

Report on Gender Equality in STEM

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North American Gender Summit of 2013

The 2013 Gender Summit of North America



- International meeting of scientists and policymakers to create a roadmap for improving the climate for underrepresented groups in STEM disciplines, with a focus on gender equality.
- Focused on identifying problems, their causes, and potential solutions

Why is the issue of gender equality in STEM important?

- Fairness is important, but not the only reason why the STEM community should care.
- Quality of research in a field improves with openness, diversity of backgrounds and viewpoints, and lack of barriers to advancement.
- Underrepresentation of any group causes inefficiencies in utilizing talent from the entire population
- Improving diversity is a crucial part of creating high quality research and advancing a field of knowledge.

Causes and Manifestations: Implicit Bias

- What sounds do you hear in the following video clip?



Causes and Manifestations: Implicit Bias

- What sounds do you hear in the following video clip?



ba ba

Causes and Manifestations: Implicit Bias

- What sounds do you hear in the following video clip?



da da

Causes and Manifestations: Implicit Bias

- What sounds do you hear in the following video clip?



ga ga

Causes and Manifestations: Implicit Bias

- What sounds do you hear in the following video clip?



ba ba

da da

ga ga

Causes and Manifestations: Implicit Bias

- What do you see in this image?

Causes and Manifestations: Implicit Bias



Causes and Manifestations: Implicit Bias

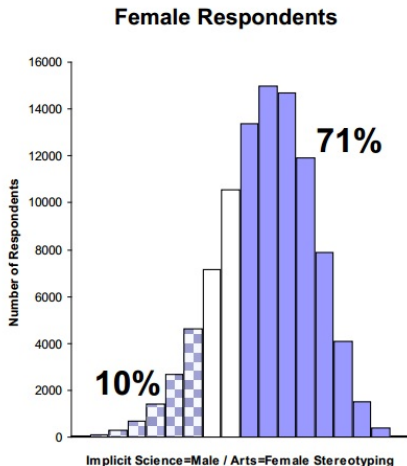
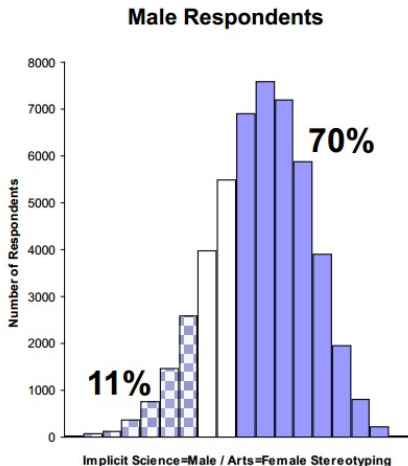
- Can you trust what your senses are telling you? Even sensory perceptions are not completely objective; they are interpreted by our brain.
- Once a way of perceiving something is ingrained in your brain, it's very hard to let go of it.

Causes and Manifestations: Implicit Bias

- Similar phenomenon of implicit bias affects perceptions of different genders in STEM fields
- Association study by Smyth, Nosek, et al.
- Used Implicit Association Test (<https://implicit.harvard.edu>) to investigate gender biases related to math and science

Male	Female	Science	Arts
Daniel	Anna	Math	History
John	Rebecca	Physics	Languages
Paul	Michelle	Chemistry	English
Michael	Emily	Biology	Poetry
Jeffrey	Julia		

Causes and Manifestations: Implicit Bias



Nosek, "Implicit Predictors of Stem Engagement," NA Gender Summit Presentation, 13

Causes and Manifestations: Implicit Bias

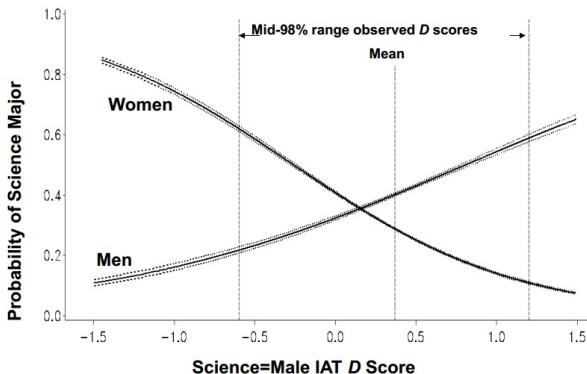
Implicit Bias of “Gatekeepers”

- 1 Study: Sent resume for lab manager position to 127 science faculty for review
- 2 Identical resumes each assigned random name: “John” or “Jennifer”
- 3 “Jennifer” was rated significantly less competent and less hireable than “John,” and was significantly less likely to be offered mentoring
- 4 “Jennifer” offered \$4,000 less in starting salary on average
- 5 NO significant difference in responses of male and female science faculty

Moss-Racusin & Dovidio, et al. *Science faculty's subtle gender biases favor male students*. PNAS, Sep 2011.

Causes and Manifestations: Implicit Bias

Estimated probability of majoring in science as a function of sex and implicit gender-science stereotype



Nosek, "Implicit Predictors of Stem Engagement," NA Gender Summit Presentation, 13 Nov 2013

Causes and Manifestations: Other Biases

- Institutional Bias
 - occurs when structure of institutions and their policies creates difficulties for particular groups
 - support for faculty with families and children
 - searches by hiring committees
- Bias in research
 - significance of gender information in medical studies
 - safety of researchers of all genders in the lab
- Bias in research review
 - blind reviews in journals
- Representation in the media
 - images of women as scientists in TV, movies, Internet, etc.
 - visibility of actual women in science

Potential Solutions

- Education about implicit bias
 - Title IX office at UCSB
- Active versus passive responsibility
 - institutional leaders and all members of community making an *active* effort to engage with and improve the issue
 - diversity issues belong to and affect all of us
- Mentoring and networking opportunities
 - networking and good mentoring promote diversity
- Ongoing dialogue about diversity

Potential Actions to Take at UCSB

- Education & training on managing implicit bias for various levels (faculty, grad students, hiring committees, etc.)
- Creating networking opportunities for early-career scientists
- Regular seminar on diversity issues
- NSF ADVANCE
- Administrative assistance in coordinating these things
- Cultivating community and sense of belonging for all

Support your local WiP!



Thank You!

- UCSB Physics Department & Chair Fyl Pincus
- Omer Blaes and Meredith Murr
- WiP members and supporters
- All others who helped make attending this conference possible

Discussion & Suggestions

Some points discussed during this presentation on 2/6/2014

- Training on implicit bias
 - not currently required for hiring/admissions committees or TAs
 - important & effective for counteracting bias
 - practical ways to blind the application review process to gender?
- How to more widely distribute this info and get others interested?
 - talk to incoming grad students/potential TAs during orientation, instead of later in the quarter in TA training class
 - bring visiting speakers on diversity and gender issues to regular physics colloquium
 - how to get undergrads more involved? reach out through WiP events, other events, in classes, through peer networks
 - importance of collaboration with other departments (e.g. engineering)
- Differences between approaches to this issue in industry and academia