INSIGHT WORKSHOP XIII

Professional Ethics

Speakers: Brent Jesiek, Purdue University
Kelly Laas, Illinois Institute of Technology

Hosts: Jennifer Cole & Robert Linsenmeier
Northwestern Center for Engineering Education Research

Northwestern | McCORMICK SCHOOL OF ENGINEERING

Agenda

9:00	Introduction: Why professional ethics education?
9:15	Breakout 1: What should students learn? - Kelly Laas
10:10	Ethical Theories/Frameworks - Rob Linsenmeier
10:25	Break
10:35	Breakout 2: How to teach ethics?
11:35	Status of ethics education in McCormick - Jennifer Cole
11:50	Student moral/ethical development
12:30	Lunch & plenary - Brent Jesiek
	“Encountering Engineering Ethics in the Workplace: Stories from the Trenches”
1:30	Assessment of student moral/ethical development - Kelly Laas
2:00	wrap-up and recommendations

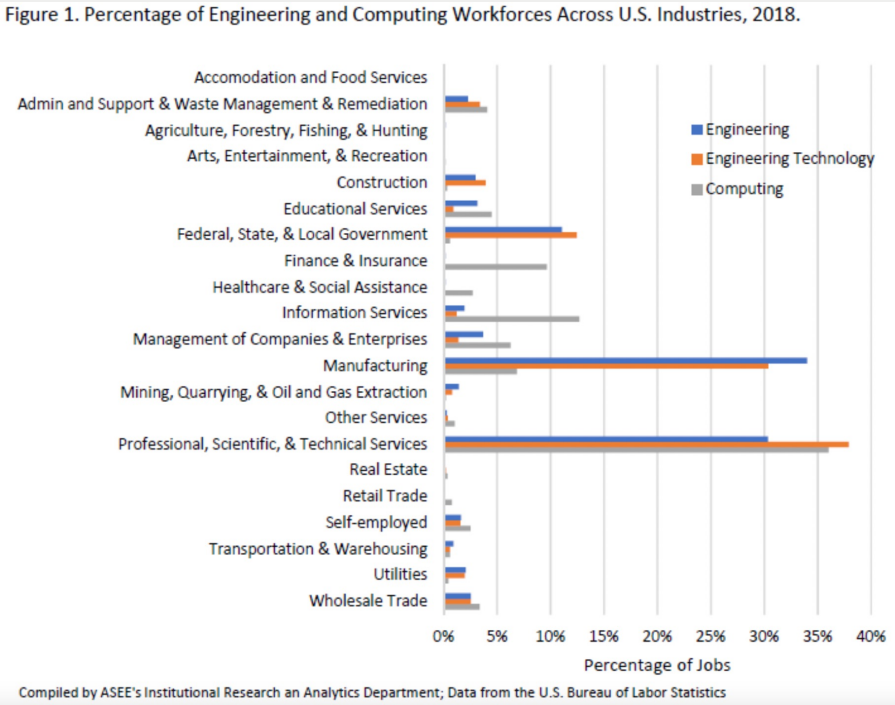
What is Professional Ethics?

Defined as the ethical principles or rules that govern the behavior of a person or a group within a business or professional environment

May differ from profession to profession

Underpin the guidelines that become professional “codes of conduct”

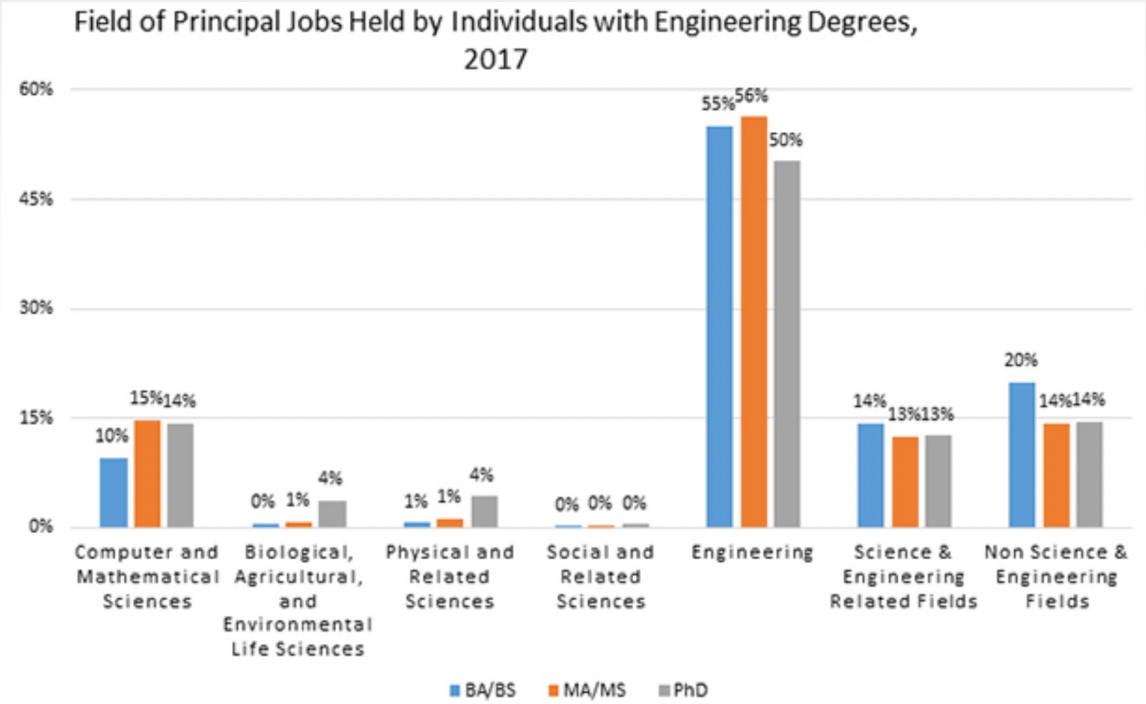
Where are engineers working?



A 2018 ASEE survey showed that over 65% of the engineering workforce and over 50% of the computing workforce were employed in STEM-related industrial jobs.

CURRENT STATUS OF THE U.S. ENGINEERING AND COMPUTING WORKFORCE, 2019
https://ira.asee.org/national-benchmark-reports/workforce2019/

Consistent findings across degree levels

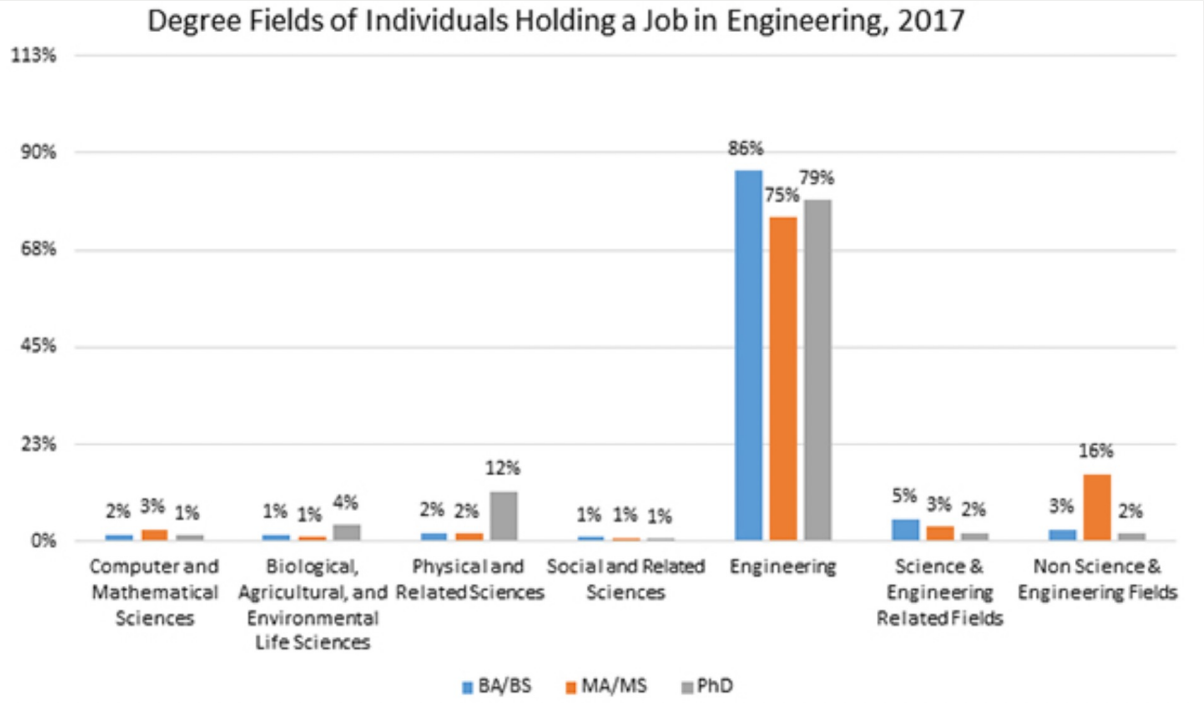


The largest fraction of the engineering workforce ends up working in engineering and STEM fields.

A SNAPSHOT OF ENGINEERING DEGREE-HOLDERS IN THE U.S. WORKFORCE

https://ira.asee.org/a-snapshot-of-engineering-degree-holders-in-the-u-s-workforce/

Mostly engineers in engineering jobs



Within engineering jobs, the majority hold an engineering degree

A SNAPSHOT OF ENGINEERING DEGREE-HOLDERS IN THE U.S. WORKFORCE
https://ira.asee.org/a-snapshot-of-engineering-degree-holders-in-the-u-s-workforce/

Preparing students to enter the workforce

- Technology, Engineering, and Society are connected
  - Technology and engineering solutions are complex and are often interconnected with and highly influence society
  - Who then bears the responsibility for technology and engineering solutions?
- Engineering training excels at teaching the what and how, but less on the who and why

Encountering ethical issues in the workplace

Engineers are tasked with balancing many potentially differing demands

- their companies needs/wants
- users of their products
- larger societal issues
- their own sense of appropriate behavior

The consequences of professional ethical lapses can be serious

- Union Carbide – Bhopal
- Tuskegee Syphilis Study
- More commonly: gifts from vendors, request to falsify data, how much to inform a customer, conflict of interest, …

onlineethics.org/cases/exportation-risk-case-bhopal
onlineethics.org/cases/ethics-science-classroom/tuskegee-syphilis-study

Why focus on Professional Ethics?

Large numbers of trained engineers end up in industry, even those that pursue higher degrees

Ethical issues are likely to come up and consequences can be serious

ABET requires students to have some understanding of professional ethics

Criterion 3, Student outcome 4:
"an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts"