“

Ultimately, knowing how amazing these kids are and what a great organization *FIRST* is, we felt confident heading into the film.”

– Jason Sterman, producer



Brooke Blew, vice president of marketing & communications, *FIRST* (back, left); Jason Sterman, producer, Supper Club (middle); and Aaron, *FIRST* participant, *FIRST* Robotics Competition Team 6904 "TeraWatts" (front, right) speak during a panel discussing "More Than Robots" at the 2022 *FIRST* Championship.

## // THE CONCEPT AND VISIONARY TEAM BEHIND "MORE THAN ROBOTS"

Talks for the film began in late 2019, when producer Jason Sterman (Supper Club) connected with Lucasfilm about future projects. "Lucasfilm made us aware that *Star Wars: Force for Change* would be the 2020 *FIRST* season sponsor and that in working with their partners at *FIRST*, there was an idea for a documentary. It was all very kismet," said Jason.

Supper Club immediately mobilized to put the film together ahead of the upcoming *FIRST* Robotics Competition season, set to kick off on January 4, 2020. "We traditionally take more time to develop and prep on our projects, but it was exciting to jump into something where we weren't sure what would unfold," said Jason. "Ultimately, knowing how amazing these kids are and what a great organization *FIRST* is, we felt confident heading into the film."

Another reason why Jason and the production crew team may have felt so confident taking on the project was because Disney could vouch for the credibility of *FIRST* as an organization and as a life-changing experience for kids. For more than 20 years, Disney has supported *FIRST* with financial, in-kind and mentorship resources. In recent years, Lucasfilm's philanthropic initiative *Star Wars: Force for Change* has also supported *FIRST*, and together the organizations continue to bring hands-on learning opportunities and mentorship to more young people around the world, empowering them to not only think big, but to develop the skills needed to be the next generation of innovators.

As Jason got rolling, the first thing he needed to do was find the director who would have the vision and expertise to helm the documentary.

He and his team knew exactly who to turn to: Gillian Jacobs. "[Gillian] approaches every project with a desire to tell the best story, but she's also the type of person who's always looking to expand her knowledge, no matter the subject," he said. For Gillian, it was meant to be. "I was already aware of *FIRST* and had interviewed a team for a print publication years earlier," she said. "Given my ongoing interest in STEM and previous documentary work in that area, it seemed like a great fit. The more I learned about science, engineering and mathematics, the more curious I became. All of that led to 'More Than Robots.'"



FIRST CEO Chris Moore (2nd row, 7th from left), FIRST founder Dean Kamen (1st row, 3rd from left), FIRST team coach Norman Morgan (right, behind poster), and students from FIRST Robotics Competition teams 2468 "Team Appreciate," 2583 "RoboWarriors," and 6800 "ViperBots Valor" attend the 2022 SXSW Film Festival.

## // MEET THE STARS

"More Than Robots" follows four FIRST Robotics Competition teams as they make their way through their competition events with the hopes of making it to the 2020 FIRST Championship. One member of each team is prominently featured, and each team has an adult mentor who the viewers get the opportunity to know as well.

Diversity was important to the filmmakers when they began the process of choosing the teams to highlight. "We knew that we wanted to be as diverse as possible in choosing the teams to follow, in order to properly represent the global reach of FIRST and the importance of STEM around the world," said Jason. "Additionally, the great thing about making this film for Disney+ is that it's a global platform, so we didn't want it to feel like the film was being put through the lens of Americans just for other Americans. So with that in mind, we purposely chose teams in other countries."

## // THE TEAMS

### Vitruvian Bots

The Vitruvian Bots team hails from a high school in Los Angeles. We meet Jacob, who has always been fascinated with numbers and airplanes. Jacob loves math and likes to play classical music on the piano. This is his first time on the team. Besides the opportunity to build robots, Jacob feels like he is improving his people skills by being on the team.

### TeraWatts

Also from the greater LA area, the TeraWatts team is represented by Aaron. Aaron is a handy guy to have on the team as he can apply himself to all the aspects of robot building. Aaron has always kept to himself but being on the team has made him more extroverted.

### Nautilus

The Nautilus team is from Mexico City. Mariana is a 17-year-old who loves music and has always had a desire to change the world. She is also part of the team's sub-committee that works to promote FIRST awareness through community work.

### Sakura Tempesta

From Chiba, Japan, Sakura Tempesta was founded by Kanon, a FIRST alum who attends college in the U.S. Unlike the other teams that are associated with a particular school, this team is community based. Kanon has always been interested in robots and was excited by the prospect of getting to build a large one for competition. She acts as a mentor for her team.

Kanon (left), *FIRST* alum and mentor, *FIRST* Robotics Competition Team 6909 “Sakura Tempesta,” works on the team’s robot with a student participant, as featured in footage from “More Than Robots.”



## // A GLOBAL PANDEMIC HALTS PRODUCTION

From the jump, everyone involved in the film envisioned that “More Than Robots” would bring about greater awareness for *FIRST* and the importance of STEM education experiences for young people. However, the filmmakers never expected that the production of the film would coincide with a global pandemic, and as that evolved, so did the vision for the film.

“We never lost sight of that original vision,” said Jason. “But the importance of the message the film conveys became clearer. By the end, the film really felt like a prime example of how *FIRST* has helped these kids discover more about their abilities and how they play a part in the world that we all live in.”

Despite the setbacks caused by the pandemic and the subsequent cancellation of the 2020 *FIRST* competition season, Gillian remained focused on celebrating the “dedication, passion, kindness, innovation and ingenuity” of the *FIRST* community. “Their principles of *Gracious Professionalism* and *Coopertition*, unique approach to competition, and dedication to others inspired me greatly and I wanted to share this remarkable program with the world,” she said.

## // AN “UNPRECEDENTED” FILM PRODUCTION

The production was shot at two high schools in Los Angeles, one in Mexico City and a third in Japan, just outside of Tokyo. The students were filmed at their schools, in their homes and wherever the team was meeting.

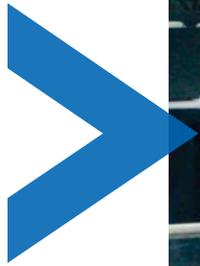
Initially the production was planned to be shot over four months, starting with the *FIRST* season kickoff in January 2020, and ending with the *FIRST* Championship in April. However, once everything was shut down in March due to the spread of COVID-19, and the *FIRST* Championship was canceled, the filmmakers continued to record in various unique ways throughout the rest of 2020 in order to continue capturing the events and stories of the teams and the kids.

“Gillian and I had many conversations in the early months of the pandemic about whether or not we should continue making the film,” said Jason. “There was no end in sight for COVID and the *FIRST* season had been canceled, so how could

we keep making a movie without an ending? These kids showed us that you can’t just give up, and from watching how they mobilized and did what they could with the resources they had, it was incredibly inspiring. Watching them gave us the motivation to keep going with the film, and it gave our story more weight.”

Summing up, Jason commented, “If there was any silver lining to the pandemic for us, it was that we were able to capture the true significance of *FIRST*, and we saw its impact in real time. *FIRST* teaches kids about much more than robots, and that’s what I hope audiences take away from the film, because it’s what we took away from making it.”

Gillian added, “I hope that this film inspires viewers in their own lives, in the same way it has me. And, if they have any interest in joining or mentoring a *FIRST* team, all the better!”



Robots from *FIRST* Robotics Competition teams 6904 “TeraWatts” (middle), 5553 “Robo’Lyon” (front, left), and 1515 “MorTorq” (back, right) compete at the Los Angeles Regional Event prior to the cancellation of the remainder of the 2020 *FIRST* Robotics Competition season due to the COVID-19 pandemic, as featured in footage seen in “More Than Robots.”



## // SIGNIFICANCE OF THE FILM

“More Than Robots” captures the essence of what it means to be part of *FIRST*: the teamwork, resilience, and hope that exists within our robotics community. It chronicles how an innovative, passionate, diverse community of students came together as a family and persisted during the toughest of times, bonded by their shared interest of building robots and using those transferable skills learned through *FIRST* to change the world. It allows audiences to truly get a sense for the excitement, heart, and hope of the unique and transformative experience of *FIRST*. The film was seen by millions of viewers around the world, bolstering broad awareness of *FIRST* programs and bringing greater awareness to the multifaceted benefits of STEM education experiences for children.

Every year at *FIRST* Championship, Dean Kamen (who was featured in the film!) presents the Founder’s Award to one organization or individual for exceptional service in advancing the ideals and mission of *FIRST*. It made perfect sense that Gillian Jacobs was the recipient of this honor at the 2022 *FIRST* Championship. In her acceptance speech via video, Gillian said, “I named this documentary ‘More Than Robots’ because as you all well know better than anyone, *FIRST* is about so much more than robots. I learned that it’s about teamwork, compassion, friendship, learning new skills, and challenging yourself to do things you never dreamed you were capable of.”

She continued, addressing the students directly: “You gave me hope, you gave me inspiration, and you are amazing and deserve to be celebrated.”

“

You gave me hope, you gave me inspiration, and you are amazing and deserve to be celebrated.”

— Gillian Jacobs, director



## Building More Than Robots

The *FIRST* community is *More Than Robots* because we are driven by our foundational ethos of *Gracious Professionalism* and *Coopertition*, which we express through the *FIRST* Core Values (right).

Every season, our teams, participants, and alumni innovate and use their skills as a force for good to make an impact in their backyards and on a global scale. These stories of *FIRST* students and alumni are just a sample of the thousands in our community worldwide that exemplify what it means to be *More Than Robots*.

### // FIRST CORE VALUES

Our community personifies the *FIRST* philosophies of *Gracious Professionalism*<sup>®</sup> (emphasis on high-quality work, the value of others, and respect for individuals and the community) and *Coopertition*<sup>®</sup> (displaying unqualified kindness and respect in the face of fierce competition) through our Core Values:

- **Discovery** We explore new skills and ideas.
- **Innovation** We use creativity and persistence to solve problems.
- **Impact** We apply what we learn to improve our world.
- **Inclusion** We respect each other and embrace our differences.
- **Teamwork** We are stronger when we work together.
- **Fun** We enjoy and celebrate what we do!



## // EMPOWERING EVERYONE TO SUCCEED

FIRST Robotics Competition team “Girls of Steel,” based at Carnegie Mellon University in Pennsylvania, is on a mission to empower everyone, especially women and girls, to believe they are capable of success in STEM. With that mission, an inclusive team environment that encourages excitement for learning, and a shared passion for STEM, the team is committed to creating meaningful impact on the wider community – women and girls in STEM and beyond.

One way they do this is through their [BuzzBand™](#) project, which was created as part of the 2021 FIRST Innovation Challenge. The BuzzBand is a wearable fitness device designed to make exercise accessible for youth with autism. Since the challenge, they received one of the eight 2021-2022 Lemelson-MIT InvenTeams® grants for \$10,000 to continue this project. With the help of this grant, the BuzzBand team worked to improve the design of the patent pending arm band device by creating and testing additional prototypes.

“My nine-year journey through *FIRST* truly transformed me [into] a passionate STEM ambassador.”

– Avanti, *FIRST* alum

## // A MISSION TO DIVERSIFY STEM FIELDS

Last year during her senior year of high school, recent *FIRST* alum [Avanti Ramraj](#) delivered a TEDx Talk about the use of gamification and role models as a means of overcoming stereotypes to diversify STEM. Her talk’s title, “There’s a Brown Girl in the Ring,” was inspired by a song based on a children’s game played in the West Indies where each child takes turns leading while the others imitate.

A *FIRST* Tech Challenge Dean’s List Award Finalist (awarded to extraordinary *FIRST* student leaders), Avanti began her *FIRST* journey at age nine with *FIRST* LEGO League, during which she discovered her strengths, confidence, compassion and love for STEM – while learning women make up only 28% of

the STEM workforce. “My nine-year journey through *FIRST* truly transformed me [into] a passionate STEM ambassador,” she said. “As a girl in STEM, I am on a tough path, but maybe it’s one where I become a role model.”

Avanti and her teammates embodied the mission and core values of *FIRST* through community outreach such as mentoring teams, teaching coding, and supporting PPE needs, and advanced twice to the *FIRST* Global Innovation Awards. Avanti continues to be the role model she sought to be in her local community, the *FIRST* community, and beyond.





## // BUILDING ROBOTS IN RURAL COMMUNITIES

FIRST Robotics Competition team "[CocoNuts](#)" is creating change in Arizona by starting rural FIRST teams in and around their Flagstaff community, which is home to a population of white, Indigenous, and Hispanic/Latinx students, and inspiring students' STEM interest in communities lacking access to in-depth programs through traditional school curriculum.

With grants from the Arizona Center for Afterschool Excellence and a FIRST Equity and Access grant, the team is helping pilot new teams in dormitory schools on the Diné Reservation, hosting training sessions and workshops to support coaches and teams through the entire season. The CocoNuts travel often to different Indigenous schools, hosting full-day FIRST LEGO League workshops, and has gone as far as Navajo Mountain, Utah, to help a team build a robot. During pandemic restrictions, the team continued with virtual robotics workshops and online mentoring. "Seeing these young students get excited to build their own robot even through a screen was inspiring," said Hannah, a recent FIRST alum.

The team was featured on [StarWars.com](#) as part of Build the Future powered by *Star Wars: Force for Change*, a joint initiative between FIRST, Disney and Lucasfilm to give FIRST teams around the world an opportunity to amplify their stories as forces for good. The CocoNuts shared their Star Wars-inspired mantra: "We are the CocoNuts, and we are the hope for the future!"



# The hope for the future



# Robotics is for everyone

## // LEVELING THE STEM PLAYING FIELD

FIRST Tech Challenge team "[WHS Robotics](#)" is committed to leveling the playing field when it comes to STEM because "robotics is for everyone."

Since 2018, the team has run a program called Science-in-a-Box, in which they design custom do-it-yourself (DIY) science kits, order materials, hand-craft them, develop complementary lessons, and ship them to younger students through local community centers. WHS Robotics has created more than 350 kits to support future generations of learners in Southern California.

The team also hosts Robocamp, a week-long event that encourages their younger grade-school peers to participate in lessons about CAD, programming in multiple languages, graphic design, marketing and more. By making Robocamp available to any interested student, the team hopes to further educate children within our community and encourage them to pursue their passions in STEM.





## // MAKING ACCESSIBILITY MORE ACCESSIBLE

FIRST Robotics Competition team [“Thunder Down Under”](#) from Sydney, Australia, believes in the power of STEM to change people’s lives for the better. They developed Training Unleashed, a positive reinforcement training system for dogs that will increase the efficiency and effectiveness of service dog training to make them more accessible to people who need them.

Their research found 50,000 people in Australia would benefit from a service dog but only 200-300 are available annually due to a lack of qualified trainers and funding. Training Unleashed aims to solve this problem by reinforcing traditional dog

training methods with computer vision and artificial intelligence technology. The team’s system uses three 180-degree cameras that detect markers used to identify the position and post of the dog and plays a loud clicking noise to indicate to the dog they have completed a task. The project was a Merit Recipient at the 2021 National iAwards and recognized by dog training experts as revolutionary for the field.

Students on the team have taken on other projects to improve accessibility, creating apps to teach sign language to children and to help people with sensory processing disorders. They are also working on a glove device that translates sign language into text.

# Passion for inclusion

## // FINDING COMMUNITY IN NEURODIVERGENT OF FIRST

FIRST alum [Eva](#) joined FIRST in sixth grade. As an autistic student, they found they struggled. “As much as I loved robotics, competitions were often difficult for me because of the lights, noise, and fast pace of activity seen at every FIRST event,” said Eva.



Inspired by being a part of affinity group LGBTQ+ of FIRST, Eva founded [Neurodivergent of FIRST \(NoF\)](#), an organization to advocate and create a community for neurodivergent people who participate in FIRST, which helped them feel less alone and empowered them to take action. With the goal of promoting environments where neurodivergent people feel included with their teams at FIRST events, NoF hands out pins at events, post blogs, maintain an active social media presence and Discord server, and more. “It’s been a gift to work with so many people who share a passion for inclusion in all corners of FIRST. Things have changed a lot over the years, but we all need to recognize that there’s still work to be done to ensure that STEM is truly for everybody,” Eva said.

# Change people’s lives for the better



Neurodivergent of FIRST

# 2021-2022 Season Highlights



Our 2021-2022 season theme, *FIRST*<sup>®</sup> *FORWARD*<sup>SM</sup> presented by Qualcomm, gave our youth participants the power to reimagine a path forward and invent the future of transportation through program challenges that inspire young people to create innovation solutions through robotics.

## // A SEASON IN NUMBERS

534,000+  
students impacted

2,900+  
official *FIRST* events

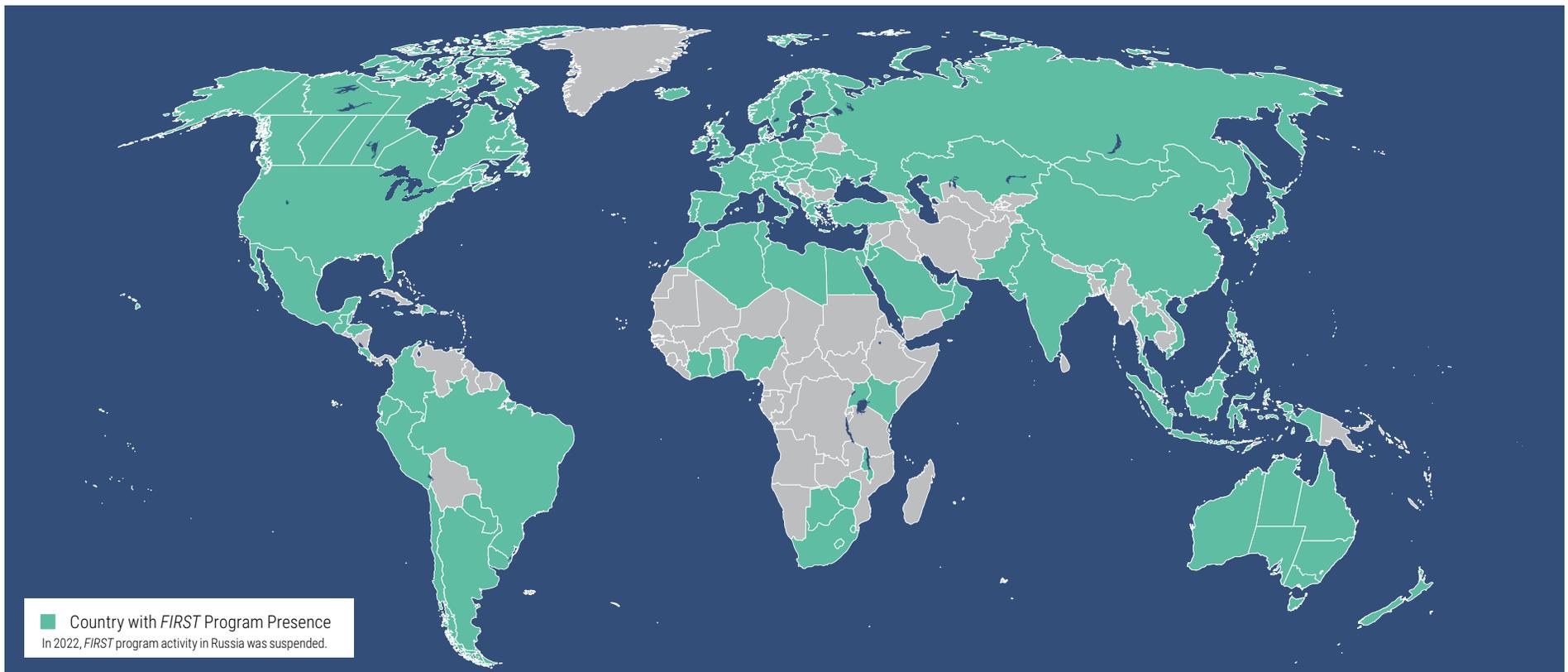
252,000+  
volunteer, mentor, and educator roles

21 million+  
volunteer, mentor, and educator hours

98 countries  
with *FIRST* presence

## // SEASON HIGHLIGHTS

- Following the 2020-2021 season, when student access to *FIRST* programs was impacted by pandemic-driven remote and hybrid schooling, the **number of students reached this season was up 68%**.
- The [\*FIRST\* x UNCF \(United Negro College Fund\) Scholars Program](#) was announced in March 2022, as an initiative designed to identify and provide scholarship and academic support for *FIRST* alumni who aspire to become leaders and innovators in their respective fields.
- **2021-2022 *FIRST* STEM Equity Community Innovation Grants** served over 10,000 students in India, Greece, Morocco, Nigeria, Turkey, and the United States, reaching them through youth-serving community organizations.
- The *FIRST* community was featured in an international documentary on Disney+, "More Than Robots," which premiered at the [2022 SXSW Film Festival](#).
- *FIRST* partnered with sponsors on **virtual career discovery engagement activities** for students and alumni, including a National Robotics Week event.
- *FIRST* became a [Kahoot! premium partner](#), reaching 360,000 players on the popular learning game platform.
- In November 2021, *FIRST* and Filament Games **announced plans to create an exciting new virtual robotics adventure** on global game platform Roblox to complement hands-on *FIRST* programs and expand STEM learning access to even more students.
- *FIRST* programs were present in **98 countries** (see map below).





# Young Innovators Use Skills and Imagination to Solve Problems as a Team

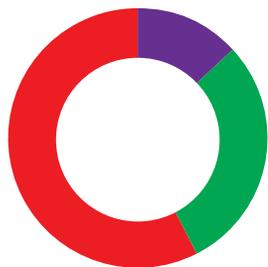
Everyone depends on the transportation of goods for their daily needs. In **FIRST® LEGO® League's CARGO CONNECT<sup>SM</sup>**, Discover, Explore, and Challenge participants learned how cargo is transported, sorted, and delivered to its destinations. Discover and Explore students designed a way to transport packages, built a LEGO® model, and tracked what they learned in an Engineering Notebook. Explore teams brought their model to life using LEGO® Education SPIKE Essential or WeDo 2.0. Challenge teams designed a solution to improve the way products are transported. They also built and programmed an autonomous LEGO robot to solve transportation-themed missions on a competition field.



### Season Participation

**393,000+**

students in **92 countries** explored STEM concepts and gained real-world problem-solving experiences through the guided, global FIRST LEGO League program.



**52,100+**

Discover students

**115,600+**

Explore students

**225,300+**

Challenge students

### Spotlight

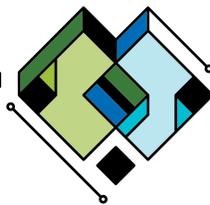
The **2022 FIRST LEGO League Global Innovation Award Ceremony presented by Qualcomm**, a hybrid (in-person and streamed) award ceremony held in St. Louis, Missouri, in June 2022, honored 20 FIRST LEGO League Challenge teams for their innovative solutions for global transportation issues, including **winning team "Takevians" from Samsun, Turkey**. Their invention, **"Durable Packaging, Solid Cargo,"** strengthens the most-used cargo packaging in the world, corrugated cardboard boxes. Among other awardees, Team "Robo Raptors," from Fair Lawn, New Jersey, pictured right with FIRST CEO Chris Moore, received the Design Award for their "Cargo on the Clock" invention.





# It's Way More Than Building Robots

The future of transporting relief to those in need is about inventing creative solutions, pushed by the recognition of the inefficiencies, inequities, and the choices we make around them. In **FREIGHT FRENZY<sup>SM</sup>** presented by **Raytheon Technologies**, *FIRST* Tech Challenge teams and their robots navigated a complex transportation system by traversing barriers and racing against time to load and deliver essential items to those who need them most. Over two-and-a-half minutes of game play with autonomous and driver-controlled sections, teams earned points by completing robot tasks such as collecting freight from the warehouse and scoring it in the storage unit and shipping hubs.



**FREIGHT FRENZY<sup>SM</sup>**

PRESENTED BY  **Raytheon Technologies**

**Season Participation**

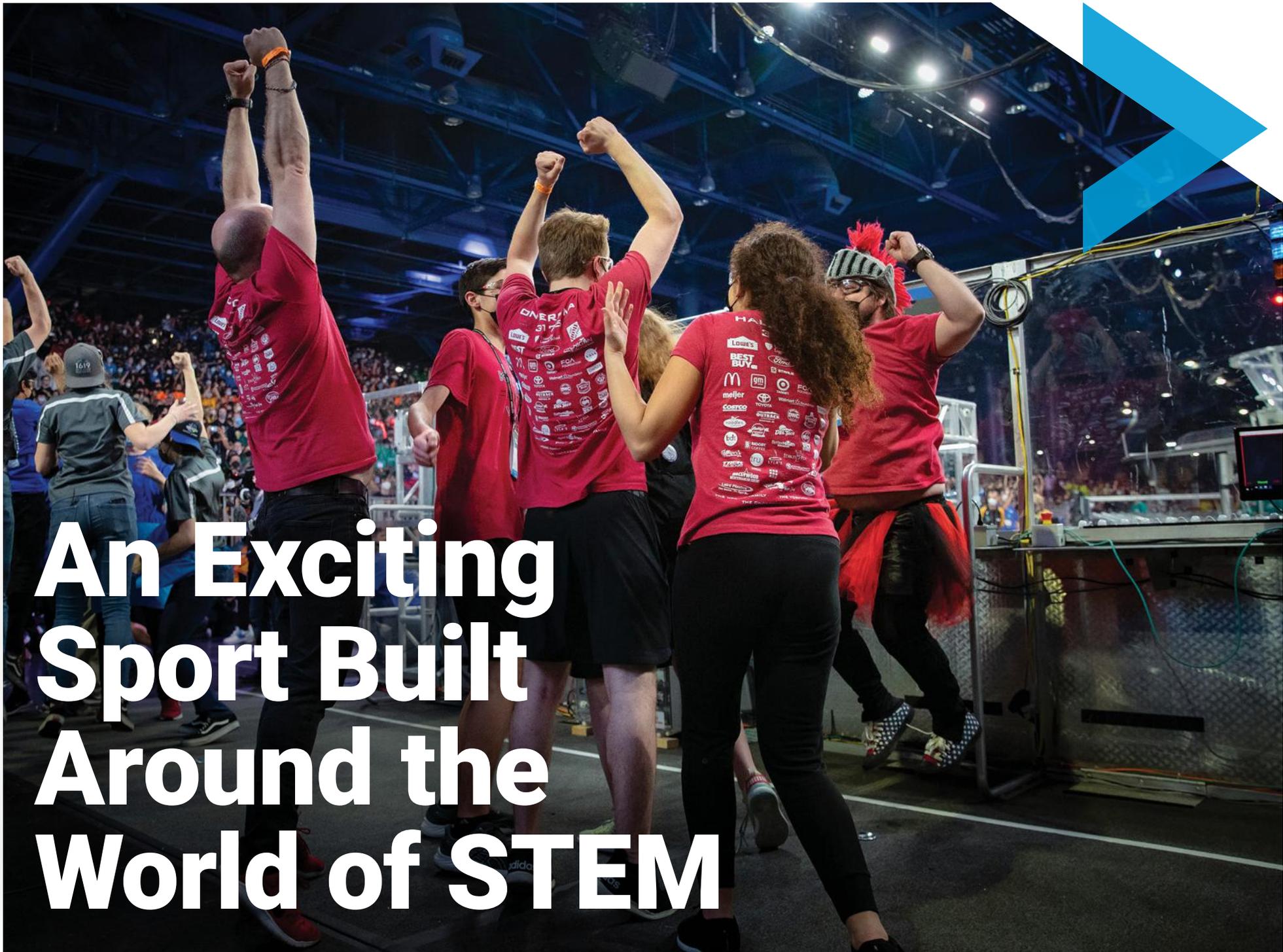
**70,400+**

students in **53 countries** developed STEM skills, practiced engineering principles, and explored the value of teamwork through *FIRST* Tech Challenge.

**Spotlight**

will.i.am, musician, tech entrepreneur, and philanthropist, and his [i.am/Angel Foundation](#) are teaming up with the **Los Angeles Unified School District (LAUSD)**, the second largest public school district in the United States, to expand access to *FIRST* programs to middle and high schoolers in the district, where 80% of students come from low-income households. **During the 2021-2022 pilot season, 99 LAUSD schools registered *FIRST* Tech Challenge teams and received professional development training from *FIRST*, and over 900 students participated, making robotics the district's newest widely adopted school sport.** Their season capped off with the LAUSD Regional Championship hosted at Roosevelt High School in Boyle Heights on April 2, 2022. "Being on the robotics team at my school was great. It was an interesting feeling knowing that I could imagine something, build it, and create something new," said one eighth grade participant.





# An Exciting Sport Built Around the World of STEM

The way we move goods and people is shifting rapidly. In **RAPID REACT™ presented by the Boeing Company**, *FIRST* Robotics Competition teams reimagined the future of safe and high-speed transport as they rushed to load critical cargo and propel the evolution of transportation forward. Teams built and programmed industrial-sized robots to compete in alliances. Their robots earned points during pre-programmed and driver-controlled sections across two-and-a-half minutes of gameplay, scoring cargo in the hub before traversing the ascending rungs of their alliance hangar.



PRESENTED BY 

**Season Participation**

**70,800+**

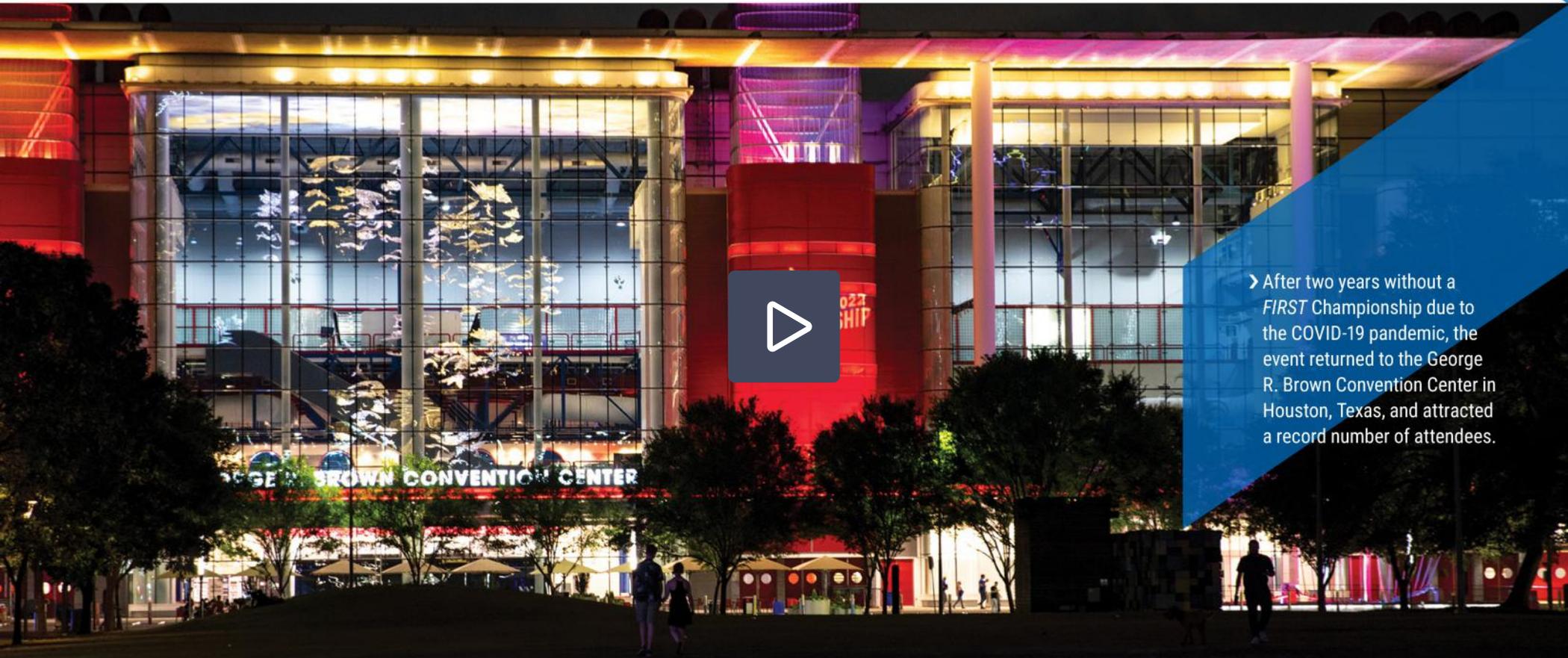
students in **27 countries** unlocked real-world engineering concepts, self-confidence, and workforce skills, supported by professional team mentors and sponsors.

**Spotlight**

After the 2020 *FIRST* Robotics Competition season ended early at the on-set of the COVID-19 pandemic and the 2021 season went remote-only, *FIRST* Robotics Competition events returned in 2022 with in-person gameplay. Throughout the season, more than **14,000 matches were played at nearly 200 events**, kicking off the first week of March with competition events like the **first ever regional held in Izmir, Turkey** (pictured right) with more than 30 teams competing.



# Youth Robotics Teams Inspire at *FIRST* Championship in Houston



➤ After two years without a *FIRST* Championship due to the COVID-19 pandemic, the event returned to the George R. Brown Convention Center in Houston, Texas, and attracted a record number of attendees.

In April, more than 30,000 STEM enthusiasts came together in Houston, Texas to celebrate youth leaders, innovators, and changemakers at the 2022 *FIRST* Championship. The event reunited mentors/coaches, volunteers, sponsors, media, and supporters, as they cheered on the hundreds of student robotics teams who traveled from all corners of the globe to put their innovation, teamwork, and robotics skills to the test.

## // 2022 *FIRST* CHAMPIONSHIP HIGHLIGHTS

35,000+  
attendees

14,000  
student participants

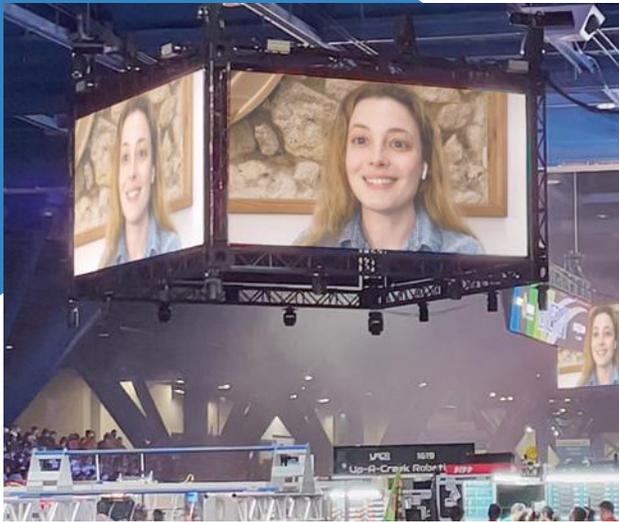
772  
robotics teams

43  
countries

1,000  
event volunteers

20.8M  
traditional media impressions  
across ~900 media placements

Nearly 1.5M  
organic social media impressions  
on official *FIRST* channels



› “*FIRST* is about so much more than robots. I learned that it’s about **teamwork, compassion, friendship, learning new skills, and challenging yourself to do things you never dreamed you were capable of.** You gave me hope, you gave me inspiration, and you are amazing and deserve to be celebrated.”

– Gillian Jacobs, actress and director, accepting the Founder’s Award for directing the “More Than Robots” documentary (via video)

› **will.i.am, musician, tech entrepreneur, and philanthropist,** shares some words of inspiration with spectators and participants on the *FIRST* Robotics Competition field before taking part as a guest announcer for a match.



› “I have met so many great students, volunteers, mentors, alumni, and sponsors who truly embody the *FIRST* mission and Core Values: People who strive to be Gracious Professionals who innovate, compete, and collaborate with equal energy. People who share **our common passion for science and technology as a force for good with the world.** The rewards of your efforts don’t stop at this event.”

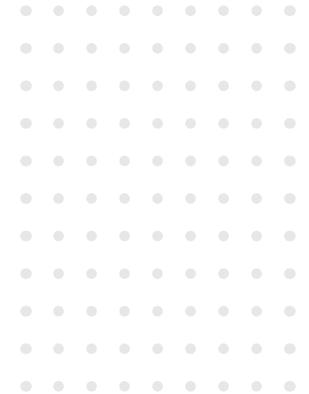
– Chris Moore, chief executive officer of *FIRST*



**For more than 17 years, Qualcomm has supported *FIRST* because we know passion for invention starts at a young age, and today we have many *FIRST* alumni driving innovation at our company. We remain committed to ensuring young people from all backgrounds learn critical foundational skills and become inspired to be STEM innovators in leading-edge industries like ours. Here at *FIRST* Championship, **it’s been thrilling to see what students accomplished this season, and we are proud to champion them.**”**

– Angela Baker, senior director of government affairs at Qualcomm Incorporated

Thank you to our *FIRST* Championship sponsors who appear on page 42 of this report.

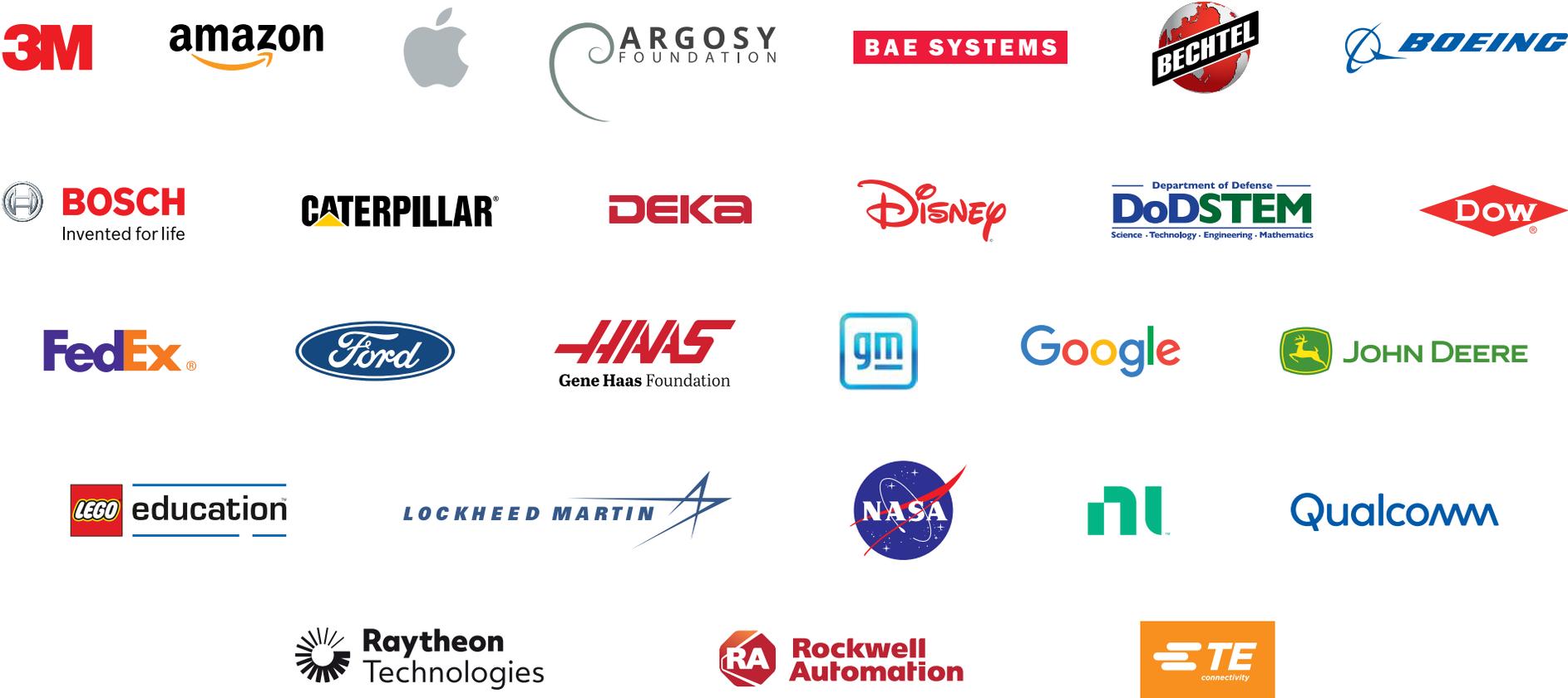


# Sponsors and Contributors

FIRST is More Than Robots. FIRST is our community of supporters. As a nonprofit more than three decades into our mission, we know we would not have this impact without the support of our sponsors, suppliers, donors, and other financial contributors. Their partnership, acknowledged in part on these pages, enables our participants to have the tools they need to succeed and build pathways for their futures.

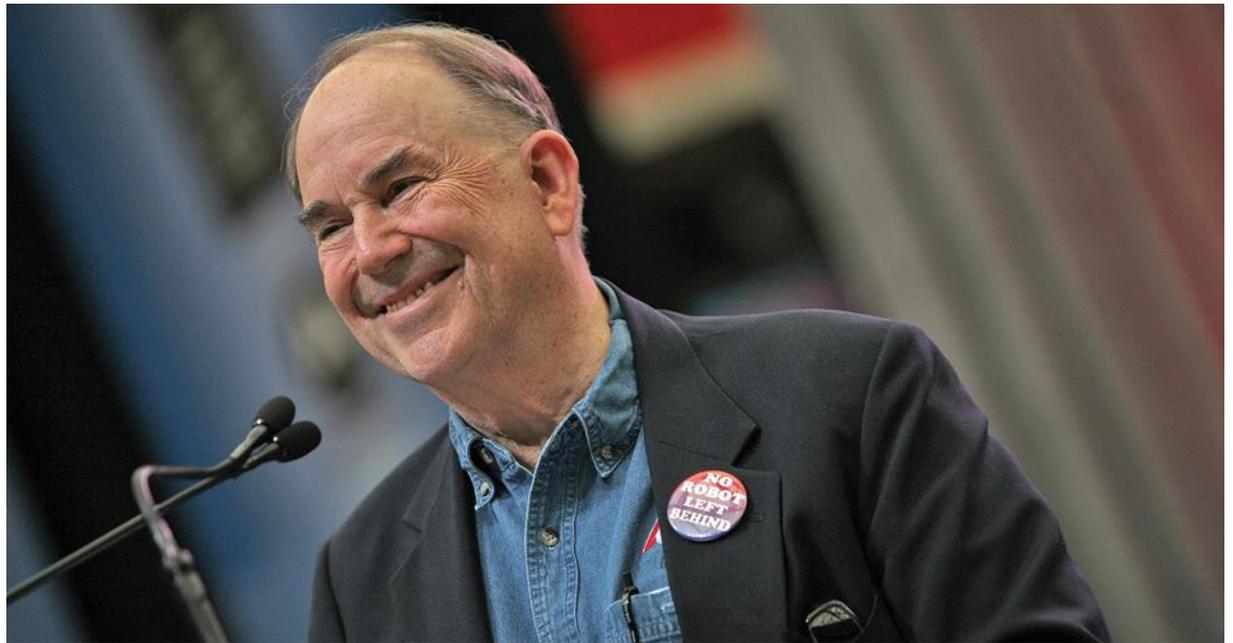
## 2021-2022 STRATEGIC PARTNERS

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## FIRST FOUNDING SPONSORS

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## Thank You to Our Retiring Long-Time Board Member

### John Abele

SERVED 1997-2022 ON BOARD OF DIRECTORS

John Abele is an early and deeply passionate *FIRST* supporter with a dedication to science literacy for children, education, and the process by which new technology is invented, developed, and introduced to society. He served on the *FIRST* Board of Directors from 1997-2022, holding the role of chairman from 2002-2010, and previously served as the chairman of the Development Committee and as a member of the *FIRST* Steering Committee. While he has retired from the Board, John continues to serve as an honorary director, and he and the Argosy Foundation remain deeply engaged with *FIRST*.

John's contributions to advancing the reach and cultural impact of *FIRST* aren't limited to his Board service. In countless ways over the years, he has contributed both personally, starting as a *FIRST* Robotics Competition Championship judge in 2016, and through his enterprises, including the Argosy Foundation, Boston Scientific Corporation, and the Kingbridge Centre. For *FIRST*, he has enabled team grants, development of a Team Fundraising Kit, pilots of new program initiatives, and much, much more – all helping to lower barriers to access and ensure *FIRST* has a diverse cross-section of participants.

John is the retired founding chairman of Boston Scientific Corporation. He holds numerous patents and has published and lectured extensively on the technology of various medical devices and on the technical, social, economic, and political trends and issues affecting healthcare. In 1997, Boston Scientific became a *FIRST* Founding Sponsor, helping to kick start our organization's growth rate.

*FIRST* shares our deepest thanks and appreciation for John's visionary guidance, thoughtful leadership, and boundless support for our mission.

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Haas has been committed to ensuring resources and hands-on training are accessible for students pursuing careers in manufacturing since the early '90s. ... Choosing a career that enables you to do something you are passionate about can change the trajectory of your life. We are excited to be changing lives by partnering with *FIRST*.”

– Gene Haas, founder and sole owner of Haas Automation and the sole funder of the Gene Haas Foundation, a *FIRST* Strategic Partner

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**Our twin boys were in FIRST LEGO League for many years (and they became mentors and coaches in high school too). Now they are in college, and we feel that [the program] provided them with a great experience that helped them reach their college goals. Thank you."**

– FIRST parents and donors

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**As a sponsor of FIRST for over 25 years, Raytheon Technologies celebrates the accessibility and success of the FIRST Tech Challenge program to inspire students from all backgrounds to pursue STEM careers.”**

– Randy Bumps, executive director of corporate social responsibility for Raytheon Technologies, a FIRST Strategic Partner

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**FIRST continues to be an incredible and life-changing organization. It is the reason I became an engineer. Beyond that, it is a wonderful community of people who want to change the world. As an alum, I am also a mentor and volunteer, and I want the students I work with to continue to have such an amazing space to learn, explore, and grow into really good humans.”**

– FIRST alum, donor, and volunteer

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**As Boeing builds the future of aerospace, we are committed to supporting STEM programs like *FIRST* that build a brighter future for students. Hands-on science and engineering experiences can inspire students to become the next generation of science and technology innovators working to tackle pressing societal challenges.”**

– Leanne Caret, president and CEO for a *FIRST* Strategic Partner Boeing Defense, Space & Security and *FIRST* board member

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## FIRST & Qualcomm: A Pioneering Partnership to Inspire Young Innovators

It's a future understood by two like-minded organizations: Today's students will be the drivers of tomorrow's breakthroughs. To stay at the forefront of innovation, Qualcomm invests in developing tomorrow's workforce through STEM education. Qualcomm began supporting *FIRST* in 2006 and has been a Strategic Partner [since 2014](#). As a *FIRST* Strategic Partner, Qualcomm directly supports:

- › Programs, events, and thousands of teams globally.
- › Time and engineering expertise donated by hundreds of employees.
- › [Equity, Diversity, & Inclusion initiatives](#) such as the [FIRST Stem Equity Community Innovation Grants](#), which have helped increase participation in *FIRST* for historically underrepresented groups in STEM.

As Qualcomm's support has grown, so has *FIRST*, across the globe, from reaching an estimated 91,000 students in ~30 countries during the 2005-06 season to more than half a million annual participants in ~100 countries today. In return *FIRST* provides a platform that:

- › Helps build Qualcomm's workforce pipeline.
- › Helps to engage students with hands-on Qualcomm technology and learn the skills needed to become the next generation of STEM leaders and problem solvers.
- › Engages Qualcomm employees across the globe as *FIRST* volunteers.
- › Provides Qualcomm opportunities to [collaborate with other businesses](#) in meaningful ways and to demonstrate collective impact.

Qualcomm's generosity continues to grow, this year becoming [the presenting sponsor](#) for the 2021-2022 cross-program season, *FIRST*® FORWARD<sup>SM</sup> presented by Qualcomm. With its ongoing support of *FIRST*, Qualcomm is doing its part to bring innovation, collaboration, and STEM education to students all over the world. **Read more at [www.firstinspires.org/qualcomm](http://www.firstinspires.org/qualcomm).**

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**Our son started a *FIRST* Robotics Competition team at his high school, which went on to win the Rookie All-Star Award. My husband and I were honored to be the coach/mentor for this amazing group of young adults. *FIRST* not only changed both of our children's lives, but ours as well. Thank you!"**

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**FIRST has played a prominent role in my life – from high school all the way to my engineering career. In fact, it’s thanks to FIRST that I discovered NI! Since graduating from high school, I’ve continued to mentor FIRST Robotics Competition teams and volunteer for many events in North America.”**

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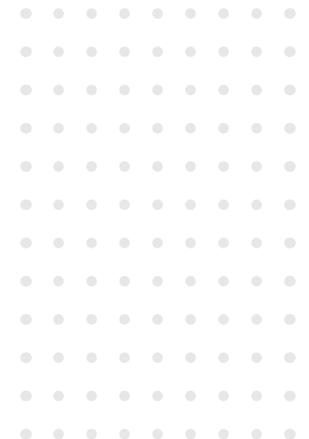
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FIRST is More Than Robots. FIRST is our Program Delivery Partner community – the people who work tirelessly to bring hands-on programs that keep STEM exciting and accessible to communities and classrooms around the world. Through our partners, young people from many corners of the globe discover a love of learning, hone their creativity, find belonging, and unlock their full, amazing potential. The following key organizations in the field implement FIRST programs in their respective regions.

**ALBANIA**  
EDUAct ●

**ALGERIA**  
Robot Éducatif Algérie\* ●

**ANDORRA**  
ASOCIACIÓN INGENIERA  
SOY ●●

**ARGENTINA**  
Playbots S.A.\* ●

**AUSTRALIA**  
Macquarie University ●●●●

**AUSTRIA**  
HANDS on TECHNOLOGY  
e.V. ●●

**AZERBAIJAN**  
Bilim Kahramanlari  
Bulusuyor (BKD) ●

**BELGIUM**  
Stichting Techniekpromotie ●●

**BOTSWANA**  
Tshwane University of  
Technology/FIRST  
South Africa ●

**BRAZIL**  
Positivo ●  
SESI ●●

**CANADA**

**ALBERTA**  
FIRST Robotics Society ●●●

**BRITISH COLUMBIA**  
FIRST Robotics  
British Columbia ●●●●

**NEW BRUNSWICK**  
Rothesay Netherwood  
School ●

**NEWFOUNDLAND AND  
LABRADOR**  
FIRST Robotics Newfoundland  
and Labrador ●●

**NOVA SCOTIA**  
Acadia University ●

**ONTARIO**  
FIRST Robotics Canada ●●●●

**QUÉBEC**  
Robotique FIRST Québec ●●●●

**CHILE**  
Fundación SparkTalents ●●

**CHINA**  
DaDa LeLe Company ●●

**CHINESE TAIPEI**  
Kids Kingdom, Inc. ●●●●

**COLOMBIA**  
Uniminuto ●●

**COSTA RICA**  
Fundación STEAM ●●

**CROATIA**  
Zavod Super Glavce ●

**CYPRUS**  
EDUAct ●●  
Epiteugma Training Center ●

**CZECH REPUBLIC**  
Sdružení pracovníků  
DDM v CR ●

**DENMARK**  
FIRST Scandinavia ●●

**DOMINICAN  
REPUBLIC**  
Fundación para el Desarrollo  
de las Ciencias y la  
Tecnología ●●

**ECUADOR**  
Centro Campus\* ●●

**EGYPT**  
Techno Future Egypt ●●●

**ESTONIA**  
MTÜ Robotika ●●

**ESWATINI**  
Tshwane University of  
Technology/FIRST  
South Africa ●●

**FAROE ISLANDS**  
FIRST Scandinavia ●●

**FINLAND**  
Robotiikka ●

**FRANCE**  
West Side Robot Lab ●  
Educabot ●

**GERMANY**  
HANDS on TECHNOLOGY  
e.V. ●●

**GHANA**  
CODERINA ●●●

**GREECE**  
EDUAct ●●

**GUATEMALA**  
Computation  
Avanzada S.A.\* ●●

**HONDURAS**  
Fundación STEM Honduras\* ●

**HONG KONG, CHINA**  
Trumptech ●

**HUNGARY**  
HelloWorld ●●

**ICELAND**  
FIRST LEGO League á Íslandi ●

**INDIA**  
InfinityX ●

**INDIA – NORTH**  
India STEM Foundation ●●

**INDIA – SOUTH**  
Edutech India Private Ltd. ●●

**INDIA – WEST**  
Duck Learning ●●

**INDONESIA**  
PT Edukasi Kreatifitas Anak/  
CK Education ●●

**IRELAND**  
The Institution of Engineering  
and Technology  
(The IET) ●●  
FIRST Tech Challenge UK ●

**ISRAEL**  
FIRST Israel & Technion ●●●●

**ITALY**  
Fondazione Museo Civico  
di Rovereto ●●

**JAMAICA**  
Jamaica College Foundation ●

**JAPAN**  
FIRST Japan ●●

**JORDAN**  
Jubilee Center for Excellence  
in Education ●●

**KAZAKHSTAN**  
USTEM Robotics  
Kazakhstan/Central Asia  
Robotics Development  
Foundation\* ●●●

**KENYA**  
CODERINA ●●



## 2022 *FIRST* Volunteers of the Year

*FIRST* volunteers create a path forward for the next generation and inspire young people to use their skills to make a positive impact on their communities and the world. At the culmination of every *FIRST* season, the Volunteer of the Year award is given to those who have made an extraordinary contribution to a *FIRST* program.

This year, the Volunteer of the Year Award was awarded to

- › Chuck Dickerson from Mississippi [FIRST Robotics Competition](#)
- › Jacob Burroughs from Illinois [FIRST Tech Challenge](#)
- › Andy Snape from Stoke-on-Trent, England [FIRST Tech Challenge](#)
- › Abdulmatin Adeniji from Lagos, Nigeria [FIRST LEGO League Challenge](#)
- › Dr. Patricia Gouws from South Africa [FIRST LEGO League Explore](#)

When asked what inspires him to volunteer, *FIRST* Tech Challenge volunteer and award recipient Snape explained, “Seeing the amazing work by every single one of the young people throughout each season. I love seeing their learning and how much their confidence and skills develop!”

Thanks to the hard work and significant impact of volunteers like Dickerson, Burroughs, Snape, Adeniji, and Gouws, *FIRST* is able to continue to provide transformative, hands-on STEM opportunities to students around the world.

<b>LATVIA</b> MTŪ Robotika ●●	<b>NETHERLANDS</b> Stichting Techniekpromotie ●● STEAMUp ●	<b>REPUBLIC OF NORTHERN MACEDONIA</b> EDUAct ●●
<b>LEBANON</b> Education and Technology Center ●●	<b>NEW ZEALAND</b> <i>FIRST</i> New Zealand Trust ●●	<b>ROMANIA</b> CRESTEM ●● Natie Prin Educatie Association ●
<b>LESOTHO</b> Tshwane University of Technology/ <i>FIRST</i> South Africa ●	<b>NIGERIA</b> CODERINA ●●●	<b>RUSSIA**</b> Robotics Laboratory “Future Engineers” ●● Goethe Schule ●
<b>LIBYA</b> Lybotics ●	<b>NORWAY</b> <i>FIRST</i> Scandinavia ●●	<b>SAUDI ARABIA</b> Thaka Holding Co ●● Thaka Holding Co/BeSteam ●
<b>LITHUANIA</b> Robotikos Akademija ●●	<b>OMAN</b> ATLAB ●	<b>SINGAPORE</b> Duck Learning ●●
<b>LUXEMBOURG</b> Stichting Techniekpromotie ●●	<b>PAKISTAN</b> STARFALL Foundation ●●	<b>SLOVAKIA</b> <i>FIRST</i> LEGO League Slovensko, o.z. ●
<b>MALAYSIA</b> Sasbadi Sdn Bhd ●●	<b>PARAGUAY</b> Espacios de Ser S.A.* ●	<b>SLOVENIA</b> Zavod Super Glavce ●●
<b>MÉXICO</b> RobotiX ●● Explora, Descubre y Crea, A.C. ●●	<b>PERU</b> Wernher Von Braun IEP SA ● Edubots ●	<b>SOUTH AFRICA</b> Tshwane University of Technology/ <i>FIRST</i> South Africa ●●●
<b>MOLDOVA</b> MTŪ Robotika ●●	<b>PHILIPPINES</b> FELTA Multi-Media, Inc. ●●	<b>SPAIN</b> ASOCIACION INGENIERA SOY ●●
<b>MONGOLIA</b> Mongolia Robot Education Association ●	<b>POLAND</b> ALE Nauczanie Foundation ●●	<b>SWEDEN</b> <i>FIRST</i> Scandinavia ●●
<b>MONTENEGRO</b> Young Inventors of Montenegro ●	<b>PORTUGAL</b> Evoluir21 ●●	<b>SWITZERLAND</b> HANDS on TECHNOLOGY e.V. ●●
<b>MOROCCO</b> Play Academy ●●	<b>QATAR</b> ATLAB ●● Texas A&M University Qatar ●	
	<b>REPUBLIC OF KOREA</b> FEST (Federation for Education of Creative Science and Technology) ●●●	

\*Local Partner Representative \*\* In 2022, *FIRST* program activity in Russia was suspended.  
● *FIRST* LEGO League Explore ● *FIRST* LEGO League Challenge ● *FIRST* Tech Challenge ● *FIRST* Robotics Competition

## THAILAND

GAMMACO ●●  
The Prince Royal's College ●

## TRINIDAD AND TOBAGO

NIHERST ●

## TUNISIA

Edurobot Tunisia ●●

## TURKEY

Bilim Kahramanlari  
Bulusuyor (BKD) ●●  
Fikret Yüksel Foundation ●

## UKRAINE

Innovative Education  
Solutions ●●

## UNITED ARAB EMIRATES

ATLAB ●●  
ATLAB and AUS ●

## UNITED KINGDOM

The Institution of Engineering  
and Technology  
(The IET) ●●  
FIRST Tech Challenge UK ●

## UNITED STATES

**ADVENTIST**  
Adventist Robotics League ●●

**DODEA – EUROPE**  
DoDEA – Europe ●

**NATIONAL SOCIETY OF BLACK ENGINEERS**  
National Society of  
Black Engineers ●●

**ALABAMA**  
FIRST in Alabama ●●●

**ALASKA**  
Juneau Economic  
Development Council ●●●  
FIRST Washington ●

**ARIZONA**  
Arizona State University ●●  
Coconuts Robotics ●  
FIRST Arizona ●

**ARKANSAS**  
Science and Technology  
Group Inc. ●●●

**CALIFORNIA – CENTRAL**  
Clovis Unified School  
District ●●

**CALIFORNIA – LOS ANGELES**  
Careers Next ●

**CALIFORNIA – NORTHERN**  
Playing at Learning ●●●

**CALIFORNIA – SAN DIEGO**  
Robotics Inspiring Science  
and Engineering Inc ●

**CALIFORNIA – SOUTHERN**  
California FIRST ●●

**COLORADO**  
Colorado FIRST ●●●

**CONNECTICUT**  
NE FIRST ●●●●

**DELAWARE**  
Delaware State University ●●  
First State Robotics ●  
FIRST Mid-Atlantic ●

**DISTRICT OF COLUMBIA**  
FIRST Chesapeake ●●  
James Madison University ●●

**FLORIDA**  
Tampa Bay Robotics ●

**FLORIDA – CENTRAL**  
Renaissance Jax, Inc. ●●

**FLORIDA – NORTHEAST**  
Renaissance Jax, Inc. ●●

**FLORIDA – NORTHWEST**  
DEFENSEWERX Inc. ●●

**FLORIDA – SOUTH**  
Green Mouse Academy ●●  
Cox Science Center and  
Aquarium ●●

**FLORIDA – WEST COAST**  
State College of Florida ●●

**GEORGIA**  
Georgia FIRST ●●●●  
Georgia Institute of  
Technology ●

**GUAM**  
SIFA ●●

**HAWAII**  
Hawaii FIRST Robotics ●●●●

**IDAHO**  
Idaho Regional  
Robotics, Inc. ●●●

**ILLINOIS**  
Illinois FIRST Robotics ●●●●

**INDIANA**  
Indiana FIRST, Inc. ●●●●

**IOWA**  
Iowa State University ●●  
University of Iowa ●

**KANSAS**  
FIRST in Missouri ●

**KANSAS – CENTRAL**  
Oklahoma Science and  
Engineering Foundation  
(OKSEF) ●

**KANSAS – KANSAS CITY REGION**  
KC STEM Alliance ●●

**KANSAS – SOUTHWEST**  
Mid-America Air Museum/  
City of Liberal ●●

**KENTUCKY**  
Northern Kentucky  
University ●●  
FTC in Kentucky, Inc. ●

**LOUISIANA**  
FIRST Louisiana-  
Mississippi ●●●

**MAINE**  
Robotics Institute of Maine ●  
NE FIRST ●

**MARYLAND**  
Academy of Excellence  
(Weestar Corporation) ●  
FIRST Chesapeake ●●

Rockville Robotics, Inc. ●  
University of Maryland  
Baltimore County ●

**MASSACHUSETTS**  
NE FIRST ●●  
WPI Robotics  
Resource Center ●  
Boston Tech Initiative, Corp. ●

**MICHIGAN**  
FIRST in Michigan ●●●●

**MINNESOTA**  
High Tech Kids ●●●

**MISSISSIPPI**  
Robotics Alliance of  
Mississippi ●●  
Center for Mathematics and  
Science Education/The  
University of Mississippi ●

**MISSOURI**  
FIRST in Missouri ●

**MISSOURI – CENTRAL**  
FIRST in Missouri ●●

**MISSOURI – EAST**  
FIRST in Missouri ●●

**MISSOURI – KANSAS CITY**  
KC STEM Alliance ●●

**MONTANA**  
College of Engineering,  
Montana State University ●  
Ed Huth ●

**NEBRASKA**  
University of Nebraska  
– Lincoln 4-H Youth  
Development ●●

**NEVADA**  
FIRST Nevada ●●●

**NEW HAMPSHIRE**  
NE FIRST ●  
FIRST New Hampshire  
Robotics ●●●

**NEW JERSEY**  
FIRST Tech Challenge  
New Jersey ●  
FIRST Mid-Atlantic ●

**NEW JERSEY – NORTH**  
FIRST Mid-Atlantic ●●

**NEW JERSEY – SOUTH**  
Rowan University ●●

**NEW MEXICO**  
Land of Enchantment  
Robotics ●●●  
FIRST in Texas ●

**NEW YORK – EXCELSIOR**  
Mohawk Valley Community  
College ●

**NEW YORK – FINGER LAKES**  
Nichols School ●●

**NEW YORK – LONG ISLAND**  
School-Business Partnership  
of Long Island, Inc. ●●●

**NEW YORK – MID-HUDSON VALLEY**  
Hudson Valley  
FIRST LEGO League ●●

**NEW YORK – NEW YORK CITY**  
NYC FIRST ●●●

**NEW YORK – POTSDAM**  
Clarkson University ●

**NORTH CAROLINA**  
North Carolina A&T State  
University ●●  
FIRST North Carolina ●●

**NORTH DAKOTA**  
Bismarck Career Academy ●  
University of North Dakota,  
School of Engineering  
& Mines ●●

**OHIO**  
WPAFB Educational  
Outreach ●●●

**OKLAHOMA**  
Oklahoma Science and  
Engineering Foundation  
(OKSEF) ●●●

**OREGON**  
Oregon Robotics Tournament  
& Outreach Program ●●●  
FIRST Washington ●

**PENNSYLVANIA**  
Pennsylvania FIRST ●

**PENNSYLVANIA – CENTRAL**  
Appalachia Intermediate  
Unit 8 ●●

**PENNSYLVANIA – EAST**  
FIRST Mid-Atlantic ●●

**EASTERN PENNSYLVANIA**  
FIRST Mid-Atlantic ●

**PENNSYLVANIA – NORTHWEST**  
Penn State Erie, The  
Behrend College ●

**PENNSYLVANIA – SOUTHWEST**  
BrainSTEM Learning ●●

**PUERTO RICO**  
Eureka Enrichment  
Services, Inc. ●●

**RHODE ISLAND**  
NE FIRST ●  
New England Institute  
of Technology ●  
Rhode Island School  
of the Future ●●

**SOUTH CAROLINA**  
FIRST South Carolina ●●●

**SOUTH DAKOTA**  
EmBe ●●

**TENNESSEE**  
Tennessee FIRST ●

**TENNESSEE – CHATTANOOGA (NORTH GEORGIA)**  
Tennessee Valley Robotics ●●

**TENNESSEE – EAST**  
Tennessee Tech University ●●

# 2022 Woodie Flowers Award Recipient

## TENNESSEE – WEST

University of Memphis and Herff College of Engineering ●  
The Children’s Museum of Memphis ●

## TEXAS

FIRST in Texas ●

## TEXAS – CENTRAL

FIRST in Texas ●●●

## TEXAS – EAST

FIRST in Texas ●●

San Jacinto College ●

## TEXAS – NORTH

DFW Technology and Education Council ●

FIRST in Texas ●●

## TEXAS – PANHANDLE

FIRST in Texas ●●

## TEXAS – SOUTH

FIRST in Texas ●●●

## TEXAS – WEST

The University of Texas at El Paso – College of Engineering ●●

FIRST in Texas ●

## UTAH

Weber State University, College of Applied Science and Technology ●●

Southern Utah University ●

## VERMONT

NE FIRST ●

Norwich University ●●

University of Vermont ●

## VIRGINIA

FIRST Chesapeake ●●

James Madison University ●●

## WASHINGTON

FIRST Washington ●●●●

## WEST VIRGINIA

Fairmont State University ●●●

## WISCONSIN

BadgerBOTS Robotics Corporation ●●

Milwaukee School of Engineering ●

## WYOMING

Natrona County School District ●●●

## URUGUAY

Plan Ceibal ●●

## VIETNAM

Viet Tinh Anh JSC ●●

## ZIMBABWE

Tshwane University of Technology/FIRST South Africa ●●

\*Local Partner Representative  
● FIRST LEGO League Explore  
● FIRST LEGO League Challenge  
● FIRST Tech Challenge  
● FIRST Robotics Competition



Each year, the Woodie Flowers Award, named after the late Dr. Woodie Flowers, is awarded to an outstanding *FIRST* Robotics Competition mentor who leads, inspires, and empowers students through effective communication in STEM.

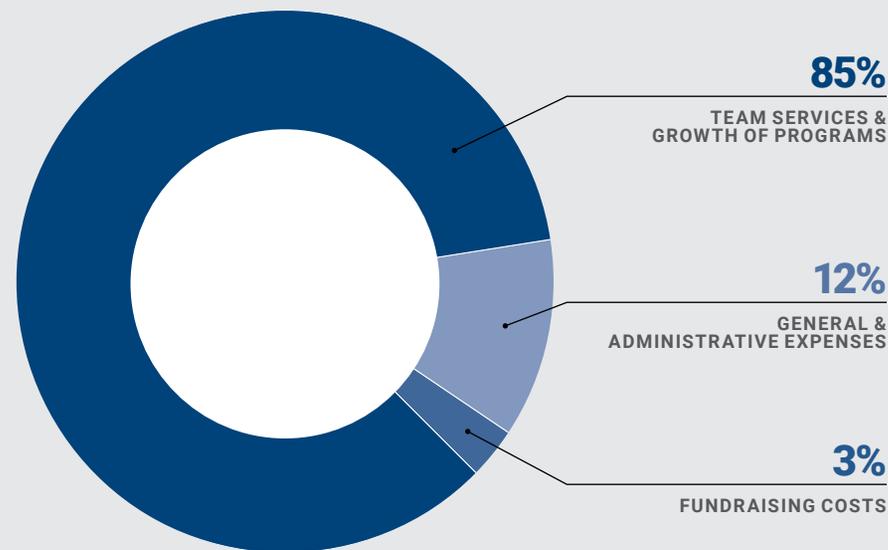
**The 2022 Woodie Flowers Award was awarded to Christine Sapio of Flagstaff, Arizona, a mentor for *FIRST* Robotics Competition Team 2486 “CocoNuts” and dedicated member of the *FIRST* community since becoming a teacher in 2007.**

“Every new teacher wants to change the world. By being a *FIRST* mentor and Program Delivery Partner, I know I am making a difference,” said Sapio. “I see growth [in my students] every day, from learning new skills and gaining the confidence to stand up for a cause they believe in, to developing a passion for serving the community. The impact that *FIRST* makes in the lives of my students is just extraordinary.”

*FIRST* youth program participation grew in FY2022, and *FIRST* reported a modest operating surplus following two years of operating deficit. In FY2020, *FIRST* experienced its first operating deficit in over 17 years as a result of the COVID-19 pandemic and the suspension of our season. In FY2021, we focused our financial efforts on sustaining our community and participation in our programs through investments in key program modifications and other supporting tools and services. Unfortunately, reduced participation resulting from delayed pandemic recovery and lingering impacts did cause us to incur an additional financial loss for FY2021.

In FY2022, *FIRST* saw the return of many in-person events and, for the first time since 2019, culminated in our international *FIRST* Championship. Youth participation increased, though student access to *FIRST* programs was challenged by the loss of in-person learning. FY2022 brought additional challenges related to expense management as a result of economic pressures, supply chain disruptions, and inflation. However, through re-engaged youth participation, the return to in-person events, diligent expense management and the generosity of our sponsors, *FIRST* reported a modest operating surplus of approximately \$400,000 in FY2022. This operating surplus was generated all while continuing to invest in important initiatives, such as our Youth Protection Program, Information Technology, Program Evaluations, Diversity & Inclusion Program, and Education Initiative.

As with previous fiscal years, support from generous contributors remained strong, as many individuals, small businesses, corporations – including over 200 of the Fortune 500 companies – and foundations maintained or increased their support. In addition, many of our contributors also provided significant support in the way of unrestricted donations, providing *FIRST* with important flexibility to manage the pandemic impacts and address our most important business needs. This contributed support continued to provide meaningful experiences to hundreds of thousands of youth engaged worldwide in *FIRST* programs.



See Financial Statements, page 48.

## Charity Navigator Star Rating

This rating certifies our continued commitment to accountability, transparency, and sound fiscal management.

**GIVE WITH CONFIDENCE**



**Exceptional**

This Charity Navigator rating represents Form 990 data from 2019, the most recent rating available at [charitynavigator.org/ein/222990908](https://charitynavigator.org/ein/222990908). More recent filing data is available, but Charity Navigator has not factored it into their score due to COVID's effects.



// STATEMENTS OF ACTIVITIES	JUNE 30, 2022		JUNE 30, 2021	
<b>REVENUES AND OTHER SUPPORT:</b>				
Program registration fees	17,420,896	23.12%	5,789,688	12.21%
Contributions and grants	12,668,485	16.81%	4,343,936	9.16%
Other income	711,726	0.94%	596,476	1.26%
Special event income, net of expenses	-	0.00%	-	0.00%
Net assets released from restrictions	44,555,695	59.13%	36,703,128	77.38%
<b>Total revenues (losses) and other support</b>	<b>\$ 75,356,802</b>	<b>100.00%</b>	<b>\$ 47,433,228</b>	<b>100.00%</b>
<b>EXPENSES:</b>				
FIRST Program Expenses	63,676,395	84.95%	38,807,648	80.73%
Net cost of building space occupied by unrelated not-for-profit organizations	387,932	0.52%	245,537	0.51%
General, administrative, and supporting services	8,927,776	11.91%	6,926,858	14.41%
Fundraising and Development	1,961,338	2.62%	2,090,659	4.35%
<b>Total expenses</b>	<b>\$ 74,953,441</b>	<b>100.00%</b>	<b>\$ 48,070,702</b>	<b>100.00%</b>
<i>Operating surplus (deficit)</i>	<i>403,361</i>		<i>(637,474)</i>	

// STATEMENTS OF FINANCIAL POSITION	JUNE 30, 2022		JUNE 30, 2021	
<b>ASSETS:</b>				
Cash and cash equivalents*	32,474,351	50.53%	35,631,704	52.35%
Short-term investments*	14,950,000	23.26%	16,500,000	24.24%
Pledges, receivables, program supply inventory, and other assets	12,548,523	19.52%	11,416,654	16.77%
Net property, plant, and equipment	4,297,070	6.69%	4,517,153	6.64%
<b>Total assets, end of year</b>	<b>\$ 64,269,944</b>	<b>100.00%</b>	<b>\$ 68,065,511</b>	<b>100.00%</b>
<b>LIABILITIES AND NET ASSETS:</b>				
<b>Total liabilities, end of year</b>	<b>\$ 5,369,371</b>		<b>\$ 8,544,094</b>	
<b>Net assets:</b>				
Without donor restrictions	28,443,464	48.29%	28,040,103	47.11%
With donor restrictions – temporary in nature	30,457,109	51.71%	31,481,314	52.89%
<b>Total net assets, end of year</b>	<b>\$ 58,900,573</b>	<b>100.00%</b>	<b>\$ 59,521,417</b>	<b>100.00%</b>
<b>Total liabilities and net assets, end of year</b>	<b>\$ 64,269,944</b>		<b>\$ 68,065,511</b>	

For each of the two fiscal years summarized above, FIRST received unmodified (unqualified) opinions from its independent auditor, BerryDunn.

\*NOTE: The cash and short-term investments are comprised of both unrestricted funds and donor temporarily restricted funds. The decrease in assets with restrictions reflects the use of restricted funds toward their intended purpose as our programs returned to more traditional and in person activities. The total liquid assets balance available to FIRST, for operating purposes, at June 30, 2022, is equivalent to approximately five months of FIRST operating expenses.

The financial information presented here is condensed and does not include the value of all donated services and materials. Audited Financial Statements (AFS) are readily available on our website at [firstinspires.org](http://firstinspires.org) under "About/Annual Report & Financials."

## Leadership

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Former Chairman & CEO, Rockwell Collins and CEO, Collins Aerospace

**Donald Bossi** VICE CHAIR

General Partner, Technology Venture Partners

**Richard L. Clemmer** VICE CHAIR

Former Chief Executive Officer & President, NXP Semiconductors

**Dr. Laurie Leshin** VICE CHAIR

Director, NASA's Jet Propulsion Laboratory

**Dr. Vincent Wilczynski** TREASURER

Deputy Dean, Yale School of Engineering & Applied Science & James S. Tyler Director of the Center for Engineering Innovation & Design, Yale University

**Dean Kamen** FOUNDER

President, DEKA Research & Development Corporation

**Ursula Burns**

Chairwoman, Teneo Ltd.

**Leanne G. Caret**

Executive Vice President and Senior Advisor, The Boeing Company

**Dr. Robin N. Coger**

Provost and Senior Vice Chancellor for Academic Affairs, East Carolina University

**Karen Horting**

Executive Director & CEO, Society of Women Engineers

**Dr. Paul E. Jacobs**

Chairman & Chief Executive Officer, XCOM Labs, Inc.

**Scott McKay**

Former Executive Vice President & Chief Strategy Officer, Genworth Financial

**Blake Moret**

Chairman & CEO, Rockwell Automation

**Martine Rothblatt**

Chairperson, CEO & Founder, United Therapeutics

**David Siegel**

Co-Chairman, Two Sigma

**Dr. Melissa Smith**

User Experience Research Manager, Google/YouTube

**Raj Subramaniam**

President & Chief Executive Officer, FedEx Corporation

**General Janet Wolfenbarger**

United States Air Force, Retired

## LEADERSHIP CONTINUED

### // HONORARY DIRECTORS

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*Founding Chairman, Retired, Boston Scientific Corporation*

**J.T. Battenberg III**

*Chairman & Chief Executive Officer, Retired, Delphi Corporation*

**François J. Castaing**

*Executive Vice President, Retired, Chrysler Corporation*

**L. John Doerr III**

*Chairman, Kleiner Perkins Caufield & Byers*

**Walt Havenstein**

*Chief Executive Officer, Retired, Science Applications International Corporation (SAIC)*

**Gary L. Tooker**

*Chairman of the Board, Retired, Motorola, Inc.*

**Robert M. Tuttle**

*General Partner, 1848 Associates*

**James R. Utaski** FIRST CHAIRMAN: 2000-2002

*Corporate Mergers & Acquisitions Officer, Retired, Johnson & Johnson*

### // SENIOR ADVISORS

**Dr. Shirley Ann Jackson**

*President, Rensselaer Polytechnic Institute*

**Kjeld Kirk Kristiansen**

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“To transform our culture by creating a world where science and technology are celebrated and where young people dream of becoming science and technology leaders.”

– Dean Kamen, *FIRST* Founder

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