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