Gender Inclusion & Fit
in STEM

Why do gender disparities persist[2-4] in STEM despite women's* increased involvement & interest?

*Gender identities go beyond the binary that most research protrays; women with marginalized identities also face barriers that are similar but distinct

Root causes of STEM attrition

Many women might **self-select out** of STEM because the environment does not fit[1]

Expressing one's true self (**state authenticity**[14]) is a key motivator to **attract, engage & retain** people in a field, as people tend to prioritize careers that are a good fit[5]

Gender stereotypes can erode women's ability to feel a sense fit & belonging in a setting
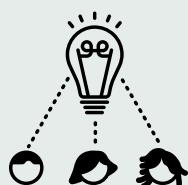
Stereotypes influence:
- **People's perceptions** (self & others)
- **Preferences** (activities & values)
- **Pursuits** (of different careers)

Alone these can be seen as women's **individual choices**, but aggregated **systemic issues arise**

SAFE Model & Person-Environment Fit[1]

State **A**uthenticity is a signal of one's **F**it to the **E**nvironment

Women's & girls' interest & advancement in STEM is often a function of **their ability to feel a sense of fit in STEM environment**

Culturally prevalent gender stereotypes

Environmental characteristics
Do cues in the environment signal...

Self-concept fit?
Masculine defaults[8] vs. gender neutral

Goal fit?
Encouraging dominance vs. collaboration

Social fit?
Cross-gender identity threat vs. respect/acceptance

STEM pursuit & engagement
Do I choose, persist, & thrive in STEM?

Person characteristics
Do I have the ability, self-confidence & interest?

State authenticity (am I able to express myself?)

This model can explain why people opt out of some settings to self-segregate into others, even without sign of clear bias or discrimination

How environments signal fit in STEM

Self-concept fit
Can I express & be my authentic self here?

De-emphasize the focus on **brilliance**[5,6] in STEM fields, & decrease the presence of masculine default[8] in policies[9], interactions, & communication to combat gender stereotypes[7-8]

Goal fit
Does this fit my career goals? My values?[10]

Frame work in terms of collaboration, instead of working on things & projects[5]

Check institutional policies on how work is structured & rewarded; these may appeal more to men than women

Social fit
What does it feel like to work here?

Encourage interactions that are supportive & inclusive of women & people with marginalized identities[11-12]

Demonstrate discussions where all are heard equally & not interrupted[13]

Overall, **STEM environments can be a bad fit for women**; women are not a bad fit for STEM environments. Dismantling systemic barriers needs a **multifaceted, intersectional approach** to **change organizational & educational cultures**.

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ENGENDERING SUCCESS IN STEM

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About Project RISE

How can we educate adults about implicit bias in a way that fosters mutual respect and creates a more inclusive culture in the workplace? Project RISE (Realizing Identity-Safe Environments) will harness our understanding of implicit bias, intergroup contact, and social identity threat to create a more "identity safe" workplace culture. Interventions designed to create identity-safe contexts have been shown to narrow the gender gap in academic performance. Project RISE aims to create positive cultural change for women and men in science and engineering by: (1) educating participants about implicit bias, (2) fostering supportive and respectful interactions between men and women in the organization, and (3) providing them with a clear understanding for how to combat bias. Learn more at: successinstem.ca/projects/rise

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.

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