



# Research proves *FIRST*® has a lasting impact on girls and young women

Women are critical to the advancement of STEM (Science, Technology, Engineering, and Math) – but a significant gender gap remains within STEM careers. At *FIRST*®, we are actively developing ways to address barriers to access and participation, 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.

Girls in *FIRST* see amazing impacts. All *FIRST* participants are significantly more likely to have stronger STEM outcomes compared to their classmates, as evidenced by the *FIRST* Longitudinal Study. However, girls in *FIRST* report the largest differences in STEM outcomes over time when compared to their female peers, and higher than boys.



## STEM Outcomes

Female *FIRST* participants are 2.2 times more likely to have significantly stronger STEM interest than comparison group peers, and:



**MORE LIKELY TO HAVE SIGNIFICANTLY STRONGER OUTCOMES IN STEM ATTITUDES, KNOWLEDGE, AND INTERESTS COMPARED TO THEIR PEERS**

**3.2x**

STEM Activity

**2.2x**

STEM Interest

**2.1x**

STEM Knowledge

**1.9x**

STEM Careers

**1.4x**

STEM Identity

"x" = times as likely

## STEM Pathways

Female *FIRST* alumni are more likely to pursue STEM pathways through 4 years of college compared to their peers in the comparison group:



**MORE LIKELY TO TAKE ENGINEERING AND COMPUTER SCIENCE COURSES**

**2.6x**

Engineering

**3.4x**

Computer Science

**MORE LIKELY TO HAVE DECLARED A MAJOR IN ENGINEERING AND COMPUTER SCIENCE**

**2.5x**

Engineering

**3.7x**

Computer Science

**% OF FEMALE *FIRST* ALUMNI WHO DECLARE A STEM MAJOR COMPARED TO THEIR PEERS**

FEMALE *FIRST* ALUMNI

**69%**

FEMALE COMPARISON GROUP

**49%**

**MORE LIKELY TO DECLARE A MAJOR IN ENGINEERING OR COMPUTER SCIENCE THAN THEIR PEERS**

FEMALE *FIRST* ALUMNI

**51%**

FEMALE COMPARISON GROUP

**16%**

# Additional Highlights

## Gains in Workforce Skills

"FIRST has made such a large impact on my life that I don't know where or who I would be without it. I have been involved with FIRST for seven years, and the experiences that I have had have given me public speaking skills, confidence in my abilities, and life-long friendships. FIRST also has given me the opportunity to inspire others in STEAM fields."

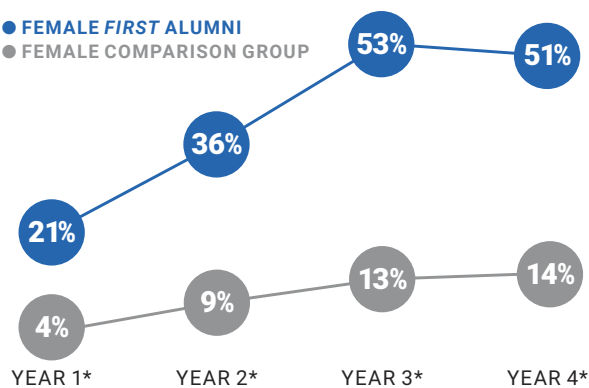


## Declare STEM Majors

More female FIRST alumni declare majors in Engineering and Computer Science compared to young women in the comparison group.

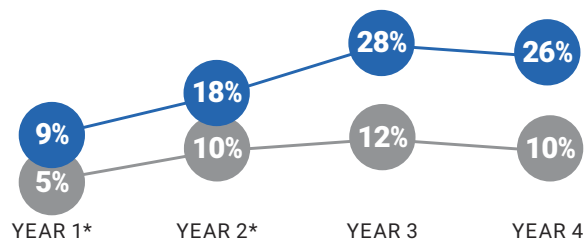
### % OF ENGINEERING MAJORS

● FEMALE FIRST ALUMNI  
● FEMALE COMPARISON GROUP



### % OF COMPUTER SCIENCE MAJORS

● FEMALE FIRST ALUMNI  
● FEMALE COMPARISON GROUP

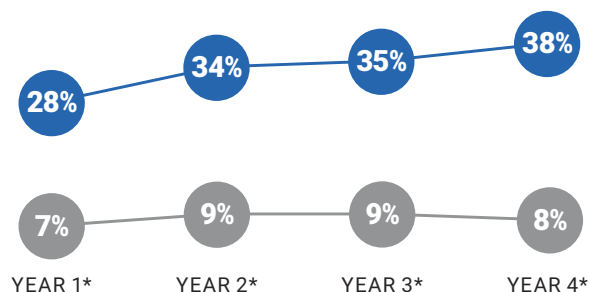


## Take STEM Coursework

Female FIRST alumni are more likely to take coursework in Engineering or Computer Science each of the 4 years of college compared to their peers.

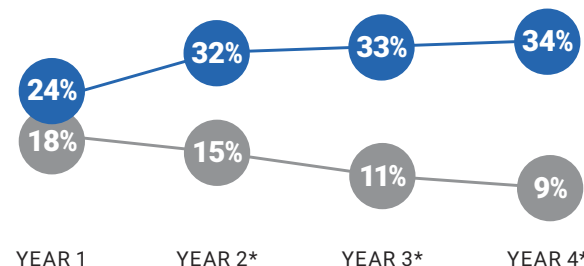
### % OF ENGINEERING COURSEWORK

● FEMALE FIRST ALUMNI  
● FEMALE COMPARISON GROUP



### % OF COMPUTER SCIENCE COURSEWORK

● FEMALE FIRST ALUMNI  
● FEMALE COMPARISON GROUP



### FIRST LONGITUDINAL STUDY BACKGROUND

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. There were 422 women in the study at year seven (194 FIRST participants and 228 comparison group).

OVERALL, 79% OF STUDENTS REMAINED IN THE STUDY AT YEAR SEVEN.

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

FIRST Longitudinal Study: Findings at 84-Month Follow-Up, Brandeis University, March, 2021.

\*Differences statistically significant,  $p \leq .05$

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