Overview of Survey Results and Other Thoughts

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TUEE data collection for community engagement

Meetings/Discussions that Engage Engineering Education Community on how to Reform Engineering Education to Better Align with Needs of Business / Industry

Transforming Undergraduate Education in Engineering
Phase III: Voices on Women’s Participation and Retention
Summary of TUEE I

Results from Survey / Meeting with Business / Industry

• Engineering graduates are well prepared with hard skills – math / analytical skills
• Engineering graduates do not have well developed professional skills / communication skill
• Almost all knowledge, skills and abilities are important for new engineering graduates to be successful now.
• Almost all knowledge, skills and abilities will be MORE IMPORTANT for new engineering graduates in 10 years
Summary of TUEE II

Results from Survey / Meeting with Students

• Students answers to the importance of KSAs matched the level of importance ascribed by industry in 10 years
• Students perceived level of importance of KSAs for the engineering profession matched the students perceived level of importance ascribed by schools for hard skills.
• Students perceived level of importance of KSAs for the engineering profession was higher than students perceived level of importance ascribed by schools for professional / communication skills.
Pre-Meeting Questions

What do you perceive as the primary barrier to women’s participation in engineering?

What can/have you do/done as an individual to address this barrier?

What can organizations (academia, industry, government, other) do to address this barrier?
Primary Barriers

Culture: 41%

Gender Bias: 26%

Female Isolation in Engineering: 9%

Limitations in Female Opportunities in Early Education (K-12): 18%

Lack of Mentorship/Role Models: 6%

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Have done as individual?

- **Act as Role Model**: 3%
- **Advocacy work through organization**: 17%
- **Lead by Example**: 3%
- **Leadership in organization**: 12%
- **Mentor**: 12%
- **Other**: 6%
- **Research/Publish/Lecture**: 20%
- **Works in organization with projects that can affect gender in engineering (Internal Focus)**: 15%
- **Works in organization with projects that can affect gender in engineering (External Focus)**: 12%
Which Type of Organization?
Theories of Change

• A thousand points of light – the net effect of the one thousand small things we do, will have an affect on engineering education and engineering as a profession nationally.

• As more women come into engineering education and become engineers, engineering as a profession will become more accommodating to women.

• Mandate from above – ABET set requirements for inclusion as part of the accreditation process.

• Disruptors blow up systems which are replaced by new ones.
The weaker sex
No jobs, no family, no prospects
Thank you!