Who do we expect to do the work? Experimental evidence regarding gendered task allocation on teams

Betsy Strehl[1] and Robin Fowler[2]

University of Michigan: Biomedical Engineering[1] and Technical Communication[2]

Summary

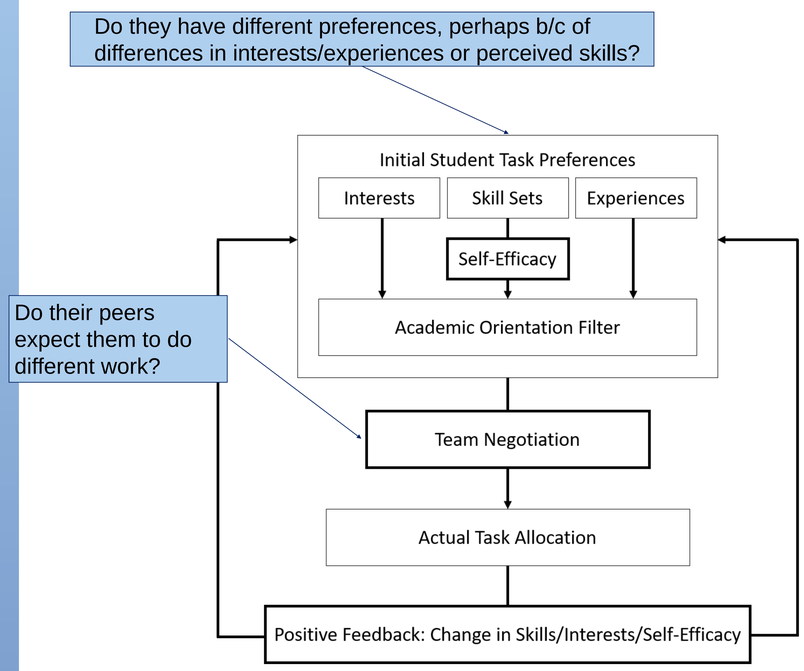
Are there differences (by gender and race) in who does particular work on student teams, when relevant background is held constant?

No gender or race differences in who is assigned technical tasks. However, differences exist with who is assigned managerial and writing work, with women assigned more managerial work and white women assigned more writing.

Background

EER researchers have documented differences in who does what on first year engineering teams. In some studies, women do more managerial and communication work; men do more building and coding.

However, it is not clear why or even who drives this difference.



From Fowler & Su, 2018

Scenario

The team needs to do a series of tasks for an engineering project, based on the profiles below, what percent of each of these parts does each member do?

Hardware * Software * Integration * Write-Up * Project Management

Names were selected from lists of popular baby names by gender and ethnicity, from 1996. These four names were counter-balanced across four randomly assigned groups.

Deondre * Destiny * Katie * Jake

Sample

Snowballed from a convenience sample

Incomplete surveys excluded, leaving

N=119

49% female, 50% male
71% White, 18% Asian
85% Engineering
87% Students
86% 18-24 years old

Findings

ANOVA considered effect of NAME and of PROFILE on percent of each task assigned to team members.

All main effects of PROFILE are significant: There is a relationship between profile and tasks assigned.

There is a significant main effect of NAME on the management task: Katie does more managing than Destiny, who does more managing than Deondre or Jake. ($p<0.01$)

There is a marginal main effect of NAME on the write up task: Katie does more writing than any of the other teammates ($p = 0.062$).

Profiles

Aerospace major

- **Member of M-Fly (business manager, software team**
- **High school AP physics and AP computer science**
- **Very vocal in first team meeting; talked over teammates at times**
- **Consistently early for class; Has not missed class or labs.**

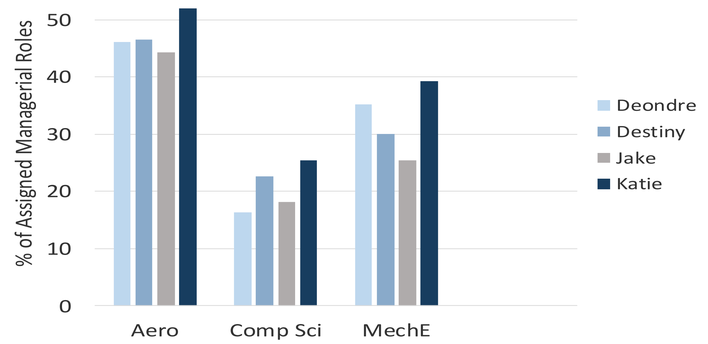
Computer Science major

- **Member of UROP (assists in chip design and architecture)**
- **Commuter student**
- **Fairly quiet in first team meeting; not clear if it's because of insecurity or relevant background**
- **Occasionally struggles to share ideas**

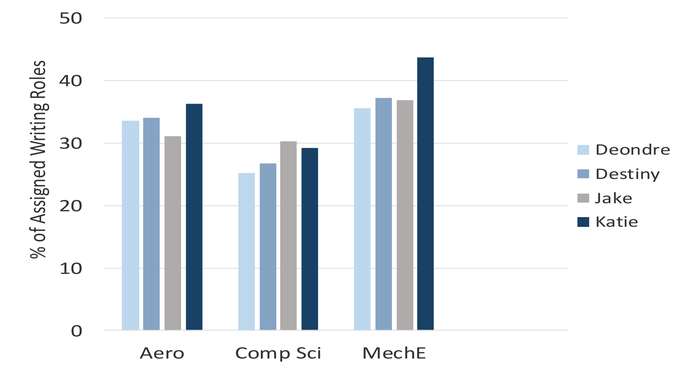
Mech Eng major

- **Member of UROP (Mechanical Engineering: assists in writing patents for microelectromechanical systems)**
- **4.0 GPA**
- **Member of high school debate team**

Women Assigned More Managerial



White Women Assigned More Writing



Implications

This study provides empirical evidence of implicit bias affecting how tasks are allocated on engineering design teams. While other factors (interests, self-efficacy, previous experiences) likely also affect task allocation, this study suggests that, even in the absence of those elements, peer expectations push students into inequitable roles on student teams.

We thank the participants who completed this survey and who shared the survey link with their networks. Strehl will present this work at ASEE in June 2019.