Aligning Higher Education Programs With Employer Needs
In Science, Engineering, and Medicine

Research Initiatives of the
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Two Challenges:

How can higher education most effectively engage with employers to ensure that STEMM graduates are "career ready" upon completion of their undergraduate and graduate degree?

What are the barriers that women face in participation, advancement and leadership in science, engineering and medicine—and how can those barriers be overcome?

Six Key Themes for Pursuing Better Alignment

1. Understanding the "voice of the employer"—and bringing the employer's voice onto the campus.

2. Better definition of a "STEMM-capable workforce"—including a better understanding of both the technical and non-cognitive skills required for career success.

3. Greater "blurring" of the lines between academia and the workforce, e.g. through internships, apprenticeships, and new business model?

4. Creating federal and state policies that incentivize stronger collaboration

5. Overcoming resistance from both "sides" in pursuing collaboration—reluctant employers and reticent faculty.

6. New, innovative, and dynamic career pathways, e.g. through continuous online learning and new models of "credentialing."

What We Know About Challenges for Women in STEMM

- Although women fall out of academic science at nearly every stage of the pipeline, women are underrepresented on faculties even in fields in which they have reached relative parity.

- Women comprise only 15.4 percent of full professors in the social and behavioral sciences and 14.8 percent in the life sciences, despite having earned more than 30 percent and 20 percent of the doctorates in those fields, respectively, over more than 30 years.

What We Know

- Women face discrimination -- sometimes deliberately but often inadvertently -- in every field of science and engineering. (African-American and Hispanic women often face double discrimination.) The discrimination results from a combination of built-in biases that make them less likely to hire a woman than a man with identical accomplishments, and of evaluation criteria that contain arbitrary and subjective components that disadvantage women.

- For instance, characteristics that are often selected for and believed ... to relate to scientific creativity -- namely assertiveness and single-mindedness -- are both given greater weight in hiring and promotion than traits such as flexibility, diplomacy and curiosity, and stereotyped as socially unacceptable traits for women.

Strategies

- Trustees and presidents should provide clear leadership in changing the culture and structure of their institutions to recruit, retain and promote women, including setting goals for hiring and promotion requiring evidence of a fair, broad and aggressive search before approving appointments.

- Deans, department chairs and tenured faculty to undertake a full discussion of "climate issues," and to adopt policies that take into account the flexibility that faculty need across the life course and do not sacrifice quality in the process of meeting rigid timelines.

Strategies

- Federal agencies and foundations should ensure that their standards and rules support the full participation of women and do not reinforce a culture that fundamentally discriminates against them.

- Training practices to reduce implicit bias and eliminate sexual harassment should be strengthened and regularly evaluated and enhanced.

"Beyond Bias and Barriers: Fulfilling the Potential of Women in Academic Science and Engineering," Committee on Maximizing the Potential of Women in Academic Science and Engineering, National Academies Press, 2006.

Committee on Women
Study on Sexual Harassment

- How is sexual harassment defined?

- How prevalent is sexual harassment in the academic work setting in STEMM?

- What is unique about STEMM that may contribute to sexual harassment?

- What are the effects of harassment on women's career choices in STEMM?

Reducing Sexual Harassment

- Changing the culture

- Benefits of sexual harassment and implicit bias <u>training</u>

- Effects of civility training

- Legislative and policy remedies

Your Comments and Ideas?