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NOVATI

Prolific inventor Dean Kamen founds FIRST® to inspire young people to be science and technology leaders and innovators. His hope is to transform culture by creating a world where scientists and technologists are held in the same esteem as pop-culture celebrities.



Tim Berners-Lee, an English engineer and computer scientist, invents the World Wide Web while working at CERN. The web was conceived to meet the demand for automated information sharing between scientists in universities and institutes around the world.





2

28 teams of high school students compete in the inaugural *FIRST* Robotics Competition in a school gymnasium in New Hampshire. Sitting President George H. W. Bush attends the event.





The 31-mile Channel Tunnel opens, connecting England to France via a railway across the English Channel. The Chunnel includes the world's longest underwater tunnel.







The inaugural FIRST Championship is held at Epcot® at Walt Disney World Resort in Orlando, Florida, where it remains through 2002.

For 30 years, *FIRST*® has helped young people—and our mentors, educators, volunteers, sponsors, and alumni—go beyond anything they could have imagined.

Powered by an incredible, mission-driven global robotics community and evidence-based programs designed to ignite curiosity and encourage exploration, *FIRST* prepares young people for the future.

Just as previous generations led a movement that put the first human on the moon 50 years ago, the *FIRST* movement is leading the world into its next chapter and **building a better future for us all** – here on Earth and to Mars and beyond.

### FOUNDER'S LETTER

I founded FIRST in 1989 to inspire and recognize science and technology in young people. In fact, we were one of the first organizations to do it – setting in motion a movement to transform our culture to one where science, technology, engineering, and invention are celebrated, and young people dream of becoming leaders in these fields as much as they do in athletics and

Dean Kamen Founder, FIRST

entertainment. We began with 28 robotics teams competing in a U.S. high school gym, and we've come a long way since then. In 2019, we celebrated our 30th anniversary. From just one season event in our inaugural competition year, this year we held 3,600 official *FIRST* events for

event in our inaugural competition year, this year we held 3,600 official *FIRST* events for four *FIRST* programs in over 100 countries – that's more than half the world's countries – and we capped it off with two international *FIRST* Championship events attended by more than 75,000 people.

By fueling curiosity and fostering community, *FIRST* builds tomorrow's challenge facers, risk takers, and change makers – what every young person can become, if supported. As our past 30 years have shown, leaders in education, industry, and community must work together to develop the future workforce and ensure it's one where everyone can succeed.

As our world grows more complex, having a meaningful understanding of science and technology is more important than ever for next generations to effect change. Among other incredible findings from our unrivaled longitudinal impact study (see page 6), *FIRST* participants are twice as likely as their peers to show gains in STEM knowledge. Even more critical are the inspiration and community that drive their desire to learn and move us forward. With 70% of *FIRST* alumni declaring engineering and computer science majors by their second year of college, we're quickly getting there.

KIDS LEARN BETTER AND GROW STRONGER WHEN THEY'RE SURROUNDED AND SUPPORTED BY PEOPLE WHO UNDERSTAND WHERE THEY COME FROM AND WHO CAN SEE THEIR POTENTIAL – PEOPLE LIKE YOU. AS AN ORGANIZATION, *FIRST* LEARNS AND GROWS STRONGER WHEN IT IS SUPPORTED BY YOU, TOO.

With your support, we're focused on expanding participation; improving equity, diversity, and inclusion in our programs; scaling our programs efficiently; ensuring sustainability; and achieving broad recognition. These strategic objectives have driven our actions these past few years, and they will continue to be our guiding pillars going forward.

It's thanks to the full FIRST community that FIRST participants have the confidence and strength to move past their toughest challenges and forge their way into the future. FIRST is uniquely positioned to reach deep into neighborhoods around the world to help young people overcome obstacles standing in their way and give them a place to belong – and yet there are still so many neighborhoods without access to FIRST. We must continue expanding our reach until youth robotics is as ubiquitous and accessible as youth soccer.

As we move into the next decade of FIRST, let's build a better future – together.

#### TABLE OF CONTENTS

2

FIRST® & Beyond 30-year Timeline & Season Highlights Start

3

Founder's Letter

5

Co-Chairs' Letter

6

Impact That Goes Beyond High School

8

Progression of Programs

10

Beyond Barriers & Stereotypes for Girls and Women in STEM

13

Beyond the Robots

16

FIRST Alumni

17

FIRST LAUNCH: A Season in Numbers

18

FIRST® LEGO® League Jr.

20

FIRST® LEGO® League

22

FIRST® Tech Challenge

24

FIRST® Robotics Competition

26

FIRST, Inspire Gala

28

FIRST Championship

30

In Memory of Kendrick Castillo

32

Sponsors

33

Contributors

41

FIRST, Inspire Gala Sponsors

42

FIRST Championship Sponsors

43

FIRST Scholarship Program

44

Program Delivery Partners

46

Volunteers of the Year

50

Financials

51 Leadership

This Annual Impact Report covers the period of July 1, 2018, to June 30, 2019.

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The inaugural
FIRST Scholarship
is awarded by
Worcester Polytechnic
Institute (WPI).



FIRST Founding Sponsors (see page 33) pledge support to kickstart growth of FIRST.

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The domain name for the web search engine Google is registered.





THE T

FIRST and the LEGO Group partner to pilot a junior robotics program, FIRST LEGO League. 200 teams of students ages 9-14 participated.





Apple releases the iTunes media player and first-generation iPod portable media player.



### **CO-CHAIRS' LETTER**

students with other supported
We dedicated moon explorated when the first leading to the state of the state o

Kelly Ortberg Co-Chair, Board of Directors



Bob Tuttle Co-Chair. Board of Directors

This season of *FIRST*, it was ALL SYSTEMS GO. For the first time, *FIRST* programs were united under a common theme, *FIRST* LAUNCH, helping to further strengthen the connections between students and volunteers across our programs. This season brought together more than 570,000

students with 175,000 volunteers and thousands more sponsors, donors, alumni, and other supporters who help fuel the mission of *FIRST* in 110+ countries.

We dedicated our *FIRST* LAUNCH season to space exploration to mark both 50 years of moon exploration and 30 years of *FIRST* inspiration. On that Sunday night in July 1969, when the first humans touched down on the moon, the world was united in celebration of human ingenuity and inspired by the possibility that by working together, we can quite literally reach the stars.

We hope this is the feeling *FIRST* has brought you, whether you've been involved in our community for 30 years or one. Just like all those who were involved in the Apollo 11 mission, the *FIRST* community is working together to solve problems and build a bright future. Thank you for being part of it.

We're especially grateful for the *FIRST* alumni who continue to be a part of our community. It's amazing to see what our alumni can accomplish thanks to the lasting impact of *FIRST*. Three decades of *FIRST* alumni are changing the world as entrepreneurs, community leaders, and key contributors to organizations like NASA, a *FIRST* Strategic Partner. While addressing the U.S. Congress, NASA Administrator Jim Bridenstine made an out-of-this-world case for supporting *FIRST* participants and alumni: "If you look at the people who are building our robots that are currently on Mars, they were participants in *FIRST* robotics when they were coming up through school. That's an amazing program that has paid dividends for NASA and, in fact, for the country."

Through our partnership with LEGO® Education, we're learning we need even earlier onramps for engaging children in STEM and preparing them for the future. In consultation with early childhood education experts, we developed the *FIRST* LEGO League Jr. Discovery Edition for teams of children ages 4-6 and will continue our pilot into next year.

Shortly before publication of this report, Dr. Woodie Flowers, an innovator in design and engineering education and an incredible advisor and supporter of our mission (see right), passed away. As thousands of heartfelt tributes to Woodie have poured in from around the world, it is clear his legacy will live on indefinitely through the gracious nature of our community and our ongoing commitment to empowering educators and building global citizens.

After nearly seven years of outstanding leadership, Don Bossi is retiring from his position as President of *FIRST*. During his tenure, *FIRST* teams have more than doubled in number and high-priority strategic initiatives were significantly advanced. We thank Don for all that he has done for *FIRST* and know he will remain a great supporter.

As an organization, our efforts will continue to focus on ensuring every kid has access to the STEM inspiration and knowledge our programs provide. Every day, the world changes a little more, and our problems grow a little more complex. That's why it's on us to support the young people who will join us in solving them. Using the tools we give them now, they'll change our future.



#### DR. WOODIE FLOWERS (1943-2019)

Dr. Woodie Flowers was Co-Chair of the *FIRST* Executive Advisory Board, Distinguished Advisor to *FIRST*, and Pappalardo Professor Emeritus of Mechanical Engineering at the Massachusetts Institute of Technology. Soon after Dean Kamen founded *FIRST*, he and Woodie collaborated on the development of the *FIRST* Robotics Competition. Woodie was also critical to establishing the ethos of *FIRST* by coining the term *Gracious Professionalism®* and nurturing its meaning in his every action.

Throughout the 30 years of *FIRST*, Woodie has been an incredible supporter of our mission, a friend to everyone he met, and an inspiration to our students, alumni, mentors, volunteers, supporters, and staff. Recipients of our Woodie Flowers Award (see page 25), past and future, will carry on his legacy as mentors who inspire young people through the art and science of engineering and design.

Throughout the 2020 season and beyond, the *FIRST* community will celebrate Woodie's life and legacy. Woodie's beloved wife, Margaret, has and will continue to be a key part of *FIRST*. She has graciously asked that those wishing to honor Woodie do so through the Woodie Flowers Memorial Fund:

firstinspires.org/woodie-flowers-memorial



FIRST LEGO League Jr. is launched, bringing the FIRST experience to children as young as age 6.



Facebook is launched.







FIRST Tech Challenge is introduced as a pilot program for middle and high school students.



The first video is uploaded to the online video hosting service, YouTube.





President George W. Bush honors FIRST teams at the White House.



#### FIRST PREPARES STUDENTS FOR A STEM FUTURE.

Our programs use strategies known to increase STEM interest among students in K-12. These include hands-on learning, working as a team on real life-life problems, exposure to careers and adult mentors, emphasis on FIRST Core Values (see page 13), and a culminating celebration where students can showcase what they created and learned.

These strategies increase students' awareness of STEM, which leads to increased interest and engagement and later influences their education and career choices.

We are partnering with Brandeis University to conduct a multi-year longitudinal study measuring STEM-related impacts. Findings at 60 months from the FIRST Longitudinal Study (April 2019) provide evidence that after high school, student interest in STEM is sustained and results in increased actions, including taking courses in computer science and engineering and declaring STEM-related majors.

#### FIRST ALUMNI

By sophomore year of college, *FIRST* alumni are more likely to be majoring in STEM fields than comparison group peers.





FIRST alumni 89%

Comparison group 59%

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

FIRST alumni 70%

TAKE COURSEWORK IN ENGINEERING OR

Compared to their peers, FIRST female alumni

are more likely to take coursework in engineering

Comparison 25%

**COMPUTER SCIENCE** 

#### WOMEN IN FIRST

Young women in *FIRST* have significant gains in all STEM areas including STEM interest, career interest, activity, knowledge, and identity compared to their non-participating peers.

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

FIRST female alumni are more likely to declare majors in engineering and computer science than their peers.

tnan their peers.		and computer science.
FIRST female alumni	59%	3.7x Engineering
100/		
Comparison 12%		5.3 χ Computer science

#### BENEFITS OF FIRST

Positive impacts are evident for all *FIRST* students regardless of race, gender, income, or community type.

FIRST students are three times more likely to show an increase in STEM interest than comparison group students.



FIRST STUDENTS ARE SIGNIFICANTLY MORE LIKELY TO SHOW GAINS IN STEM OUTCOMES THAN COMPARISON STUDENTS

3.0x	Interest
2.6x	Activity
2.5x	Career interest
2.0x	Knowledge
1.9x	Identity

View more information about the study at www.firstinspires.org/impact.

"It's been a few years since I participated in *FIRST* and I still find instances where I have more experience with problem solving and working with a group than many of my peers ... I can still credit FIRST as my catalyst for pursuing a career in engineering, but also as my first contact with problem solving, building, and designing."

- FIRST female alum



# PROGRESSION OF PROGRAMS

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

FIRST ALUMNI ARE ELIGIBLE TO APPLY FOR MORE THAN \$80 MILLION IN SCHOLARSHIPS FROM COLLEGES, UNIVERSITIES, AND TECHNICAL PROGRAMS THROUGH THE FIRST SCHOLARSHIP PROGRAM (SEE PAGE 43).



#### FIRST. LEGO LEAGUE JR.

It's never too early to discover STEM

#### THE CHALLENGE:

Teams of children explore scientific concepts through a real-world theme. Kids then work together to build a model and, with LEGO® Education WeDo 2.0, code it to make it move.

#### THE JOURNEY:

Each team documents its work in an Engineering Notebook and creates a *Show Me* poster to chronicle its research journey. In a season-culminating Expo, teams celebrate what they learned and created together.

#### THE OUTCOME:

Through their own research, critical thinking, and imagination, young children develop an early interest in STEM, learn to work together as a team to achieve a common goal, and have a ton of fun.



# FIRST LEGO LEAGUE

Young innovators using skills and imagination to solve problems as a team

#### THE CHALLENGE:

Teams collaborate to design, build, code, and test LFGO® Education MINDSTORMS® EV3 robots for autonomous missions on a themed. table-top playing field. Each team works together to solve a real-world problem.

#### THE JOURNEY:

Each season culminates in a series of regional tournaments and championships, where teams compete with their robots and share what they've learned and invented.

#### THE OUTCOME:

Using STEM concepts, students overcome the same challenges that face scientists today. They develop critical-thinking and presentation skills, build self-confidence in STEM, and have fun while working as part of a team. \*Age varies by country



# FIRST. TECH CHALLENGE

It's way more than building robots

#### THE CHALLENGE:

Teams of students design, build, code, and operate Android smartphone-controlled robots to compete head-to-head in an alliance format. Students are encouraged to create team brands and reach out to their communities.

#### THE JOURNEY:

Teams compete at local and regional events, building 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



# FIRST. ROBOTICS COMPETITION

An exciting sport built around the world of STEM

#### THE CHALLENGE:

Under strict rules, with limited time and resources, high school teams use sophisticated technology to build and program industrial-size robots for a challenging field game. Each team develops a brand, 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 qualifying 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.





FIRST LEGO League becomes "One Million Strong" and celebrates more than 1M STEM-learning experiences provided to children around the world.



NASA's Mars Curiosity Rover, a giant mobile science laboratory, lands on Mars.





200+ Fortune 500 companies support FIRST.





The Dr. Bart Kamen Memorial FIRST Scholarship Fund is established, honoring Dean Kamen's late brother, a pediatric oncologist.





FIRST robots cut the opening ribbon and lead the 87th Macy's Thanksgiving Day Parade.





Women account for one-half of the college-educated workforce in the United States, but less than one-third of the science and engineering workforce.

Girls and women play a critical role in the advancement of STEM – but a significant gender gap remains within STEM careers. At FIRST, we are actively developing ways to address the overall issues and barriers, particularly in managing and allocating resources, programs, and educational opportunities fairly to all genders. We are committed to creating a diverse, inclusive, and equitable community for all participants.

#### WHAT FIRST IS DOING:

- Launched online resources for elevating girls and young women in STEM
- Developed Equity, Diversity, and Inclusion (ED&I) training modules for mentors and youth participants
- Facilitated grants to lower barriers to entry for underserved communities
- Collaborated with *FIRST* community-led initiatives such as #FIRSTLikeAGirl and LGBTQ+ of FIRST and nonprofits such as Society of Women Engineers, Girl Scouts, and Girls Inc. to raise awareness and access. including through women-in-STEM-focused panel sessions and representation on the FIRST Board of Directors and ED&I Youth Advisory Committee

#### PROGRESS:

- Over the past several years, young women's participation in FIRST in the United States has risen steadily from 25% to 32%.
- Of the 29,800+ young people reached through *FIRST* ED&I strategic initiatives in 2019, 48% are girls and 90% are economically disadvantaged.
- Girls who join *FIRST* see amazing impacts. While all FIRST participants are significantly more likely to show gains in STEM than their classmates, girls in FIRST indicate even greater gains in STEM than boys in FIRST or their peers, according to the FIRST Longitudinal Study (see page 6).



#### TEEN SISTERS CREATE SPACE FOR GIRLS TO CODE

To close the gender gap in STEM, girls in FIRST should have equitable opportunities to fill all roles on their teams, including technical roles like coding. That's what inspired sisters Parker and Greta Mayer to start the "Nerdy Girls" project. Parker and Greta give robot-building tutorials and mentor two FIRST Tech Challenge teams from their barn in rural Ellensburg, Washington. EACH GIRL GETS A CHANCE TO BUILD AND CODE ROBOTS - AND EXPERIENCE THE THRILL OF A ROBOT RUNNING HER CODE. "WE WANTED AS MANY GIRLS AS POSSIBLE TO HAVE THAT FEELING." said Parker. "Our ultimate mission is to target teams in rural areas to make trying to start robotics teams a little bit easier."

The hands-on experience and supportive community they are providing is creating a pipeline for an exciting future for the "Nerdy Girls" and their families. "It's made me hopeful for my kids' futures in a way I haven't been able to be for a very long time," said Nikki Pollock, a team parent. "I really can see that she's got a bright future, and I know how to get her there."



#### **ELEVATING VOICES OF GIRLS IN FIRST**

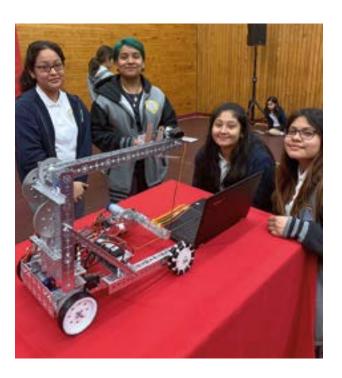
FIRST Robotics Competition Team 1902 "Exploding Bacon" from Orlando, Florida, started #FIRSTLIKEAGIRL as a local project targeting FIRST LEGO League students to combat a drop in female STEM participation during middle school. IT AIMED TO HELP GIRLS FIND ROLE MODELS THEY IDENTIFY WITH AND ARE INSPIRED BY AND EMPOWER THEM TO BECOME ACTIVE MEMBERS OF THE FIRST COMMUNITY AND FOLLOW THEIR DREAMS IN STEM. #FIRSTLikeAGirl exploded to a global social media campaign within the FIRST community, engaging 2,200 FIRST teams from 70 countries. "Exploding Bacon" won the 2019 Chairman's Award for their efforts.





#### **CREATING OPPORTUNITIES FOR** YOUNG MOTHERS

FIRST Robotics Competition Team 6664 "LadyBots" is changing lives for young women from the Sonia Sotomayor Early College High School in Pharr, Texas, a high school that supports expectant and teenage mothers in completing their education. Students join the FIRST team to build skills that will help them succeed in their careers and gain support and encouragement from each other and other FIRST teams. "JUST BECAUSE WE ARE MOMS. WE ARE NOT LIMITED IN WHAT WE CAN DO. AND WE ALSO BUILD EACH OTHER UP BECAUSE WE KNOW EACH OTHER'S HARDSHIPS". said FIRST alum Salma Sayas.



#### FIRST STEM EQUITY GRANTS REACH YOUNG WOMEN

When The Young Women's Leadership School (TYWLS) of Astoria launched a FIRST Tech Challenge team, student leader Tania N. said the team ignited a lot of interest for robotics at the school, with many girls approaching Tania to teach them how to build. "I LOVE SEEING THE SPARK IN THEIR EYES. THEIR LIVES WILL CHANGE, JUST LIKE MINE DID. WE'RE GOING TO SEE MORE WOMEN IN STEM," said Tania.

The team's impact inspired them to apply for a 2018-2019 FIRST STEM Equity Community Innovation Grant. The funding enabled them to bring FIRST programs to three TYWLS locations in underserved communities in New York City, which school leadership says has been critical in fostering students' creativity, engagement in STEM, and teamwork skills. "TYWLS aims to develop future female leaders, and the competitive teamwork and entrepreneurship skills developed through FIRST clearly support this goal," said Michell Tollinchi-Michel, Managing Director of TYWLS at Student Leadership Network.

To learn more about FIRST Equity, Diversity, and Inclusion initiatives, visit firstinspires.org/diversity.



# **BEYOND** THE ROBOTS

The FIRST Core Values encourage teams from all programs to become global citizens and create meaningful change within their communities and around the world. These stories are just a sample of the thousands of teams whose involvement in *FIRST* goes beyond robots.

#### FIRST CORE VALUES

We express the FIRST philosophies of Gracious Professionalism® and Coopertition® 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!

# FIRST LAUNCH 2019 ALL SYSTEMS GO FIRST AND RUCKUS FIRST AND RUCKUS FIRST AND RUCKUS FIRST SPACE FIRST announces a landmark 2019 season theme celebrating space innovation and the organization's 30th anniversary – the first-ever unified cross-program season, FIRST LAUNCH. The FIRST Scholarship Program expands to make available \$80 million in college scholarships to FIRST alumni.

Twelve underserved and underrepresented communities receive STEM Equity Community Innovation grants from FIRST to start FIRST teams and support inclusion strategies, reaching 3,820 youth on 615 teams.





Jeff Bezos, founder of Amazon.com, and FIRST alum Melissa Smith are honored at the fourth annual FIRST, Inspire Gala in New York City.



Donna Strickland, an associate professor in physics at the University of Waterloo, wins the 2018 Nobel Prize in physics. Strickland is only the third woman in history to receive this honor.

#### **BEYOND THE ROBOTS CONTINUED**







#### FIRST TEAMS BUILD FOR KIDS WITH MOBILITY NEEDS

In April 2019, *FIRST* Robotics Competition Team 2987 "Rogue Robotics" from Farmington, Minnesota, received national attention from NBC Nightly News, CBS News, The New York Times, and other media when they built a customized power wheelchair for a 2-year-old boy with limited mobility. The team gained as much as they gave with the project: Team member Nicole Cash said, "I THINK WE WON HERE MORE THAN WE DO IN OUR COMPETITIONS," while team member Alex Treakle said, "THE JOY ON HIS FACE REALLY MADE MY ENTIRE YEAR."

"Rogue Robotics" is one of many *FIRST* teams creating customized wheelchairs by modifying ride-on toy cars for kids with mobility needs. *FIRST* Robotics Competition Team 1939 "KUHNIGITS" from Kansas City, Missouri, created an online forum where families in need across the

world can connect with local *FIRST* teams, download howto manuals, and share their success stories. Teams come together for community build sessions where teams work together to build multiple cars at once.

The modified cars are a less-expensive alternative to power wheelchairs; a customized ride-on toy car costs about \$300 compared to several thousand for a motorized wheelchair. THE CARS RESTORE PHYSICAL INDEPENDENCE, ALLOWING KIDS TO ACHIEVE CRITICAL DEVELOPMENTAL MILESTONES AND PLAY WITH THEIR PEERS AND FAMILIES. Retrofitting a car allows teams to use the design, mechanical, and programming skills developed in *FIRST* to create a meaningful, life-changing impact on the recipient and their families.



#### TORNADOES PROVIDE NECESSITIES TO THEIR PEERS

FIRST Robotics Competition Team 7314 "Tornadoes" from Franklin, New Hampshire, lives in a school district where more than 60% of the students receive free or reduced lunch and approximately 8% are homeless. THE TEAM WORKED TO EXPAND THE SIZE AND REACH OF THE SCHOOL'S MAKESHIFT THRIFT SHOP, "KARMA KORNER," BY CONTACTING LOCAL BUSINESSES AND COMMUNITY CENTERS TO SECURE SUPPLIES AND FUNDING.

Through their outreach, the team was able to add a food pantry to Karma Korner, as well as purchase washers and dryers so students can clean their clothes at school. Team members spend several hours a week stocking the shelves and taking inventory to provide clothing, shoes, toiletries, school supplies, and food anonymously and at no cost to their peers. "WE'RE NOT JUST ABOUT BUILDING ROBOTS; WE'RE ABOUT MAKING THE COMMUNITY WHOLE." team member Xiomara Head told the Concord Monitor.



#### **BUCKETS BRING CLEAN WATER TO 7,000 PEOPLE**

During the 2017-2018 FIRST LEGO League HYDRO DYNAMICS<sup>™</sup> season. Team 7304 "Buckets" from Ravena, New York, established a nonprofit called We Give Water. THEIR PROJECT BROUGHT TOGETHER SOLAR-POWERED DEEP-WATER WELLS. MOBILE PAYMENT SYSTEMS, AND CROWDFUNDING TO BRING CLEAN. RELIABLE WATER TO COMMUNITIES IN NEED. The team continued its work on We Give Water after the season and has raised more than its \$20,000 goal to fund clean water projects.

We Give Water implemented its first clean water system in June of 2019, bringing clean water to more than 7,000 people in the village of Wellingara Ba, Gambia. "FIRST LEGO LEAGUE HAS BEEN A VERY POSITIVE EXPERIENCE FOR OUR CHILDREN. AND NOW WE'RE SEEING GLOBAL IMPACT AS WELL. THE HYDRO DYNAMICS THEME INSPIRED OUR CHILDREN TO BRING LASTING CHANGE TO THE WORLD," said team parent Kate Robertson.



#### FIRST SPARKS PASSION FOR PUBLIC SERVICE

Some FIRST alumni pursue public service after graduating high school. FIRST alum Amanda Pham said the strong role models she met through FIRST sparked her passion for volunteerism: "I HAVE FOND MEMORIES OF THE VOLUNTEERS I ENCOUNTERED. I REMEMBER THE FIRST LEGO LEAGUE REFEREE WHO DANCED AT OUR TABLE, THE JUDGE WHO TOLD US SHE STOOD ON A CHAIR TO VOUCH FOR MY TEAM, AND THE PASSIONATE PARTNERS AND DIRECTORS WHO NEVER CEASED TO LOVE THEIR WORK."

After graduating high school, Amanda applied to be a national service member with AmeriCorps VISTA (Volunteers In Service To America), a U.S. program that works to alleviate poverty by finding, training, and supporting full-time volunteers to build capacity for nonprofit organizations. She was even able to serve with FIRST as part of her service. Now that her VISTA service has ended, Amanda is pursuing her bachelor's degree and is currently working at FIRST headquarters.







FIRST Championship events in Houston, Texas. and Detroit. Michigan, see record numbers: 77,000 people from around the world participate in the two-week event. *FIRST* Championship remains the world's largest celebration of STEM for students.





"Good Morning America" highlights FIRST and the exciting sport of robotics in a segment reaching an audience of 4.2 million people in the U.S.



FIRST LEGO League Jr. Discovery Edition is piloted, providing students ages 4-6 with hands-on STEM learning experiences.





FIRST introduces Class Packs, enabling educators to incorporate FIRST programs into their classroom curriculum.





The first plants germinate on the moon, a landmark discovery for learning how well humans can grow food on the moon.





The FIRST movement will continue to grow until every kid. everywhere. has access to transformative FIRST programs, as we work together to build a better future for us all.

# **FIRST ALUMNI**

FIRST prepares students for life beyond high school: scholarships, careers, and beyond.

#### FIRST ALUMNI STAND OUT TO EDUCATORS AND EMPLOYERS.

They are smart, innovative, driven, and prepared for life beyond high school, whether they choose to pursue public service, continue their education, or dive into the workforce.

- The vast majority of *FIRST* alumni report more confidence in leadership roles, time management, creative thinking, perseverance, and problem solving after FIRST participation.
- 89% of FIRST alumni declare majors in STEM by year two of college, compared to 59% of a comparison group of students, according to the FIRST Longitudinal Impact Study conducted by Brandeis University.

"WHEN YOU BECOME A FIRST ALUM. YOU UNDERSTAND JUST HOW WIDE THE FIRST NETWORK REACHES AND JUST HOW WILLING AND EXCITED THAT NETWORK IS TO HELP YOU ACHIEVE YOUR GOALS. I GOT INVOLVED WITH FIRST ALMOST NINE YEARS AGO. AND IT'S BEEN AMAZING TO SEE THE WAYS IN WHICH FIRST AND THE CONNECTIONS I FORMED THROUGH IT HAVE SHAPED MY JOURNEY EVER SINCE. I GRADUATED FROM A FIRST PARTNER SCHOOL. YALE UNIVERSITY. AND NOW WORK AS A MECHANICAL ENGINEER FOR DEAN KAMEN'S R&D COMPANY, DEKA, WHERE I GET TO WORK EVERY DAY ON REALLY COOL, LIFE-CHANGING MFDICAL TECHNOLOGY."

- Naoka Gunawardena, FIRST alum and mechanical engineer

#### FIRST CONTINUES TO SUPPORT FIRST ALUMNI AFTER HIGH SCHOOL.

- FIRST Scholarship Program (see page 43)
- FIRST Internship Portal
- FIRST Alumni Networking Groups
- Resources for career advice online and at FIRST alumni events

Learn more at www.firstinspires.org/alumni





# I AUNI III

2919 + ALL SYSTEMS GO

# FIRST LAUNCH: A SEASON IN NUMBERS

space-themed challenges

570,000+
students in 110+ countries

300,000 mentor, coach, judge, and volunteer roles

20 million

volunteer hours served

3,500+
scholarship opportunities totaling
\$80 million+ from 200+ providers

3,600 official events in

100+ countries

attendees at annual FIRST Championship

45,000+





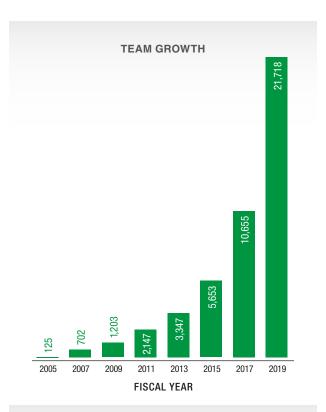
Teams explored what they would need to live on Earth's Moon. They designed, built, programmed, tested, and improved a Team Model of a Moon Base to show their ideas for solving a challenge of living on the Moon. They used the MISSION MOON<sup>SM</sup> Inspire Model (a LEGO® rocket) in their design and LEGO® Education WeDo 2.0 to build and program a motorized part. Teams documented their journey in an Engineering Notebook and a *Show Me* poster.



SEASON SNAPSHOT FIRST developed and piloted FIRST LEGO League Jr. Discovery Edition – aimed at providing age-appropriate STEM experience to build habits of learning - based on the LEGO Education STEAM Park and Duplo® system. This level of FIRST LEGO League Jr. focused on PreK-1 will roll out during the 2019-2020 season.

"WE HOSTED OUR FIRST-EVER KIPP NYC STEM FIRST LEGO LEAGUE JR. EXPO IN FEBRUARY 2019. THERE HAS NEVER BEEN ANY KIND OF STEM EXPO ACROSS THE KIPP NYC NETWORK, AND THIS ONE WAS A REAL SUCCESS. WE HAD OVER 200 PARTICIPANTS ON A SATURDAY! KIDS WERE SO EXCITED ABOUT THE MEDALS THEY RECEIVED THAT THEY WORE THEM FOR AN ENTIRE WEEK AFTERWARDS. THIS REALLY HELPED SPREAD THE WORD ABOUT THE PROGRAM AND GET PEOPLE EXCITED."

-Chéla S. Wallace, Director of K-12 Science, KIPP NYC Public Charter Schools (FIRST STEM Equity Community Innovation Grantees)



**SEASON FACTS** 

130,300

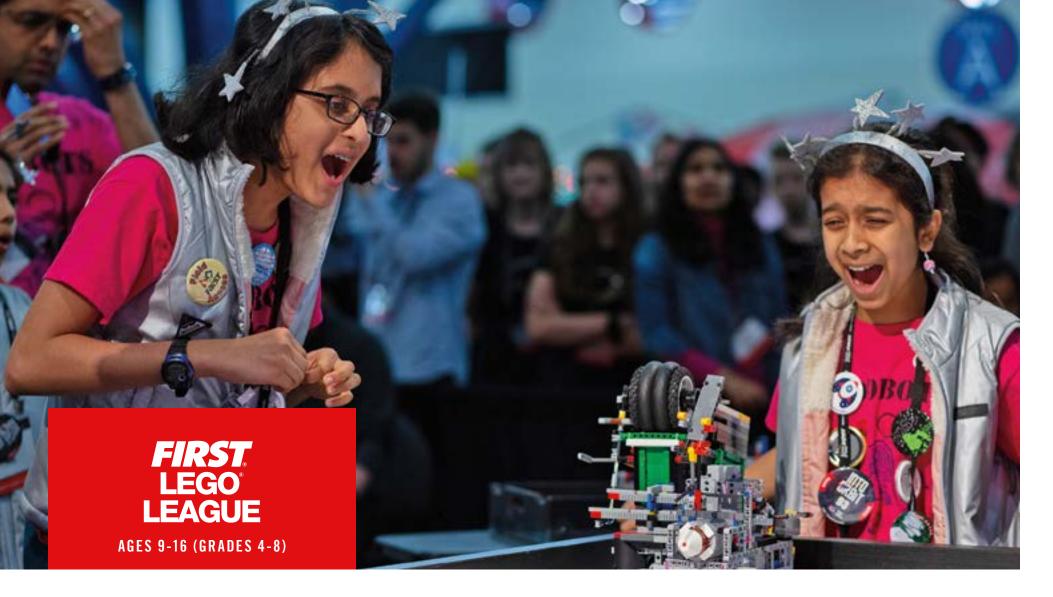
teams in 103 countries

discovered the excitement of STEM.

Teams presented their Team Model and Show Me poster in

events

countries





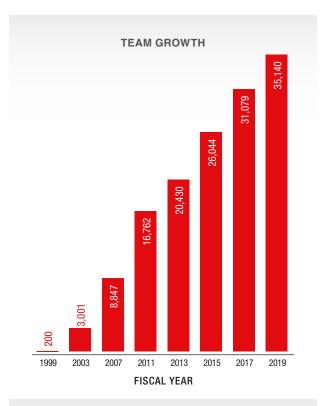
Teams worked together to break out of earthly constraints. They identified a physical or social problem faced by humans during long-duration space exploration and designed a solution. Each team also built and programmed an autonomous LEGO® MINDSTORMS® robot to solve missions on a playing field. Each mission represented the engineering and science behind space travel.



SEASON SNAPSHOT In its ninth year, the 2019 FIRST LEGO League Global Innovation Award ceremony brought together 20 semi-finalist FIRST LEGO League teams to celebrate their innovations in long-duration space exploration and attend workshops on crafting strong pitches, business models, user experience design, and more, led by supporters and sponsors. Inventions in space-friendly health care and clothing products received awards. Team FrancoDroid from Rio de Janiero, Brazil, won the top \$20,000 prize and also the inaugural 2019 Global Innovation People's Choice Award.

"FIRST LEGO LEAGUE HAS HELPED ME BECOME A BETTER INNOVATOR, THINK OUTSIDE THE BOX, AND NOT TO BE SCARED TO TACKLE PROBLEMS LIKE SCIENTISTS AND ENGINEERS HAVE BEEN TRYING TO SOLVE FOR YEARS. IT DOESN'T MATTER IF PEOPLE THINK YOUR SOLUTION IS TOO WEIRD OR TOO DIFFERENT TO WORK. WHEN YOU SHOW YOU CAN FIX A PROBLEM IN A NEW WAY, THEY WILL UNDERSTAND. THE FACT THAT IT WAS DIFFERENT IS WHAT MADE IT SUCCESSFUL."

- Camilla Salvagno, Student, FIRST LEGO League Team "iDB-Tech-No-Logic," Verona, Italy (2019 Global Innovation Award Runner-Up)



**SEASON FACTS** 

281,120

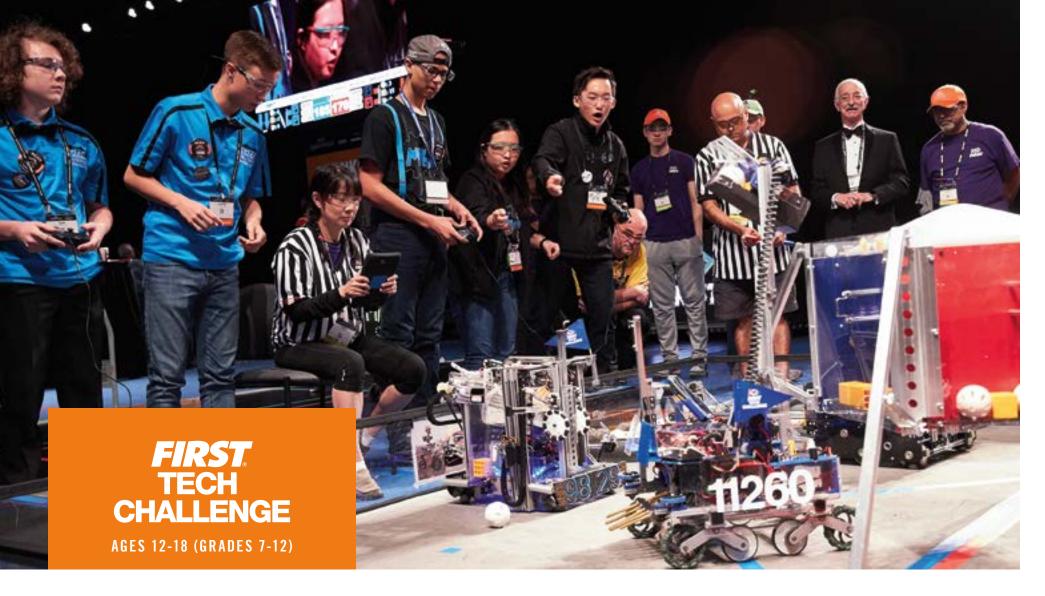
teams in 107 countries

explored what's possible when we work together to solve pressing issues facing our planet.

Teams competed with their robots and shared what they learned through their projects and FIRST Core Values in

events

countries





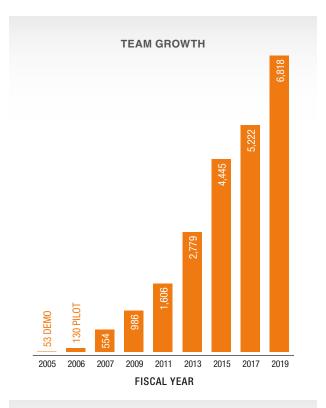
Teams worked in an alliance to go on a space adventure. Students designed, built, coded, and operated sophisticated robots to descend from the lander, collect and sort minerals into the cargo holds, and perform autonomous tasks to compete on the field during two-and-a-half minutes of gameplay.



SEASON SNAPSHOT "Winning is temporary; Learning is forever." That was the quote of the day from a winning team at the national championship for FIRST Tech Challenge Romania. 145 teams from all over the country gathered in Bucharest for the event held March 23-25, 2019. Romania experienced 61% team growth this season.

"MY MENTORS ARE MY HEROES. I DID NOT KNOW IT THEN, BUT I DEFINITELY KNOW IT NOW. I KNOW THE WORLD TO BE A CHALLENGING PLACE, AND I'M GLAD MY MENTORS TOOK THE TIME TO TEACH ME HOW TO FISH, INSTEAD OF FISHING FOR ME. FIRST GIVES YOU THE SKILLS TO MAKE A REAL IMPACT IN THE WORLD."

-Connor Tinker, FIRST alum, FIRST Tech Challenge Team "Some Disassembly Required," Clarksville, Maryland





teams in 37 countries

developed STEM skills, practiced engineering principles, and explored the value of teamwork.

Teams competed with their robots and to earn awards based on their teamwork, creativity, innovation, and community outreach in

events

countries



DESTINATION:



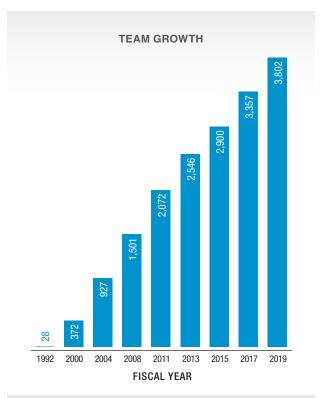
All systems go! Teams built and programmed industrial-sized robots to compete in alliances to collect samples on planet Primus. Unpredictable terrain and weather patterns made remote robot operation essential to their mission on the planet. With only two-and-a-half minutes until liftoff, the alliances were challenged to gather as much cargo as possible and prepare their spaceships for liftoff before the next sandstorm arrived.



SEASON SNAPSHOT For the first time, a FIRST alum received the Woodie Flowers Award, which celebrates an outstanding mentor who demonstrates excellence in teaching science, math, and creative design. Allen Gregory IV, who participated in FIRST Robotics Competition in high school and is now a mentor for Team 3847 "Spectrum-△¬" in Houston, Texas, received the high honor at the 2019 FIRST Championship.

"I'M SUPER PROUD TO BE A FIRST ALUM. THE PROGRAM SINGLE HANDEDLY CHANGED MY LIFE. I LEARNED LEADERSHIP, PUBLIC SPEAKING, HOW TO RAISE MONEY, HOW TO ACTUALLY BUILD A ROBOT, HOW TO DO PROGRAMMING, AND I MADE FRIENDS ALL AROUND THE WORLD."

-Neil Parikh, FIRST alum, FIRST Robotics Competition Team "Raider Robotix," North Brunswick, New Jersey; co-founder, Casper



**SEASON FACTS** 

teams in 35 countries

unlocked real-world engineering concepts, self-confidence, and workforce skills, supported by professional team mentors and sponsors.

Teams competed with their robots for prestigious awards in front of cheering crowds in

events.

countries.



The fourth annual *FIRST*, Inspire Gala brought hundreds of *FIRST* supporters to New York City on November 1, 2018, to raise funds to further expand access to *FIRST* programs and reach underrepresented, underserved, and vulnerable students.

"HIGH-QUALITY STEM LEARNING AND ENGAGEMENT OPPORTUNITIES LIKE *FIRST* CAN BE A GAME-CHANGER FOR YOUNG PEOPLE WHO MIGHT OTHERWISE NOT HAVE ACCESS TO PATHWAYS TO DEVELOP THE SKILLS THEY NEED TO BE LEADERS, INNOVATORS, AND CHANGE MAKERS." - DON BOSSI

#### "FIRST TRULY ALLOWS STUDENTS TO FEEL EMPOWERED TO SHAPE THEIR OWN DESTINIES." - Melissa Smith

Jeffrey P. Bezos, founder of Amazon.com, received the "Leadership in Technology" Award. The award recognizes outstanding visionaries whose leadership in innovation and advancing technology has changed the way we live, work, and communicate. At the gala, Bezos sat down with journalist Walter Issacson for an inspiring, forward-looking conversation.

FIRST alum Melissa Smith, a senior user experience researcher at Google, received the "Evelyn Kamen Rising Star" Award for her dedication to continuing to live the FIRST ethos in a way that is inspiring the next generation of FIRST participants. Melissa strives to share the excitement and possibilities STEM can offer people who otherwise may not encounter them. She continues her 18-year involvement in FIRST as a head referee and regional planning committee member at FIRST Robotics Competition events. "I was able to take my love for technological creation and development, that I learned through FIRST, and literally make a life's work out of it," said Smith.

Thank you to our FIRST, Inspire Gala sponsors who appear on page 41 of this report.

"YOU HAVE TO LEARN TO LEARN. WHATEVER YOU DO. CHOOSE SOMETHING YOU CAN BRING PASSION TO." - Jeff Bezos







# RECORD-BREAKING FIRST CHAMPIONSHIP CELEBRATES INNOVATION AND STEM INSPIRATION

For back-to-back weeks in April 2019, MORE THAN 77,000 PEOPLE FROM AROUND THE WORLD TRAVELED TO HOUSTON AND DETROIT TO CELEBRATE INSPIRING YOUNG INNOVATORS, LEADERS, AND CHANGE MAKERS at the 2019 *FIRST* Championship, presented by Qualcomm® Incorporated. The event brought together tens of thousands of students from around the world who participate in our programs – along with the passionate volunteers, educators, industry professionals, sponsors, organizations, and colleges/universities who support them – for a celebration of STEM inspiration and space exploration.

2019 FIRST CHAMPIONSHIP HIGHLIGHTS

77,000 attendees

countries represented

34,000+
team members (students, mentors, coaches, and adult supporters)

2,200+

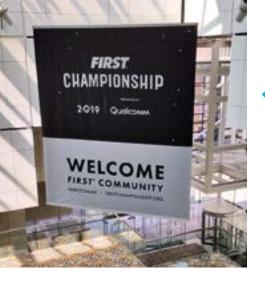
1,300

1,367,854,087

159,570,937

DEAN KAMEN PRESENTED THE 2019
FOUNDER'S AWARD TO RAJ SUBRAMANIAM,
PRESIDENT AND CEO OF FEDEX, AT FIRST
CHAMPIONSHIP IN DETROIT. FEDEX RECEIVED
THE AWARD FOR ITS LONGTIME SUPPORT
OF FIRST, INCLUDING SHIPPING THE KIT OF
PARTS, ROBOTS, AND FIELD COMPONENTS,
BOTH DOMESTICALLY AND INTERNATIONALLY,
FOR FIRST ROBOTICS COMPETITION TEAMS.





"THIS IS THE AGE WHEN A PASSION FOR INNOVATION STARTS WITH **STEM.** WE ARE COMMITTED TO GIVING TODAY'S STUDENTS THE FOUNDATIONS THEY NEED TO INVENT THE FUTURE AND ARE PROUD TO SUPPORT FIRST."

THIRTEEN OF THE FOURTEEN STUDENTS ON FIRST ROBOTICS COMPETITION TEAM 7906 "UNDERDOGS" WERE REFUGEES FROM SEVEN COUNTRIES. NONE HAD STEM EXPERIENCE WHEN THEY JOINED THE TEAM. THAT DIDN'T STOP THE COTTONWOOD HIGH SCHOOL TEAM (SALT LAKE CITY, UTAH) FROM MAKING IT TO THE 2019 FIRST CHAMPIONSHIP IN THEIR FIRST YEAR. FIRST STRATEGIC PARTNER BOEING HEARD THEIR STORY AND SURPRISED THE STUDENTS IN HOUSTON WITH \$5,000 AND A DEDICATED BOEING MENTOR. "CONGRATULATIONS! LOOKING FORWARD TO YOU ALL BEING EMPLOYEES ONE DAY," SAID JOHN BLAZEY, VICE PRESIDENT OF BOEING GLOBAL ENGAGEMENT.

"I HAD THE OPPORTUNITY TO GO OUT TO NASA JET PROPULSION CENTER IN CALIFORNIA ... MANY WERE GRADUATES OF THE FIRST ROBOTICS PROGRAM. THEY WERE ALUMNI. THINK ABOUT THIS: TEN YEARS AGO, THEY WERE IN YOUR SEAT. TEN YEARS FROM NOW. WHERE WILL YOU BE? WHAT WILL YOU DISCOVER?"



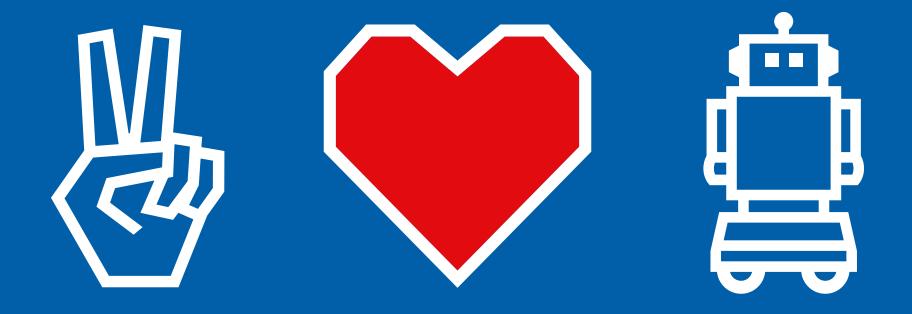






**HOUSTON MAYOR SYLVESTER** TURNER DECLARED APRIL 17. 2019. "FIRST CHAMPIONSHIP DAY" IN RECOGNITION OF THE IMPACT OF FIRST ON HOUSTON'S YOUTH AND FIRST CHAMPIONSHIP ON THE CITY.

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



# #KENDRICKCASTILLO



The *FIRST* community is heartbroken by the death of FIRST Robotics Competition Team 4418 "STEM Impulse" member Kendrick Castillo. who was killed after blocking a shooter at his Colorado high school, STEM School Highlands Ranch, on May 7, 2019.



# FIRST COMMUNITY HONORS ONE OF OUR **OWN: IN MEMORY OF KENDRICK CASTILLO**

The FIRST community is heartbroken by the death of FIRST Robotics Competition Team 4418 "STEM Impulse" member Kendrick Castillo, who was killed after blocking a shooter at his Colorado high school, STEM School Highlands Ranch, on May 7, 2019. Kendrick quickly emerged in global media as an incredibly brave and selfless hero – one who was passionate about robotics and mentoring others and had a bright future ahead of him.

In response to the outpouring of support and desire to help by the FIRST community, we launched the Team 4418 Victim Support and Memorial Fund. The fundraising campaign was in support of Team 4418 and Kendrick's parents, team volunteers John and Maria Castillo, as they grieve and memorialize Kendrick.

Donations poured in from the FIRST community, along with condolences expressing support and solidarity and heartfelt messages on social media. Over just a few weeks, the community raised more than \$100,000 from over 1.200 donors. Donations came from 43 states and seven countries and were given by 180+ FIRST teams, plus many more FIRST alumni, staff, mentors, volunteers, parents, and other supporters. The family and team plan to use the fund to help others.

At a celebration of life memorial service for Kendrick. local teams from FIRST Colorado lined up outside the church with their robots, creating a robot procession in his honor. Inside, team mentor Dakotah Mann spoke about Kendrick's legacy: "No matter how small his influence on each and every one of us, we have love in our hearts that he chopped, riveted, and welded together."

# SPONSORS AND CONTRIBUTORS

As we celebrate 30 years as a mission-driven nonprofit leading a global movement for preparing young people for the future, we know we couldn't have gotten here without the support of our sponsors, suppliers, donors, and other financial contributors. Their partnership, acknowledged on these pages, has helped us to inspire an entire generation of kids to pursue their dreams, big and small – and the best is yet to come.

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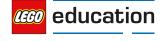






























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LOOK AT STEM IN A NEW WAY." - FIRST DONOR

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Hudson Valley FIRST LEGO League

NEW YORK - NEW YORK CITY Lisa Cai Norm Sutaria NYC FIRST

NEW YORK - POTSDAM Mary Margaret Small Clarkson University

NEW YORK - UTICA Janice Martino SUNY Polytechnic Institute

NORTH CAROLINA Kory Bennett, Ph. D. North Carolina A&T State University

NORTH DAKOTA Gwen Klawon University of North Dakota, School of Engineering & Mines

Brenda Ronnebaum Wright Patterson Air Force Base -**Educational Outreach** 

OKLAHOMA Scott Taylor Oklahoma Science and Engineering Foundation (OKSEF)

OREGON Loridee Wetzel Oregon Robotics Tournament and Outreach Program

Shawn Cerully Janel Vancas Appalachia Intermediate Unit 8

PENNSYLVANIA - CENTRAL

PENNSYLVANIA - EAST Kathleen Hauser Penn State Berks

PENNSYLVANIA - NORTHWEST Melanie Ford

**Edward Smith** Penn State Erie, The Behrend College PENNSYLVANIA - SOUTHEAST Nate Knauss Dan Ueda

University of Pennsylvania

PENNSYLVANIA - SOUTHWEST Gordon Walton BrainSTEM Learning, Inc.

PUERTO RICO Roberto Gorbea Miray Ramy Eureka Enrichment and Learning Center, Inc.

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SOUTH CAROLINA Louis Rubbo SC FIRST LEGO League and Robotics Education, Inc.

SOUTH DAKOTA Stacy Stahl Jeremy Haugen **FmRe** 

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TENNESSEE - EAST Kris Craven Paula Suchomski **Bradley Weil** Tennessee Technological University

TENNESSEE - WEST Tom Banning Daniel Kohn Frank Niedzwiedz University of Memphis and Herff

College of Engineering

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TEXAS - NORTH Kelly Goodner Perot Museum of Nature and Science

TEXAS -WEST Gabby Gandara Virgilio Gonzalez University of Texas at El Paso

Dana Dellinger Garth Tuck Weber State University

VERMONT David Feinauer, Ph. D. Norwich University

VIRGINIA/DISTRICT OF COLUMBIA Kaitlin Ilnitzki Nick Swayne

James Madison University

WASHINGTON FIRST Washington

WEST VIRGINIA Todd Ensign Fairmont State University

WISCONSIN Lisa Bartio Ben Senson

BadgerBOTS Robotics Corporation

WYOMING

Cyndee Guthmiller Natrona County School District

Fabiana Pedrini Plan Ceibal - LED/NGO/NPO

Vietnam Su Kim Ngan

Viet Tinh Ănh JSC

Wales Mandy Workman

David Lakin The Institution of Engineering and Technology

Yemen

Mohammed Saban King Hussein Foundation/Jubilee Center

for Excellence in Education

Johannes de Vries Tshwane University of Technology/ FIRST South Africa

FIRST TECH CHALLENGE 2018-2019 SEASON

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Mauricio Vasconcelos de Carvalho SESI - Social Service of the Industry -National Department

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BRITISH COLUMBIA Randy Enkin Society for the Advancement of Young Scientists

China

Eugene Zhang Semia Limited

Chinese Taipei

Johnson Jan **ESUN Robot Association** 

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Avman El Kabbani Ghazi A Mtaweh

TechnoFuture Egypt, Education & Technology Center Lebanon

**Europe DoD** 

Galen Tate

India

Vinay Kunwar Ashvin Savant India Robotics Society

Bosmat Shalom-Tuchin FIRST Israel

.lamaica

Christopher Williams Jamaica College Foundation

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Professor Kyoung-Mihn Do FEST (Feeling and Enjoying Science & Technology Organization)

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Bárbara Gómez de Navarro Explora, Descubre Y Crea, AC

The Netherlands

Ron Visser STEAMup

Romania

Dana Razboiu Natie Prin Educatie Association

South Africa

Johannes de Vries

Tshwane University of Technology

Richard Huguet

Fundacion Scientia

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ATLAB Trading LLC and American University of Sharjah

United Kingdom and Ireland

Ed Cervantes-Watson FIRST Tech Challenge UK

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ALASKA Brian Holst

Juneau Economic Development Council

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CALIFORNIA - SAN DIEGO

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COLORADO Matthew Collier Kathy Collier LAUNCH

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Tampa Bay Robotics Foundation, Inc.

Connie Havnes

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Tim Ewers University of Idaho Extension 4-H

Michael Seedman

ΙΝΠΙΛΝΛ Darrin Wilcoxson Crawfordsville High School

Rebecca Whitaker

University of Iowa LOUISIANA

Annette Oertling FIRST Louisiana-Mississippi

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MASSACHUSETTS Loretta Bessette MIT Lincoln Laboratory

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MINNESOTA Cheryl Moeller High Tech Kids

MISSISSIPPI John O'Haver University of Mississippi

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NEBRASKA **Bradley Barker** 

Nebraska 4-H Youth Development

Jean Hoppert FIRST Nevada **NEW HAMPSHIRE** 

Bruce Linton ingenuityNE **NEW JERSEY** 

Joel Bloom New Jersey Institute of Technology

**NEW YORK CITY** Michael Zigman NYC FIRST

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NEW YORK - EMPIRE Richard Kline Pace University

NEW YORK - LONG ISLAND Yacov Shamash School Business Partnerships

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North Carolina A&T State University NORTH DAKOTA Lee Gullingsrud

Bismarck Čareer Academy Linda Neenan

iSPACE, Inc. **OKLAHOMA** 

Randy Beutler Southwest Oklahoma State University

David Perry

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RHODE ISLAND Erin Flynn

New England Institute of Technology

SOUTH CAROLINA William Pedersen South Carolina Robotics Education Foundation

TENNESSEE Mike Wehrenberg TNFIRST, Inc.

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TEXAS - PASADENA/HOUSTON Sharon Sledge San Jacinto College

TEXAS - SAN ANTONIO Patrick Felty FIRST in Texas

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VIRGINIA Scott McKay Virginia FIRS

WASHINGTON FIRST Washington

**WEST VIRGINIA Donald Trisel** Fairmont State University

WISCONSIN Michael Krauski University of Wisconsin Milwaukee

Bryan Honken Natrona County School District

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**CEESA School District** 

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China Flora Li Janice Wang Ice Yam Kody Ho

Chinese Taipei Rene Chena

Israel Ran Sabag Republic of Korea

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Montse Bover i Jimenez **United Arab Emirates** Khushboo Samkaria Abdallah El Marhoune

**United Kingdom and Ireland** 

Muktar Ali

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IDAHO

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WASHINGTON FIRST Washington

WISCONSIN

Julianne Pickering University of Wisconsin Milwaukee

WEST VIRGINIA Todd Ensign West Virginia Robotics Alliance

Cyndee Guthmiller Natrona County School District

# FIRST ROBOTICS COMPETITION 2019 SEASON

Australia

Macquarie University

Canada

ONTARIO FIRST Robotics Canada

ALBERTA

FIRST Robotics Society (FRS)

Israel FIRST Israel

México

Instituto Tecnológico y de Estudios Superiores de Monterrey

Turkey

Fikret Yüksel Foundation

**United States** 

ARIZONA AZFirst

ALABAMA

FIRST in Alabama

COLORADO FIRST Colorado

FINRINA

Florida *FIRST* Robotics Education Foundation, Inc. (FFREF)

GEORGIA

Georgia FIRST Robotics, Inc.

IDAHO

Idaho Regional Robotics Inc.

ILLINOIS

FIRST Illinois Robotics

INDIANA Indiana*FIRST* 

LOUISIANA

FIRST Louisiana-Mississippi

MICHIGAN

FIRST in Michigan

MID-ATLANTIC REGION FIRST Mid-Atlantic

MISSOURI – GREATER KANSAS CITY KC STEM Alliance

MISSOURI – ST. LOUIS Saint Louis Science Center NEVADA FIRST Nevada

NEW ENGLAND NE *FIRST* 

NEW YORK CITY NYC *FIRST* 

NEW YORK – LONG ISLAND FIRST Long Island

NORTH CAROLINA
FIRST North Carolina

OREGON

Oregon Robotics Tournament & Outreach Program (ORTOP)

SOUTH CAROLINA

Palmetto Partners for Science and Technology

TEXAS FIRST in Texas

UTAH FIRST Utah

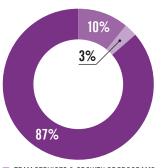
VIRGINIA, MARYLAND, WASHINGTON DC FIRST Chesapeake

WASHINGTON FIRST Washington



# **FINANCIALS**

Our programs' participation growth and mission successes continued once again in fiscal year 2019. We continue to have relatively balanced growth in both operating revenues and expenses, including additional investments in our Youth Protection Program, Information Technology, Program



■ TEAM SERVICES & GROWTH OF PROGRAMS
■ GENERAL & ADMINISTRATIVE EXPENSES

FUNDRAISING COSTS

Evaluations, Equity, Diversity, and Inclusion Program, and Education Initiative. Contributions remained strong, as many individuals, small businesses, corporations – including over 200 of the *Fortune* 500 companies – and foundations maintained or increased their support, while many new sponsors joined *FIRST*. This contributed support provided very meaningful experiences to more than a half-million youth engaged worldwide in the *FIRST* Progression of Programs.

As noted in the chart above, and in keeping with longtime practices, *FIRST* continues to apply the maximum percentage of funds possible to directly benefit *FIRST* participants. Included within the modest general and administrative expenses are several significant investments in infrastructure enhancements, including those noted above.



FIRST achieved its 14th consecutive four-star rating from Charity Navigator, certifying our continued commitment

to accountability, transparency, and sound fiscal management. This consecutive rating places *FIRST* in the top 1% of the U.S. charities annually evaluated by Charity Navigator.

STATEMENTS OF ACTIVITIES	JUNE 30, 2019	JUNE 30, 2018
Revenues and other support:		
Program registration fees	\$32,718,347	\$31,029,505
Contributions and grants	18,469,938	15,680,501
Other income	2,154,040	1,779,661
Special event income, net of expenses of \$396,560 in 2019 and \$404,980 in 2018	496,506	559,006
Net assets released from restrictions	30,951,062	27,968,209
Total revenues (losses) and other support	\$ 84,789,893	\$ 77,016,882
Expenses:		
FIRST Program Expenses	71,557,755	63,997,525
Net cost of building space occupied by unrelated not-for-profit organizations	295,730	320,596
General, administrative, and supporting services	8,990,597	7,987,326
Funding and Development	2,387,833	2,312,412
Total expenses	\$ 83,231,915	\$ 74,617,859
Operating surplus	<u>1,557,978</u>	<u>2,399,023</u>

STATEMENTS OF FINANCIAL POSITION	JUNE 30, 2019	JUNE 30, 2018
Assets:		
Cash and cash equivalents*	27,748,958	24,324,389
Short-term investments*	12,000,000	9,740,000
Pledges, receivables, program supply inventory, and other assets	15,498,863	14,215,014
Net property, plant, and equipment	5,176,264	5,179,524
Total assets, end of year	\$ 60,424,085	\$ 53,458,927
Liabilities and net assets:		
Total liabilities, end of year	\$ 7,653,948	\$ 5,764,527
Net assets:		
Unrestricted	29,391,900	27,833,922
Temporarily restricted	23,378,237	19,860,478
Total net assets, end of year	\$ 52,770,137	\$ 47,694,400
Total liabilities and net assets, end of year	\$ 60,424,085	\$ 53,458,927

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 total liquid assets balance available to *FIRST*, for operating purposes, at June 30, 2019, 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 <a href="www.firstinspires.org">www.firstinspires.org</a> under "About/Annual Report & Financials." Certain amounts reported for 2018 have been restated. For details, please refer to the accompanying notes which are an integral part of the AFS, at the above web address.

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ingenuityNE

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**FIRST** 

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Chris Rake

Vice President, Programs

Listing current as of November 1, 2019

# FIRST® IS A ROBOTICS COMMUNITY PREPARING YOUNG PEOPLE FOR THE FUTURE.

# VISION

"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

# MISSION

To inspire young people to be science and technology leaders and innovators, by engaging them in exciting mentor-based programs that build science, engineering, and technology skills, that inspire innovation, and that foster well-rounded life capabilities including self-confidence, communication, and leadership.

# IMPACT

For three decades, *FIRST* participants have developed self-confidence in STEM, meaningful friendships, and valuable, real-world skills that open pathways and help young people build a better future. *FIRST* programs are proven to encourage students to pursue education and careers in STEM-related fields, but they also inspire kids to become leaders and innovators in any industry.

