

# Influencing the Engineering Mindset and Culture

Affinity Group #1

# Key Factors to Overcome

- Diverse backgrounds & experiences, including international students
- Cultural stereotypes within the public & the profession
- Expectations vs. reality of what it means to be an engineer
- Resistance to change & risks of change
- Codes of ethics – formulation, perception, implementation
- Distance from stakeholders – populations, not individuals
- Low tolerance for ambiguity – “one right way/answer”

# Promising Approaches/Strategies

- Be More Intentional
  - Communicate culture & mindset, even in technical courses
  - Revise language used in classroom, office & external communications
  - Avoid reinforcing stereotypes
  - Draw clear connections between engineering & society
  - Give specific examples of different ways that engineers contribute

# Promising Approaches/Strategies

- Treat Ethics as Positive vs. Negative
  - Focus on what to accomplish vs. what to avoid
  - Portray ethical engineering work as “doing more good”
  - Advocate more reflective approach to practice
  - Encourage epistemic humility – know what you don’t know
  - Engage emotions & moral imagination

# Promising Approaches/Strategies

- Engineering Reasoning as Ethical Reasoning
  - Emphasize parallels & overlaps, but acknowledge differences
  - Choosing one option from among multiple viable options
  - Dealing with uncertainty vs. ambiguity
  - Modeling with mathematics vs. narratives
  - Relative unpredictability of nature vs. people

# What Can We Do?

- Community of Attendees

- Adjust pedagogy to integrate ethics throughout the engineering curriculum
- Get students thinking more about their role in the profession & society
- Provide more & better training on teaching with these issues in mind
- Work in industry during sabbaticals to gain practical experience

- Broader Engineering Community

- Consider making process for developing codes of ethics more transparent
- Engage corporate stakeholders in changing the conversation