How can we encourage girls to consider STEM as viable career paths? We research middle school students.

**Theories & Data Behind Our Research**

- **Women have lower STEM identity fit**
  - What affects identity fit?
  - **The SAFE Model**
    - Extent to which self concepts align with perceptions of the environment; includes values, self-concept, & social fit.
    - Concepts that are fluent feel more true, desirable, achievable.
    - Variable socio-emotional experience (vs. stable trait authenticity).
  - Career trajectory: engagement to exit
  - All of these affect a person’s career engagement to exit.

- **Women’s fit in STEM is underestimated by women & men**
  - In STEM fields, women have:
    - lower participation
    - women earn 35% of STEM degrees
    - lower completion
    - 60% of female vs. 80% of male engineering students graduate
    - lower compensation
    - a 7% gender wage gap persists, even with demographic controls
  - Our core objective is to design interventions that directly increase girls’ identity fit & interest in STEM, & improve the climate by reducing boys’ stereotyping.

- **Stereotyping in STEM climate**
  - Children as young as 6 associate math = boy implicitly & explicitly.
  - Connections to female STEM colleagues are seen as low value.
  - Girls may fear being doubly isolated by boys in STEM & girls outside of STEM.

- **Stereotypes**
  - Women’s fit in STEM is underestimated by women & men.
  - Baseline: boys’ interest & current/future fit in STEM > than girls.
  - Baseline: boys stereotype girls as having lower STEM abilities.
  - Result: improved girls’ identity fit & interest in STEM.
  - Result: boosted boys’ belief in girls’ STEM competence.
  - Next steps: distributing intervention for boys to more settings; reiterating & refining girls’ intervention.

**Our Interventions & Results**

We studied several middle school science camps (1200+ participants) over 3 summers.

**For Girls**

- Female STEM role model shared stories of:
  - Communal values: I have friends in class & in Arts.
  - Self-expression in STEM: I work hard to make my family proud.
  - Inclusion by STEM boys & non-STEM girls: Value affirmation (stalls potential backlash or defensiveness).

**For Boys**

- Near peer male STEM role model shared stories of:
  - Self-expression in STEM: I work hard to make my family proud.
  - Persuasive message & anecdote from a persuasive source: Stereotypes can make it hard to see others’ true abilities.

Next steps: distributing intervention for boys to more settings; reiterating & refining girls’ intervention.
Reducing Boys’ Gender Bias & Improving Girls’ Anticipated Fit in STEM

References

1. Cyr, E. et al. (in prep). Debiasing boys: Value affirmation and latent ability.

About Project PRISM

How can we make STEM a more attractive and meaningful option for adolescent girls and boys alike? Project PRISM (Promoting Rising Inclusion and STEM Motivation) investigates best practices for boosting girls’ belonging in STEM, while bolstering boys’ respect for girls’ abilities. To combat obstacles girls may face in pursuing a STEM career, Project PRISM tests interventions that: (1) change boys’ beliefs about girls via implicit bias training and presenting real evidence that test scores underestimate girls’ abilities, (2) expose girls to successful role models who share their values and preferences, and (3) encourage girls to identify with STEM by recognizing that a STEM career can help them accomplish some of their most cherished goals.

About Engendering Success in STEM (ESS)

Engendering Success in STEM (ESS) is a research partnership focused on evidence-based solutions to foster positive working environments for people in STEM (Science, Technology, Engineering, and Math). We bring together social scientists, STEM experts, and stakeholders in STEM industry and education to use an evidence-based approach to break down barriers people face on their pathway to success. Canada’s Social Sciences and Humanities Research Council reviewed and funded this project.