Professional Cultures and Inequality in STEM

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Overview

- Question: How do taken-for-granted beliefs in STEM reproduce inequality?

    - Focus: Professional Cultures in STEM

A Starting Place

- Not primarily a "bad apples" problem
- Subtle beliefs and practices matter
- Won't necessarily improve with time
- Small disadvantages accumulate over time

A Starting Place

Figure 3: Representation of Women among S&E Bachelor's and PhD Earners, 1949-2011 (Excluding SocSci and Psych)**
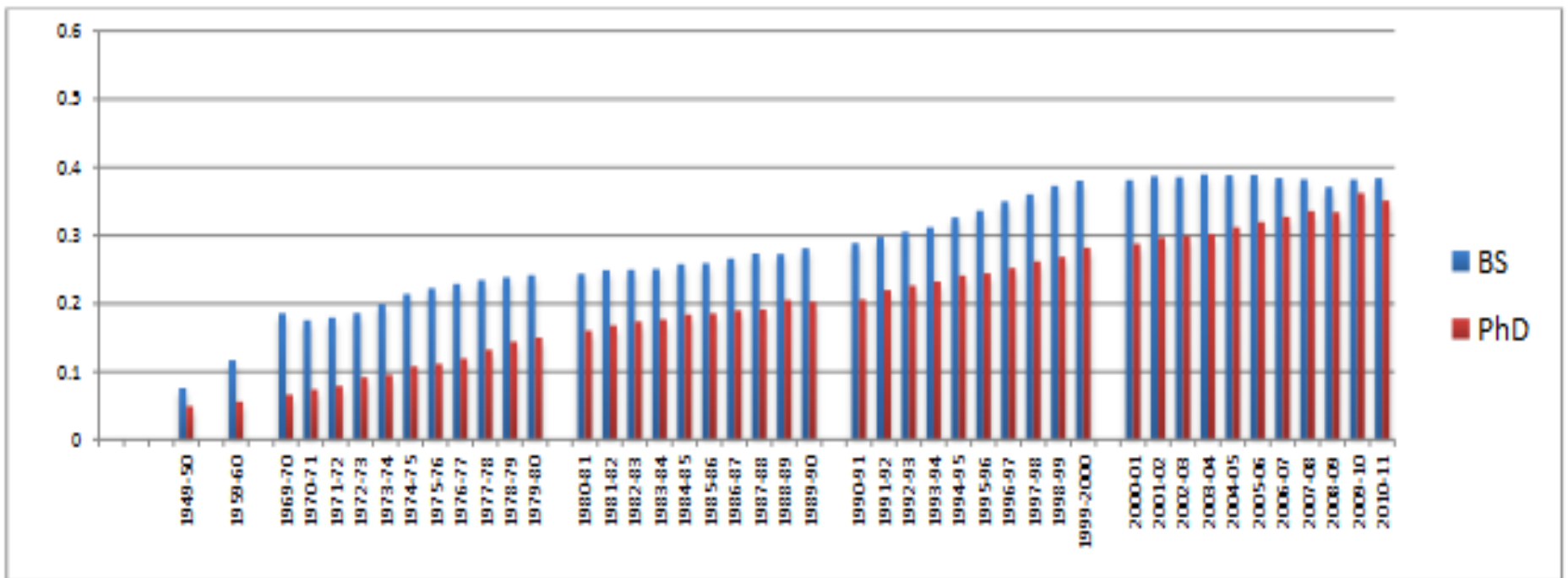
- Source: Erin Cech, Laura Pecenco, and Mary Blair-Loy 2013. " Science and Technology Professions : The Status of Women and Men." Center for Research on Gender in the Professions, UC San Diego. http://crgp.ucsd.edu .

A Starting Place

- No longer primarily a "bad apples" problem
- Subtle beliefs and practices matter
- Won't necessarily improve with time
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Culture Matters

- Professional cultures of STEM disciplines can help reproduce inequalities

- 3 specific cultural ideologies:
  - Schemas of scientific excellence
  - Depoliticization
  - Meritocracy

- How to undermine these ideologies

What are Professional Cultures?

- Professional cultures = rich and historically-rooted **meaning systems** built into and around professions' tasks and knowledge.
    - Give professional work meaning
    - Unite profession members

- Biases can be built into these cultures.

Three Specific Ideologies

Professional Cultures of STEM

Schemas of Scientific Excellence

Depoliticization

Meritocratic Ideology

Schemas of Scientific Excellence

- Characteristics & skills assumed to be markers of professional competence
  - **Cultural yardsticks** for measuring "excellence"
  - Influence hiring, promotion, and funding decisions

  - Not necessarily the characteristics *actually* required for success

  - Can be *gendered, racialized,* and *heteronormative*

  -Cech & Blair-Loy in progress, Cech 2013

Schemas of Scientific Excellence

- **E.g., the *Technical/Social Dualism***
  - The ideological separation between "technically-focused" and "socially-focused" activities (Faulkner 2000)
  - "Technical" is more highly-valued than the "social"

Gender stereotypes mapped on to this dualism:

Predicted Wages of Engineers
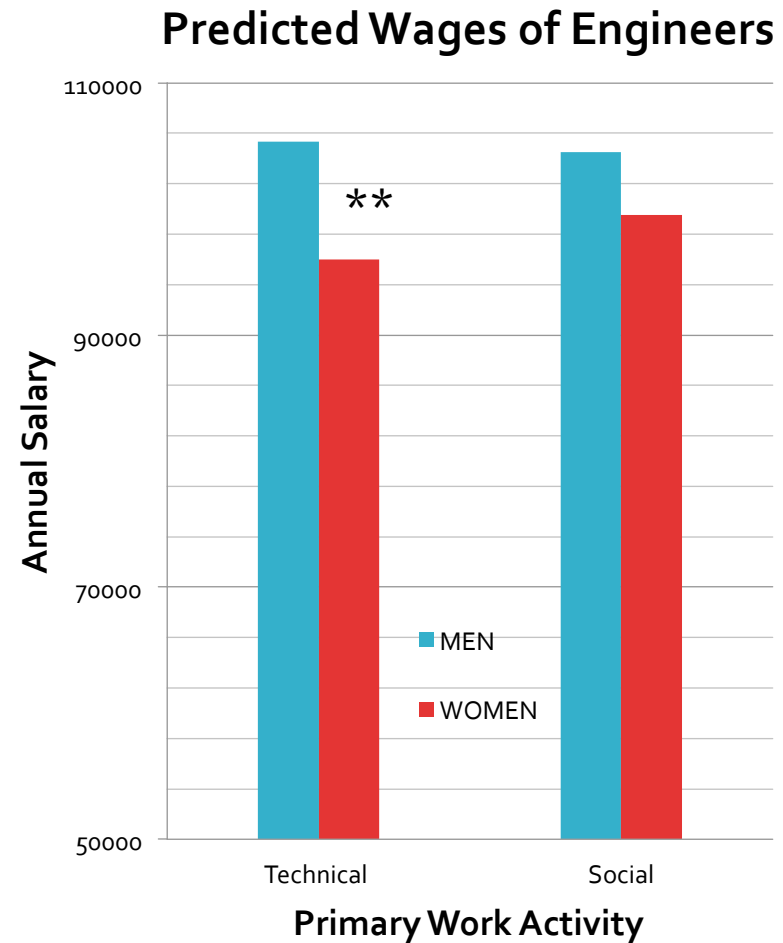
Source: (Cech 2013, *Social Forces*)

Percent of STEM Faculty who Agree that "Caring about Promoting Diversity" is characteristic of:

Embargoed

(Blair-Loy, Ferrante, Cech & Rogers, in progress)

Schemas of Scientific Excellence

Also shape what **research areas** are considered most "prestigious" and "valuable:"

Embargoed

Schemas of Scientific Excellence

Reflection Question: How is excellence judged in your department? How might social stereotypes get folded into these beliefs about excellence?

Depoliticization

comic: http://xkcd.com/435/
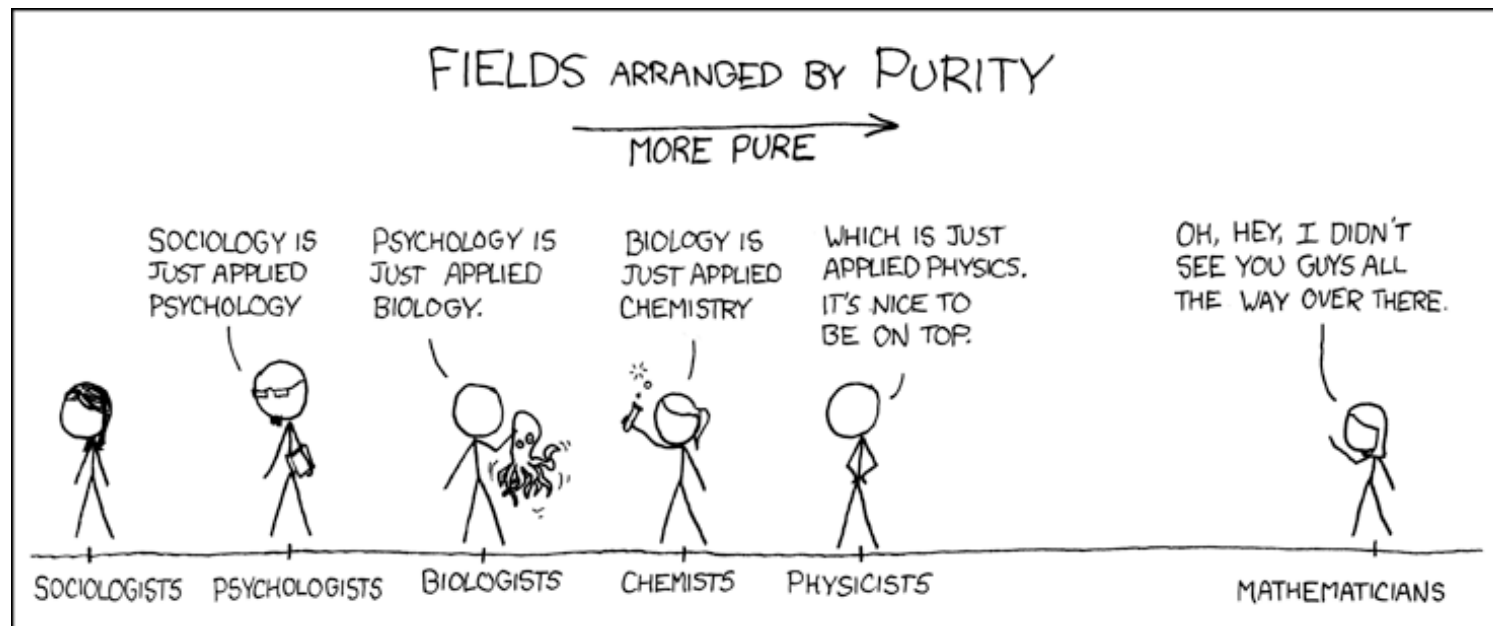
Depoliticization

- Depoliticization: the belief that science is a "pure" space that *can* and *should* be stripped of political and cultural concerns.

  - …But what to **study**, how to **define problems**, what to **fund** are *cultural & political* decisions

-Cech 2013, 2013b; Cech & Sherick 2015; Knorr-Cetina 1999; Latour & Woolgar 1986

Depoliticization

- Depoliticization can *shut down* conversations about diversity and equality within STEM

  - Impacts Students:

SOCIAL DISENGAGEMENT
In a US survey, more than 300 engineering students rated four aspects of the social relevance of their work lower at the end of their undergraduate degrees than at the start.
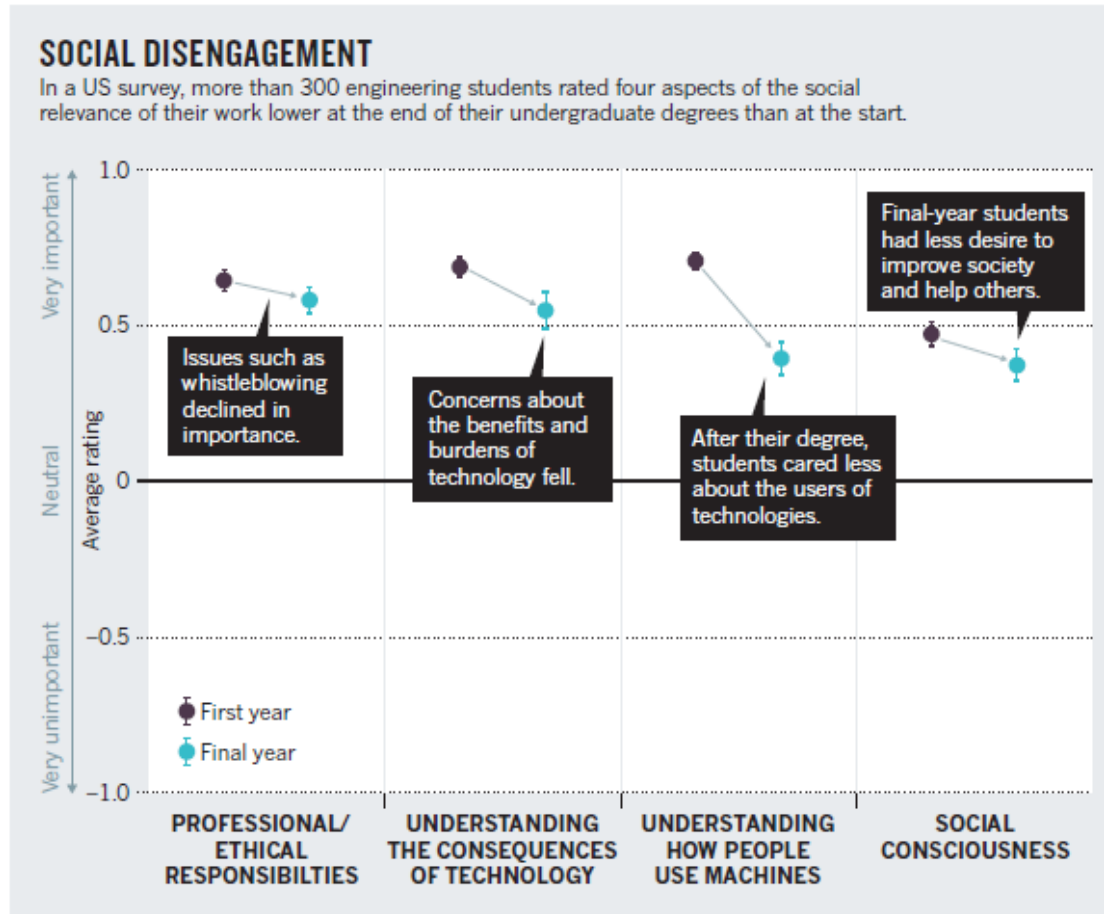
Cech 2014. "Comment: Embed Social Awareness in Science Curricula" *Nature*, vol. 50(7484):477-8.

Depoliticization

- Depoliticization reinforces existing power structures within STEM:

    In my department, [the issue of sexual identity] is sort of invisible. I think most of them are straight dudes who don't really think about the existence of people who are not like them. I think they have so much privilege that they can't understand what it's like for people who don't have that privilege. (Lesbian computer science graduate student)

    (--Cech and Waidzuans 2011, p. 11).

Depoliticization

Reflection Question: How might depoliticization silence conversations about diversity and inequality in your department?

Meritocratic Ideology

- The belief that success is the result of individual talent, training, and motivation

- Frames inequalities in STEM as the fault of women and minorities, not the social system.

Cech & Blair-Loy 2010, Cech, Blair-Loy and Rogers in progress, Klugel and Smith 1989, McCall 2012

Meritocratic Ideology

Embargoed

Meritocratic Ideology

Reflection Question: Who still needs to be convinced that unequal processes actually exist in STEM?

In sum…

- These 3 ideologies are part of the professional cultures of STEM
    - Difficult to *see*, hard to *change*

- Professional cultures can reproduce inequalities within STEM

- Do we contribute to these cultural processes?

What can be done?

- Not about "fixing" women or minorities to be more like white men

- Schemas of Scientific Excellence: Be wary of discussions about "fit"

- Depoliticization: Legitimize topics of diversity and equality

- Meritocratic Ideology: First step—explain that there *is* a problem

"Persistence of Male Power & Prestige in the Professions" Report

CRGP.ucsd.edu/STEMresearch

Schemas of Scientific Excellence:: How is excellence judged in your department? How might social stereotypes get folded into these beliefs about excellence?

Depoliticization: How might depoliticization silence conversations about diversity and inequality in your department?

Meritocratic Ideology: Who still needs to be convinced that unequal processes actually exist in STEM?

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Thank you