

ANNUAL REPORT 2018-2019

Robotics Education & Competition Foundation
Inspiring students, one robot at a time.



CONTENT

04

Welcome Message

The REC Foundation believes that robotics and STEM are for everyone, and strives toward an inclusive robotics community that is reflective of the diverse world we live in, and the one we want to leave behind.

06

Impact of Participation in Robotics

Direct feedback from educators, and students express interest in pursuing STEM careers after participating in Competitions.

08

Our Programs

Events, Competition and programs available at the REC Foundation

10

Girl Powered Program

Providing tools for success, and enabling comfortable environments where all students' confidence and abilities can flourish

12

Financial Highlights

Multi-year comparison of operating and business metrics of the REC Foundation

14

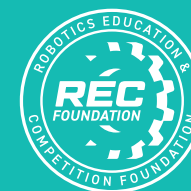
Board of Directors

Keeping a sustainable future by adopting sound, ethical, and legal governance, financial management policies and mission

15

Sponsors and Volunteers

With the help of our sponsors and volunteers we can continue to fulfill our mission of supporting teachers/students in the future of STEM education and robotics



MESSAGE

From The CEO

On behalf of the Robotics Education & Competition (REC) Foundation, I am grateful to our growing community and for your encouragement and support of our work to engage students in hands-on, affordable, and sustainable robotics engineering programs. During the 2018-19 season, 24,000 competitive robotics teams from 60 countries participated in 2,300 events where they gained valuable STEM skills, communication skills, and developed lasting mentorships and friendships to enhance their futures. As a result of our collective effort, 94 percent of teams report their intent to return to competitive robotics next season.



THE MESSAGE

The REC Foundation believes that robotics and STEM are for everyone, and strives toward an inclusive robotics community that is reflective of the diverse world we live in, and the one we want to leave behind. Our dynamic Girl Powered initiative includes team grants, workshops, Online Challenges, and support materials. Female participation in our programs continues to rise from 23% in 2016 to nearly 40% in 2018. In March 2019, we hosted the first-ever student robotics tournament in the Southeast region of the U.S. with robotics teams composed of all Deaf and Hearing Impaired students in partnership with the NTID Regional STEM Center (NRSC) at the North Carolina School for the Deaf. We look forward to increased engagement in our programs in additional areas of focus to provide equitable access to our programs for everyone.

With plans in the near future to launch an aerial drones competition, a manufacturing program and competition, and even more exciting programs and competitions made available through our partnerships and sponsors, I am excited for the year ahead.

As we celebrate our achievements, we strive to increase transparency and engage our supporters in our work. I invite you to review the REC Foundation Annual Report for the 2018-19 fiscal year. I am truly thankful for each of our teams, coaches, Event Partners, volunteers, staff, partners and sponsors for their continued commitment to advancing students in robotics and STEM.


DAN MANTZ
CEO & Chairman of the Board

A handwritten signature in black ink, appearing to read 'Dan Mantz'.

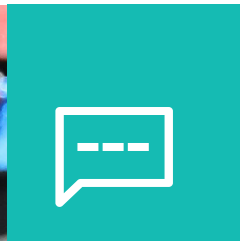
The REC Foundation believes that robotics and STEM are for everyone, and strives toward an inclusive robotics community that is reflective of the diverse world we live in, and the one we want to leave behind.

ANNUAL REPORT 2018 / 2019

Engaging in competitive robotics not only invites students to explore the fundamentals of STEM, but encourages important life skills like teamwork, communication, and collaboration. Even more compelling is the direct feedback from educators, who report that 9 out of 10 students express interest in pursuing STEM careers after participating in the VEX Robotics Competition.




A higher percentage of girls (96.2%) than boys (91.8%) said VRC participation made them want to learn more about robotics, and a higher percentage of girls (78.5%) than boys (74.9%) said VRC made them more interested in taking additional math or science classes in high school and college.



WHAT DOES THE S&E JOB MARKET LOOK LIKE FOR U.S. GRADUATES?


The U.S. Bureau of Labor Statistics projects that, during the period 2010–2020, employment in science and engineering occupations will grow by 18.7%, compared to 14.3% for all occupations. This is promising news and an even more compelling call to action to redouble our efforts to provide students with hands-on, fun, and challenging robotics engineering opportunities.

Source: www.nsf.gov/nsb/sei/edTool/data/workforce-03.html

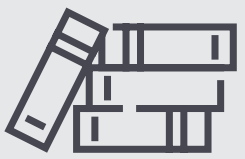
75%

Students reported they were interested in taking additional Math or science classes in high school or college




87%

Students reported they were more interested in having a job in a STEM or computer field



Students said they wanted to learn more about robotics (92%), engineering (90%), and computer programming (89%) because of participation in VEX Robotics Competition.

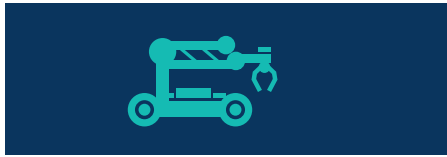


83%

Students were interested in taking engineering courses in college.

Sources: www.asee.org/public/conferences/8/papers/2994/download
www.jite.org/documents/Vol18/JITEv18ResearchP097-112Sullivan5121.pdf
www.roboticseducation.org/documents/2019/08/study-vex-robotics-competition-evaluation.pdf/

OUR PROGRAMS
ONE EVENT - THREE COMPETITIONS



GAME
CHALLENGE
MATCHES

Multiple robots compete with other robots to score as many points as possible.



DRIVING
SKILLS
CHALLENGE

One robot take the field to score as many points as possible entirely through human interaction.



PROGRAMMING
SKILLS
CHALLENGE

One robot take the field to score as many points as possible during an autonomous round with limited human interaction.



OUR PROGRAMS
COMPETITION OPTIONS

Aerial Drones Competition	Online Challenges	VEX IQ Challenge	VEX Robotics Competition	VEX U
Middle & High School	Elementary School through University	Elementary & Middle School	Middle & High School	University
In-person and virtual competition-based experiences	Students are the World participate in engineering competitions online	Computer programming included	Computer programming included	Gain desired industry skills, i.e. programming, CAD, and technical writing
After school or weekend events	Offered in variety of STEM subjects	Teamwork matches	Driver controlled & autonomous	Longer autonomous period
Hands-on STEM education	Students can win a chance to compete at the World Championship	Robot skills challenges	Robot skills challenges	Online challenges
Safely operate a drone		Snap-together assembly	Local, State, Regional, National and World Competitions	Fabrication of unique parts by machining or 3D printing
Work as a team		STEM research project		
Research workforce application of aerial robotics technology		Local, State, Regional, National and World Competitions		

“TESLA wants students to experience competitive robotics because so often we hear specifically from employees that competitive robotics was that inflection point that made me want to go into engineering. It is critical that students start robotics at a young age, and more importantly, that the community engages each student before stereotypes take hold.”
- Chris Reilly WorkForce Dev. & Education Lead, TESLA

GIRL POWERED
REDEFINING THE FACE OF STEM



The Robotics Education and Competition (REC) Foundation and VEX Robotics are working to make robotics reflective of the diverse world we live in, and the one we want to leave behind.

We're committed to showing how exciting it is to be involved with STEM, showcasing examples of how women are changing the world, providing tools for success, and enabling comfortable environments where all students' confidence and abilities can flourish.



Girl Powered means supporting all your teammates, classmates, friends and family to try new things and reach outside their comfort zone. Being Girl Powered means finding people who you don't see in robotics, getting them to try it, and making them feel like they belong. It is about encouraging others, both girls, and boys, to actively embrace a more diverse culture. We want to encourage new experiences, a diverse culture, and a more encompassing definition of what a roboticist looks like.

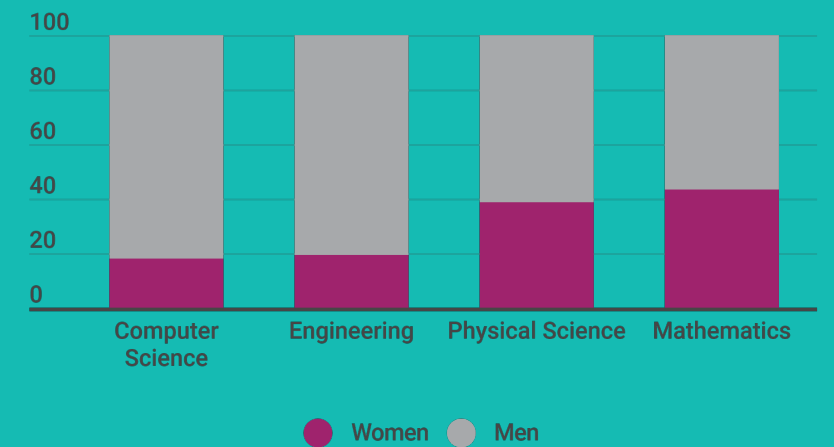
Together, let's redefine the face of STEM.



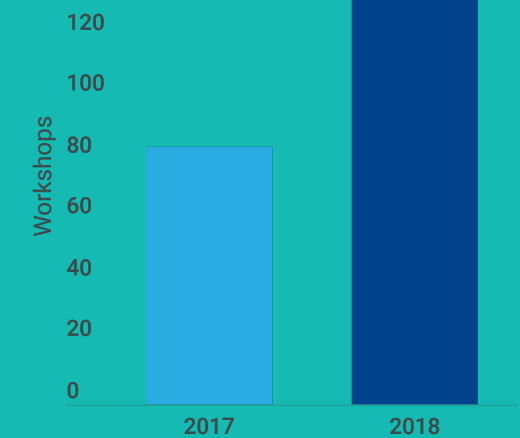
Prior work suggests that children who are exposed to STEM curriculum at an early age demonstrate fewer gender-based stereotypes regarding STEM careers and fewer obstacles entering these fields down the road.

(Literature Review: The Gender Gap in STEM Fields, DevTech Research Group, Tufts University, December 2017)

While women receive over half of the degrees in the biological sciences, they receive far fewer in computer science, engineering, physical science and mathematics.



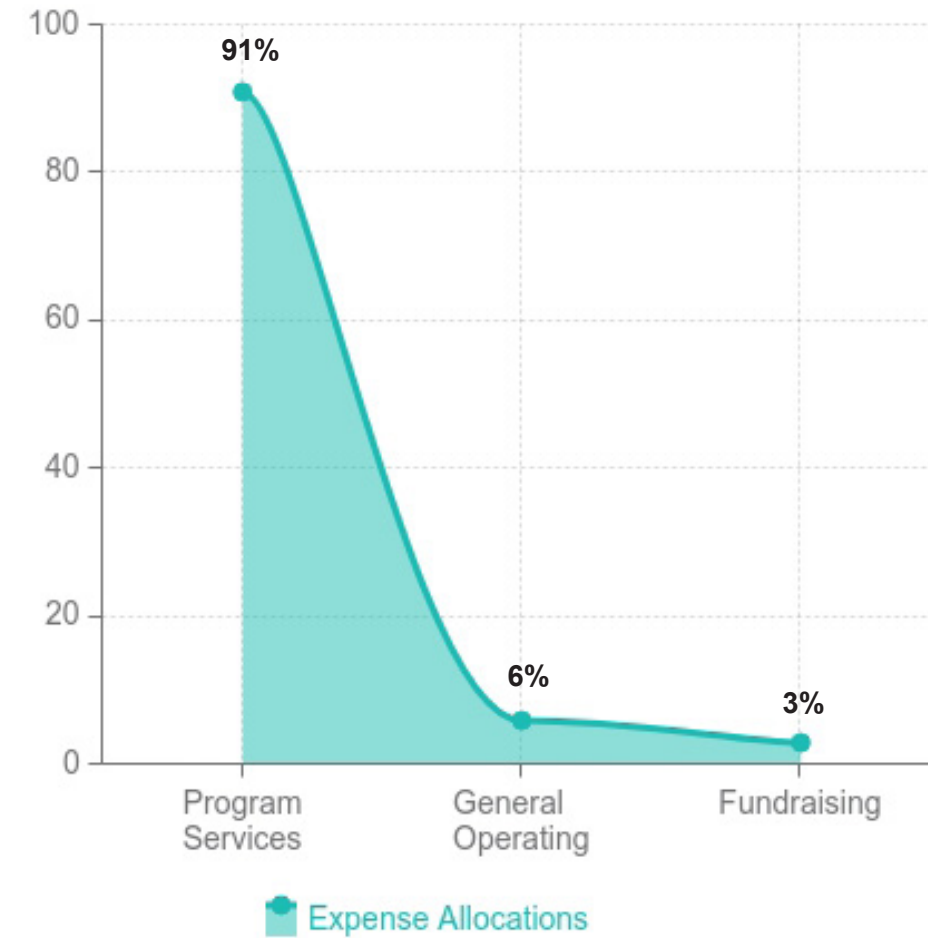
(Why So Few? Women in Science, Technology, Engineering, and Math AAUW, February 2010)



FINANCIAL HIGHLIGHTS

Revenue and Support:	Total	Program Services	General Operating Expenses	Fundraising
Contributions and Grants	\$8,639,832.00	\$8,639,832.00		
Event Income	\$4,935,500.00	\$4,935,500.00		
Total Revenue and Support		\$13,575,332.00		

Expenses:	Total	Program Services	General Operating Expenses	Fundraising
Compensation and Benefits	\$3,524,095.00	\$2,694,945.00	\$587,650.00	\$241,500.00
Advertising and Promotion	\$285,339.00	\$171,204.00	\$ -	\$114,135.00
Office Expense	\$454,033.00	\$404,089.00	\$49,944.00	
Occupancy	\$108,501.00	\$96,566.00	\$11,935.00	
Travel	\$1,117,066.00	\$1,061,204.00	\$33,512.00	\$22,350.00
Depreciaton	\$6,321.00	\$6,321.00		
Insurance	\$6,655.00	\$5,923.00	\$732.00	
Event Expenses	\$6,939,584.00	\$6,939,584.00		
Other Expenses	\$77,771.00	\$77,771.00		
Total Expenses	\$12,519,365.00	\$11,457,607.00	\$683,773.00	\$377,985.00



The REC Foundation's suite of VEX Competition programs engage students in elementary school through college with:



Over 60 countries



24,000 teams



240,000 students reached

MEET OUR BOARD OF DIRECTORS



DAN MANTZ
CEO
Chairman of the Board
REC Foundation

Dan acts as a direct liaison between the REC Foundation and the Board. Prior to joining the REC Foundation, he has spent 19 years in the industrial robotics industry.

RONALD ARSCHEENE
Utica Community School Center
for Math, Science and Technology

Ron has been a long-time educator, coach, and supporter of robotics competitions. He brings an important background in education and school administration.

TONY NORMAN
Co-Founder, President and
Chief Executive Officer
Innovation First International (IFI)

Tony has a background in electrical engineering, an insatiable entrepreneurial spirit, and a passion for innovating the design, manufacturing, production, and distribution process.

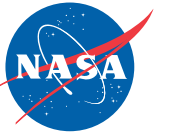
PAUL D. COPIOLI
President
littleBits

Paul has more than 20 years of engineering management experience, bringing a strong background in educational and competitive robotics products to the company.

OUR SPONSORS

The Robotics Education & Competition Foundation is grateful for the generous support of our sponsors who partner year-round to provide team grants, and support local tournaments, state championships, and the VEX Robotics World Championship. We value their commitment to advancing student interest and engagement in STEM.

NORTHROP GRUMMAN
Foundation

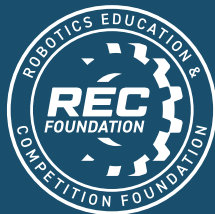


Palmetto Partners



Kentucky's Touchstone Energy Cooperatives 

POWERED BY  EAST KENTUCKY POWER COOPERATIVE



Robotics Education & Competition Foundation

1519 Interstate 30 West
Greenville, Texas 75402
Phone: +903 401 8088

support@robotevents.com
www.roboticseducation.org
www.robotevents.com

