

ENGR 100 & E-FIGs: Section Plan Creating Conversations

Motivation

Current practices....

- Lack of conversation around diversity and equity within the College of Engineering
- Inconsistency/disparity between programs in facilitating these conversations/knowledge
- Proven bias within the academic engineering community

Cause.....

- Lack of consideration of these critical issues
 - Closed mindset
 - Lower participation of minority populations
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Problem Statement

UW CoE Goal: Increase **diversity, inclusion, and access** to foster excellence: We are dedicated to further developing and growing our diversity programs; recruiting and retaining a diverse faculty and student population; growing diversity-focused student scholarships and fellowships; and expanding our student academic services.

- The department of Engineering does not conduct regular conversation around issues in advancing diversity, equity and inclusion
- Systematic changes to instruction early on in the college career can help create a more inclusive environment
- Awareness & conversation are key!

Intervention

ENGR 100 Introduction To Engineering Design (5)

Course Description:

Introduction to design and communication principles through engineering project approach, stressing teamwork, design process, specialties and tools of engineering, creative and analytical thinking, professionalism and ethics, social, economic and political context, open-ended problems. Grading based on quality of engineering projects and presentation of design through written, oral, and graphical communication.

Current:

- Bland examples
- Minimal personal impact
- Suggestion of change

Future:

- Research focused
- Impact of equity & diversity
- Action items

Artificial Intelligence

- > AI systems discriminate against certain populations
 - Caused by bias in the people training data
- > On ImageNet, algorithms label the image on the left "**bride**," "**dress**," and "**woman**," but the North Indian bride on the left is "**performance art**" and "**costume**"



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Structural Bias

- > **Bias**: prejudice in favor of one thing against another
 - Often ingrained into structural decision making
- > *Example*: 2012 Study of Hiring Practices in Academia
 - > Student lab manager position
 - > Men received higher wages and rating regardless of same resume

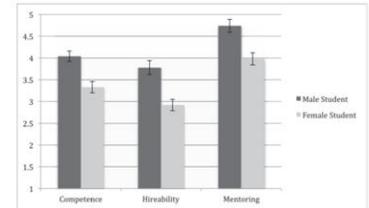


Fig. 1. Competence, hireability, and mentoring by student gender condition (collapsed across faculty gender). All student gender differences are significant ($P < 0.001$). Scales range from 1 to 7, with higher numbers reflecting a greater extent of each variable. Error bars represent SEs. $n_{\text{male student condition}} = 63$, $n_{\text{female student condition}} = 64$.

Science faculty's subtle gender biases favor male students

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Expected Results & Future Implications

- Empower students with awareness and knowledge of diversity and accessibility, equip them with the tools to be allies
- Delivery to all CoE students at the beginning of their college careers
- Start a conversation about broad topics in diversity to promote a culture of inclusivity and understanding within the College of Engineering
- Reduce bias within UW engineering community