

Assessing & Improving Girls' and Womens' Math Identity



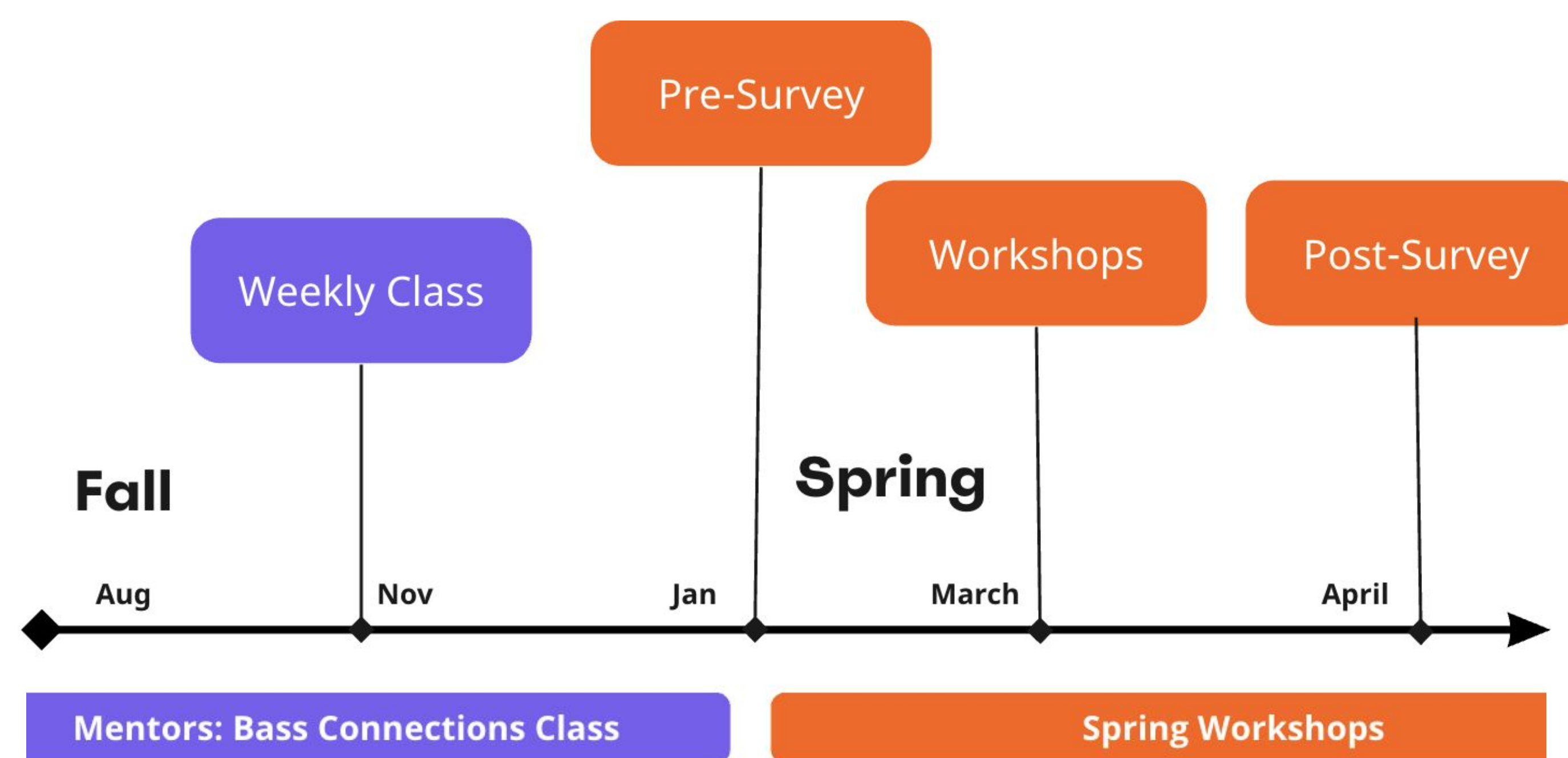
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Introduction to GEM

GEM (Girls Exploring Math) is a free weekend and summer workshop program for female and nonbinary middle schoolers that incorporates problem solving skills through math activities, spatial reasoning, female mentors in various STEM pathways, and gender discussions. In 2024, 14 Durham Middle Schools were represented. Mentors prepared for the spring workshops by studying and discussing factors known to influence students' participation in STEM.

Timeline



Mentor Quotes

“I love being able to learn what captures their attention and gets them really engaged in learning in the classroom.” - **Anonymous**

“Each girl has such a unique personality and it's so rewarding to see their faces light up when they get a problem right or as they become more comfortable in the larger group.” - **Grady**

“This program has given me a lot of the same confidence we try to instill into the girls we work with, it goes both ways” - **Malika**

Spring Workshops



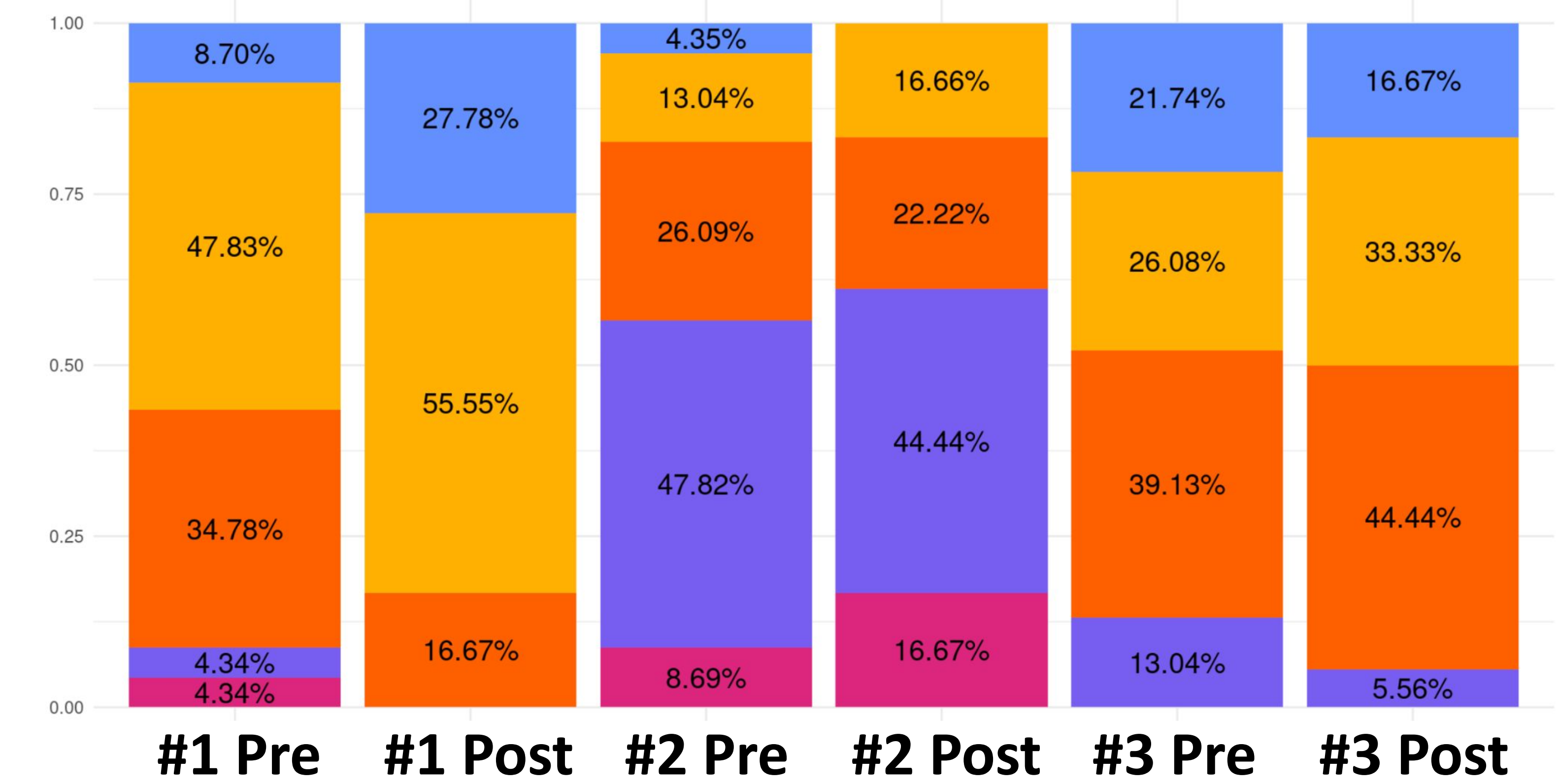
GEMS participating in STEM related math and gender activities planned and led by Duke undergraduate students.

Future Directions

- Place greater emphasis on the undergrad community within the course – **collect empirical data** about the undergrads' experience in STEM
- Focus on **supporting undergrads** as they navigate their STEM major and career
- **Discuss strategies** women and other marginalized identities in STEM can use to respond to obstacles they may face in STEM
- Address the gender gap in STEM online by **contributing to Wikipedia with biographies of notable women in STEM**

Survey Analysis

GEM Responses: Why are fewer women in STEM than men?

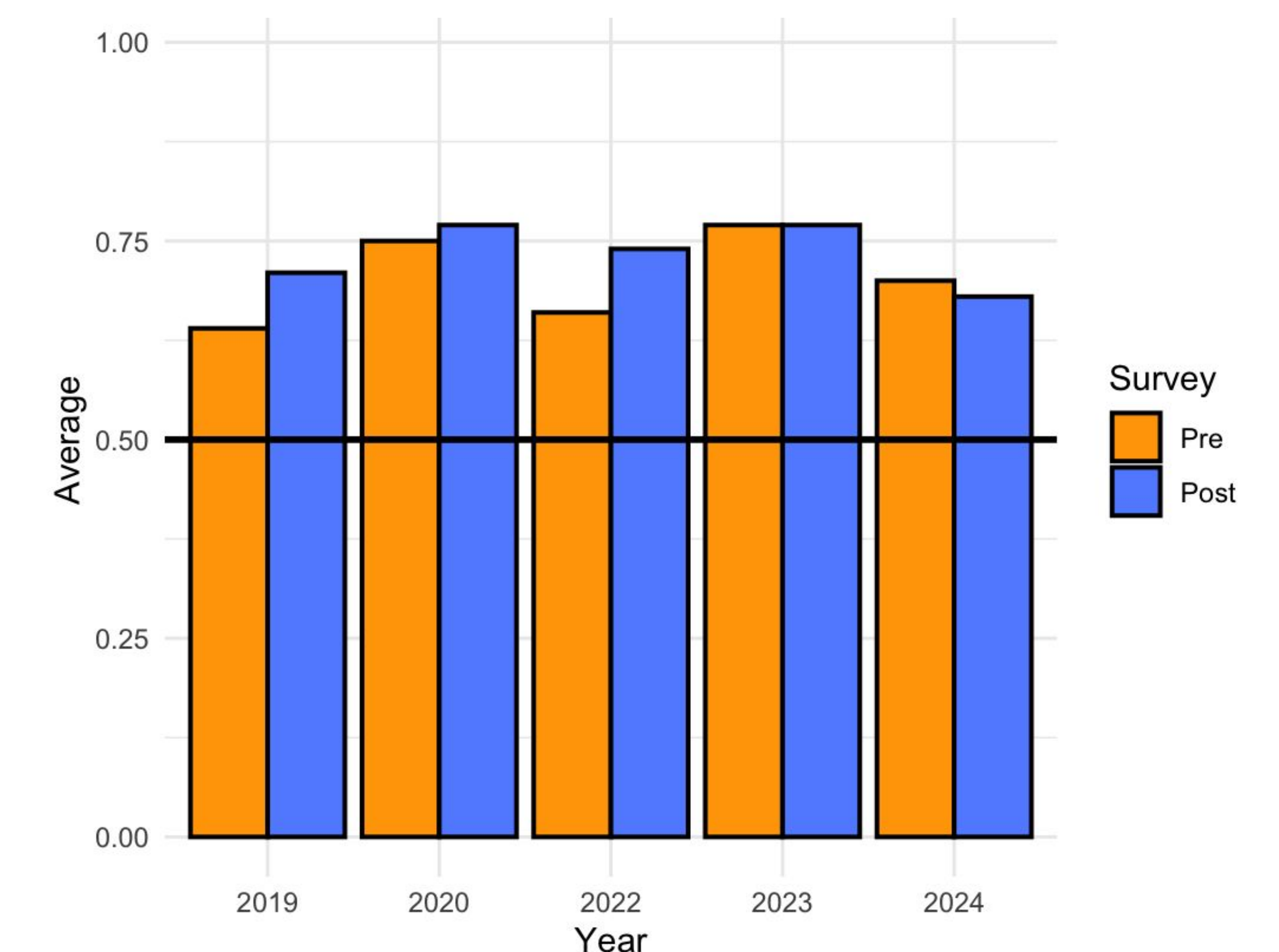


Statement #1: Women don't have as many role models in STEM as men do who can inspire them and help them get these jobs

Statement #2: Men are more confident in their math and science abilities than women are

Statement #3: When they're young, women aren't encouraged by their teachers and parents to go into STEM as much as men are

In what percentile would you rank yourself in math?



Acknowledgements:

¹Mathematics (Duke), ²Mechanical Engineering and Materials Science (Duke), ³Sociology (UNC)