



# Research shows *FIRST*<sup>®</sup> drives STEM engagement and outcomes

*FIRST*<sup>®</sup> is a mission-driven global robotics community that prepares young people for the future and inspires today's kids to build tomorrow's leaders.

Children can join any of our three programs based on age or grade level. Ages may vary by region.



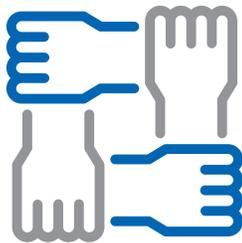
Research from a multi-year longitudinal study shows *FIRST* is advancing its mission to increase the number of students interested in STEM – and that interest is influencing their educational and career choices.

## *FIRST* students are prepared for greater success in the classroom and workforce.

At *FIRST*, we understand that interest, rather than academic proficiency, is a greater predictor of children pursuing studies and careers in STEM fields. Our evidence-based programs use strategies known to increase student interest and engagement in science, technology, engineering, and math (STEM), including:



HANDS-ON LEARNING



WORKING AS A TEAM ON REAL-LIFE PROBLEMS



EXPOSURE TO CAREERS AND ADULT MENTORS



EMPHASIS ON *FIRST* CORE VALUES



CULMINATING CELEBRATION WHERE STUDENTS CAN SHOWCASE WHAT THEY CREATED AND LEARNED

### OUR PARTNERSHIP WITH BRANDEIS UNIVERSITY

*FIRST* is partnering with Brandeis University to conduct a multi-year longitudinal study measuring STEM-related impacts.

The study included 822 *FIRST* students and 451 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, 74% OF STUDENTS REMAINED IN THE STUDY AT YEAR NINE.



# Research Highlights

## FIRST prepares students for a STEM future



### Gains in Workforce Skills

FIRST participants show significant gains in workforce skills such as teamwork, communication, and problem-solving.

**“FIRST has given me life skills and tools to work well with others and be a team player and always do my personal best with *Gracious Professionalism*®. These are skills I will use in my daily life and beyond!”**

### FIRST Alumni

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



#### DECLARE A MAJOR IN STEM (SCIENCE, TECHNOLOGY, ENGINEERING, AND MATH)

FIRST ALUMNI

81%

COMPARISON GROUP

64%

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

FIRST ALUMNI

59%

COMPARISON GROUP

24%

### 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 young women in the comparison group.

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

FEMALE FIRST ALUMNI

48%

FEMALE COMPARISON GROUP

16%

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

3.5x

Computer Science

2.5x

Engineering



"x" = times as likely

### Benefits of FIRST

FIRST students are two times more likely to show an increase in STEM-related attitudes and interests than comparison group students. Positive impacts are evident for all FIRST students regardless of race, gender, income, or community type.



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

2x

STEM Interest  
STEM Career Interest  
STEM Knowledge

STEM Activity  
STEM Identity

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

All differences statistically significant,  $p < .05$  Sources: FIRST Longitudinal Study: 2022 Survey Results (108-Month Follow-Up). Brandeis University. February, 2023.

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