

Teaching for Retention & Diversity

New Faculty Workshop
13-16 November 2014

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Session Objectives

- Brief general discussion on diversity
- Provide an overview of Unconscious Bias and Stereotype Threat
- Introduce some of the research
- Use case studies to foster discussion about diversity and move toward a deeper understanding of diversity and one's own unconscious bias
- Identify and learn about strategies to address the challenges and benefits of diversity

Ultimate Objectives

- Reflect on how diversity impacts you as a professor and how you impact diverse students
- Reflect on your personal outlook on diversity

Why are you here?

Is a diverse physics profession important? If so, why?

What is my definition of diversity?

What is Diversity to Me?

“We have no hope of solving our problems without harnessing the diversity, the energy, and the creativity of all our people.”

-Roger Wilkins

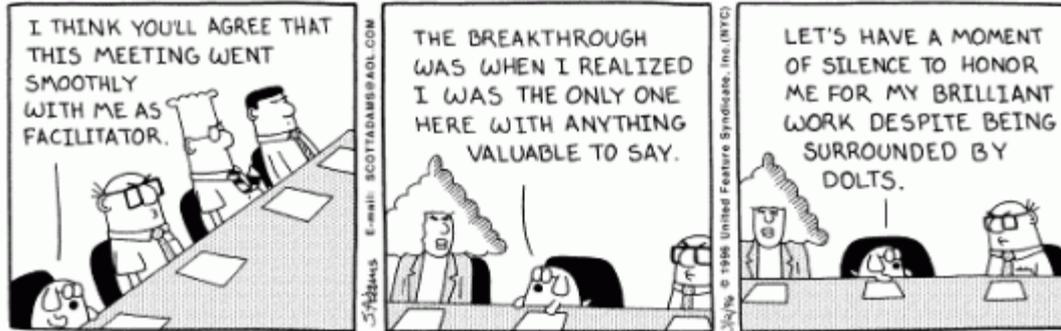
*Pulitzer Prize winner,
preeminent former professor
of History and American
Culture (GMU) and American
Civil Rights Leader*

“You have to get along with people, but you also have to recognize that the strength of a team is different people with different perspectives and different personalities.”

-Steve Case

*Former CEO and Chairman, America Online
Serves on President Obama’s Council on Jobs and
Competitiveness*

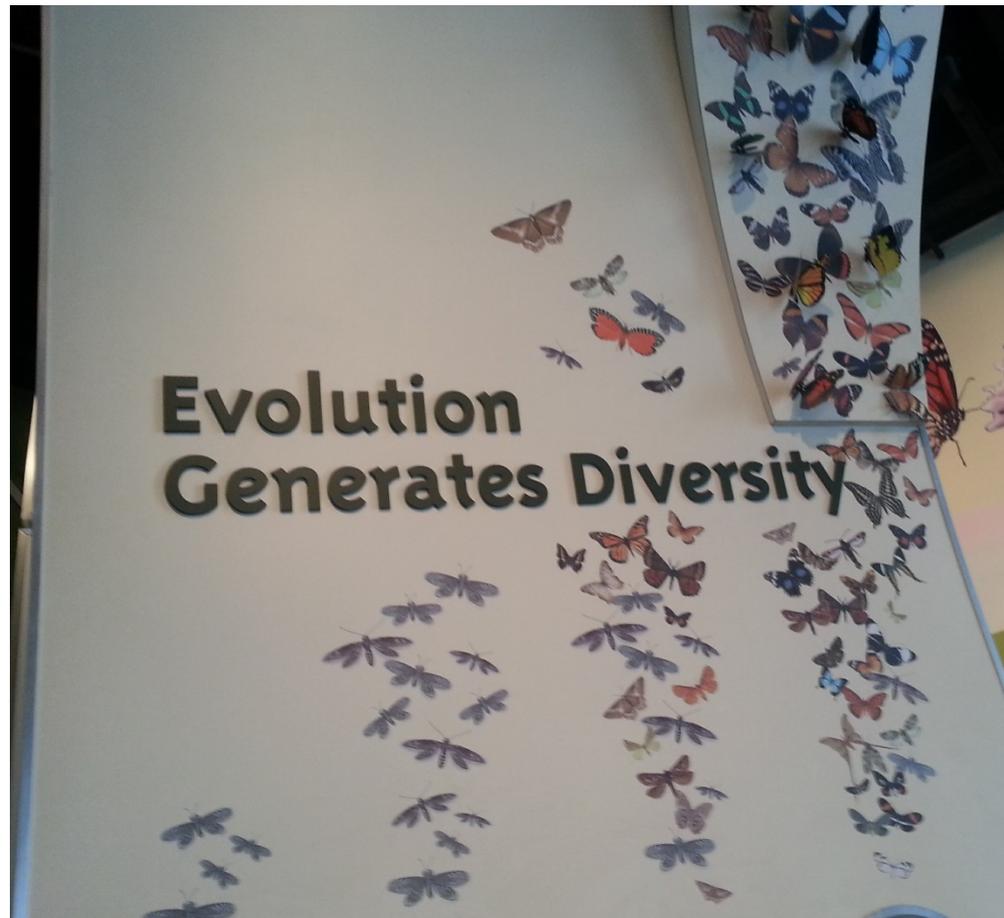
What is Diversity to Me?



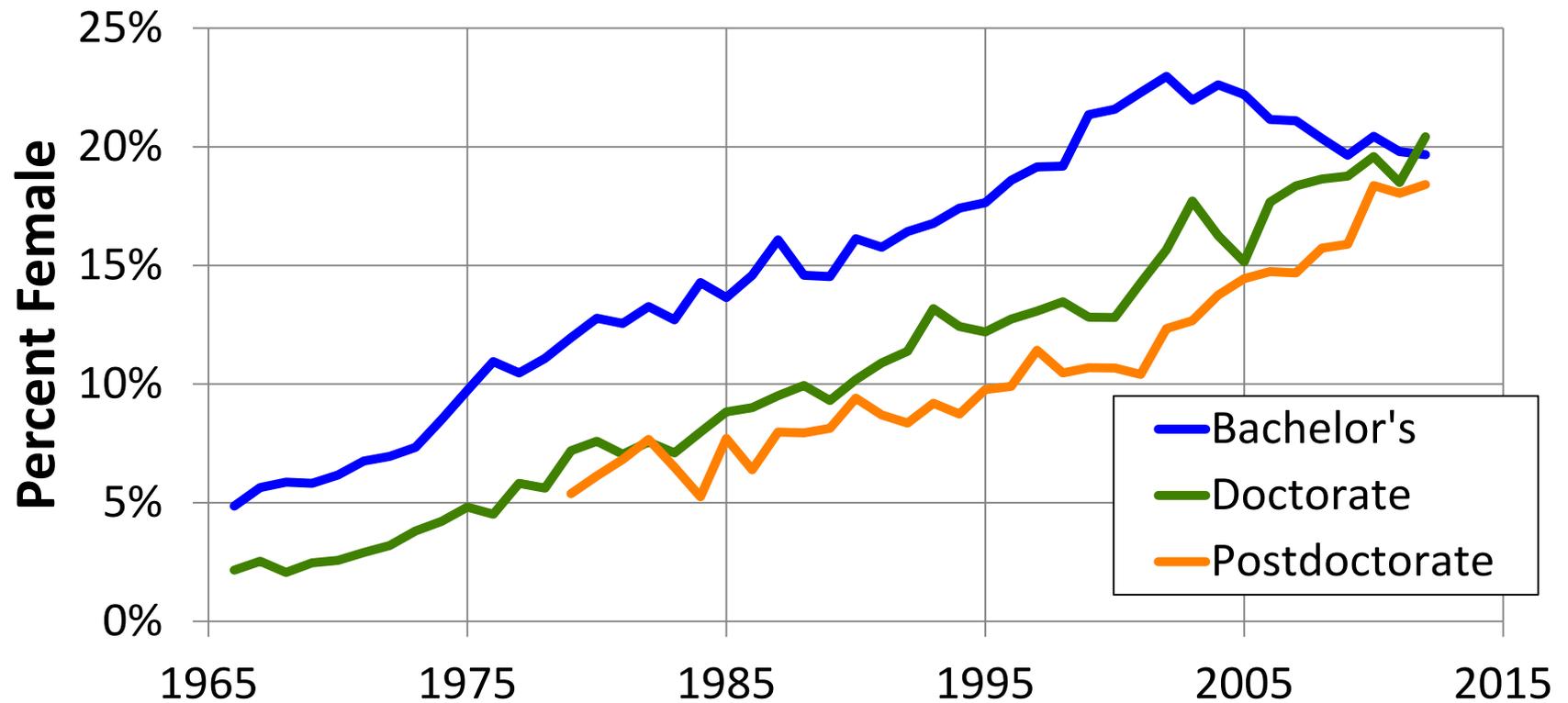
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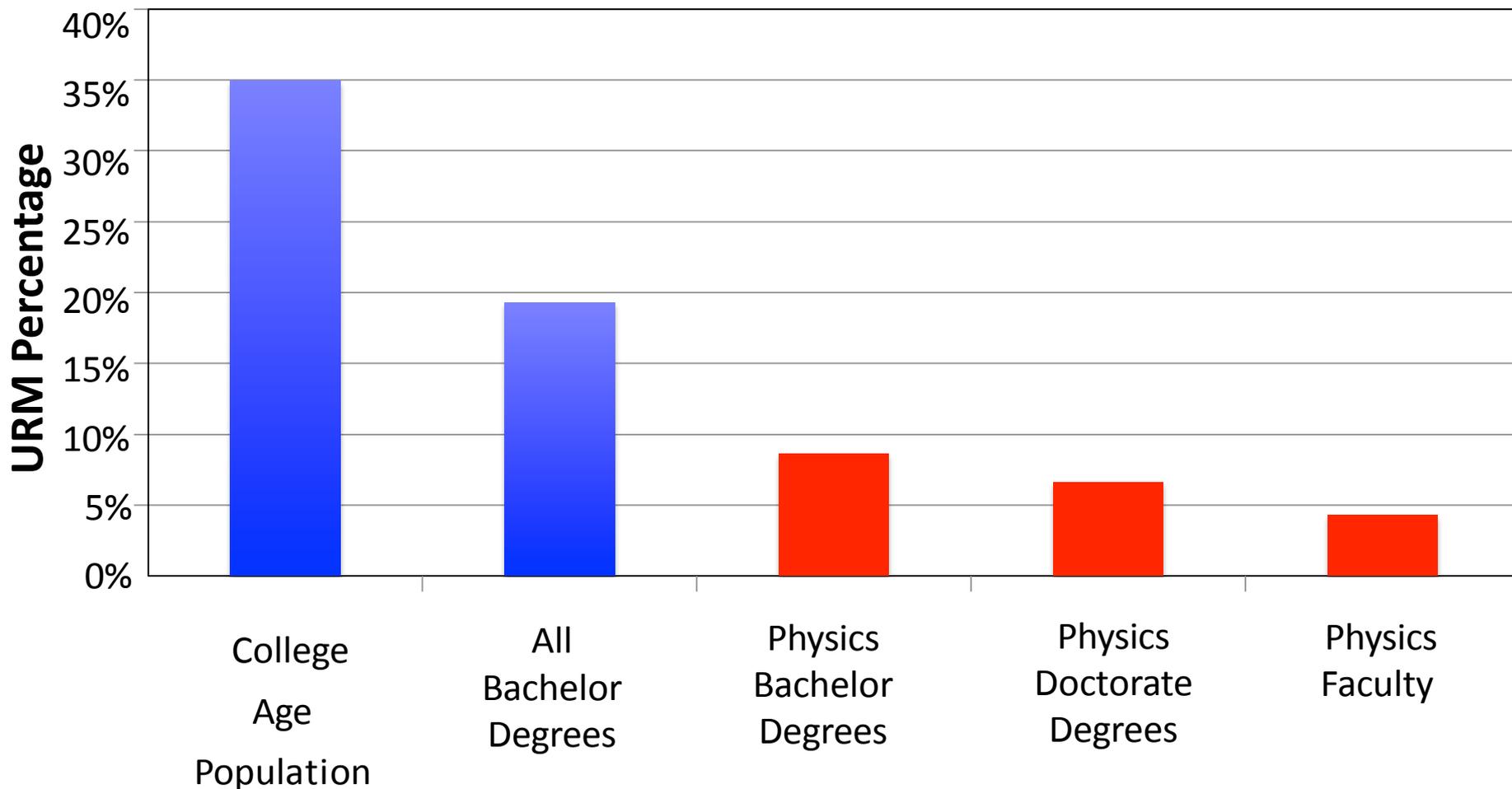




Women in Physics



Percentage of Underrepresented Minorities in Physics



A Picture Worth a Thousand Words



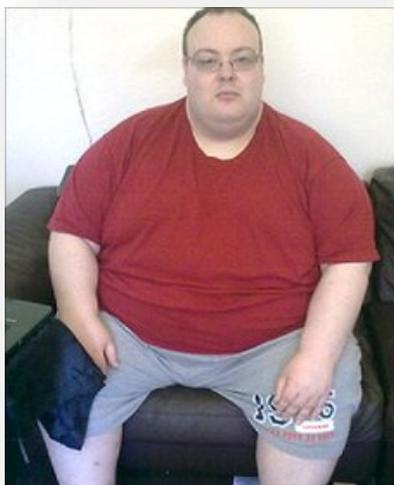
How safe would you feel? How smart do you think they are?



How safe would you feel? How smart do you think they are?



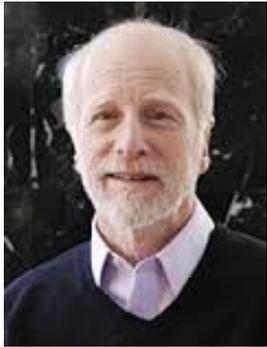
Who looks more like a scientist?



How comfortable would you feel authoring a paper with them?



What is Unconscious Bias ?



Dr. Anthony G. Greenwald

Unconscious bias, also known as implicit social cognition, is the unconscious attribution of certain qualities to a person or group, which affect our perceptions, decisions, and actions

Dr. Anthony G. Greenwald is a renowned professor and social psychologist at the University of Washington, known for his ground breaking work on Implicit Social Cognition, and his invention of the Implicit Association Test

Do Science Faculty Exhibit Unconscious Bias?

A randomized double-blind study was conducted to examine whether faculty bias exists within the biological and physical sciences and whether it exerts any influence on the gender gap in these fields.

Physics, chemistry and biology professors were asked to rate the application of a student – assigned either a male or female name – for a laboratory manager position. Participants were asked to rate the student on their competence, hireability, and the amount of salary and mentoring they would offer the student.

Science faculty's subtle gender biases favor male students

Moss-Racusin, Dovidio, Brescoll, Graham, and Handelsman (2012)

Do Science Faculty Exhibit Unconscious Bias?

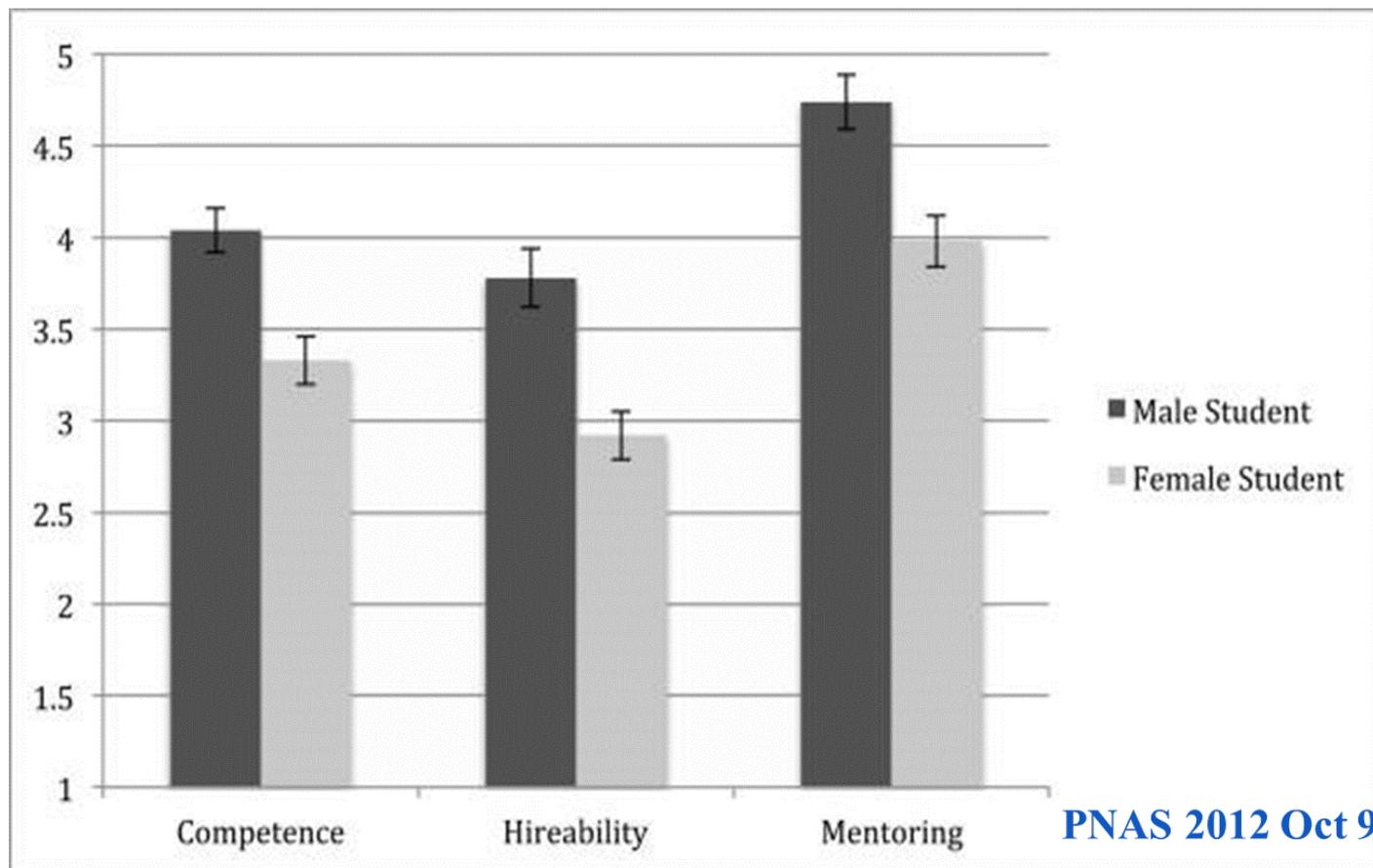
Conclusion

The faculty gave the male student significantly higher ratings on all variables tested (competence, hireability, mentoring, and salary). Student gender was a significant factor in how students were viewed.

Even more surprising is that faculty gender showed no significant difference. Female faculty were equally as biased against the female student as the male faculty

Do Science Faculty Exhibit Unconscious Bias?

Competence, Hireability and Mentoring by Gender



Do Science Faculty Exhibit Unconscious Bias?

Starting Salary by Gender



More Data on Unconscious Bias

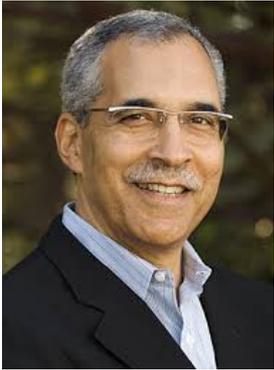
Parents' estimates of math ability are higher for sons than for daughters, despite no gender differences in grades or test scores.

D.K. Yee, and J.S. Eccles, "Parent perceptions and attributions for children's math achievement," *Sex Roles* **19**, 371-333 (1988)

Blind, randomized trial: When asked to rate the quality of verbal skills indicated by a short text, evaluators rated the skills as lower if they were told an African American wrote the text than if a they were told a white person wrote it, and gave lower ratings when told a man wrote it than when told a woman wrote it.

M. Biernat, and M. Manis, "Shifting Standards and Stereotype-Based Judgments," *Journal of Personality and Social Psychology* **66 (5)**, 20 1994

What is Stereotype Threat?



Dr. Claude M. Steele

Stereotype Threat

The threat of being viewed through the lens of a negative stereotype, or the fear of doing something that would inadvertently confirm that stereotype.

Steele is currently the Executive Vice Chancellor and Provost at UC Berkeley, and he is most known for his ground-breaking work on Stereotype Threat

What is Stereotype Threat?

Stereotype Threat is...

- Situational
- Affects those who really identify with domain in which they are being judged
- Not about low confidence or ability
- Affects people even if they don't believe the stereotype to be true
- Over time, can cause people to disidentify with a domain

- Why case studies?
- Spend time talking about your assigned case study with colleagues at your table. Be prepared to share/ compare your strategy/conclusions with the larger group.
- In addition to the specific questions asked, think about what your institution or department might do to address the issues presented in the case

| Case Study | Tables |
|---------------------|--------|
| Group Lab | Even |
| Mentoring a Student | Odd |
| | |

Case Study: Group Lab

Marie Louise Moreau wondered whether she was the only student in her chemistry group who had read the assignment before coming to class. She had expected more when she had taken a plane from Haiti to study at a prestigious college in the United States.

She spoke up. “Well, when I was doing the reading,” she said, “there was a note in the sidebar that said you should add titrant slowly near the endpoint. That way, when the solution changes color, it is easier to tell how much titrant was added.” Joe, her group’s self-appointed leader, really didn’t know how to proceed, but he looked at her with doubt. Could she be right? He didn’t want to rely on Marie’s word alone. She had many ideas but they weren’t always good ones. “Adam!” he called to their TA.

Joe repeated Marie’s statement to Adam. “Is that true?” he said.

“Good memory, Joe,” said Adam, clapping Joe on the shoulder. “That’s right. You’re an asset to your group.” The other students in their group looked uncomfortable. Joe had stolen credit for Marie’s answer again, and Marie was upset.

What issues does this raise? What are some of the assumptions made? What should Marie do? What could the TA do differently? What is the role of the professor?

Case Study: Mentoring a Student

Barbara Ross was a prolific researcher at a large public university. Her astrophysics research was well regarded, and her record in attracting grant funding was excellent, but she knew that she needed to improve her teaching to assure her tenure. During her pause for thought, Barbara heard a knock at the door. When she called, "Come in," Jim Burton, a thin young African-American student with glasses, entered the room. He stood awkwardly near the doorway as he greeted her. "I wanted to stop by, since you asked me to after class," he said.

"Have a seat," said Barbara, feigning warmth. Inwardly, she was bracing herself for a difficult meeting. She never liked to be the bearer of bad news.

Barbara had recently attended a presentation about the high dropout rate of minority students in science. After the presentation, she became uncomfortably aware of the small numbers of minority students in her classes, and resolved to try and mentor her students more. Jim was averaging a "C-" in the course, and she wanted to help him improve his grade.

"Jim," Barbara said, "What would you like to do after you're done with college?"

Case Study: Mentoring a Student continued

"I don't know," said Jim, looking down. "Be a scientist, I guess."

"So, then, you'd like to go to graduate school?" said Barbara briskly.

"Sure, if I can get a scholarship," Jim replied.

"There are a lot of fellowships and grants for graduate students," said Barbara.

"But in order to get one, you'll probably need at least a "B+" in this class. My question is - how can I help you get that grade? Do you have any questions about the lectures or the textbook? I'm available every week during office hours."

"Oh, I'm doing all right," said Jim. "I got a "C" in high school chemistry, and I got a scholarship for college anyway. Plus, I want to major in geology... I'm just taking this class as an elective.

Barbara was not sure how to respond. "I don't usually recommend this to students," she said, "but I really would hate to see this course compromise your ability to get into graduate school. It's not too late to switch to Astronomy 150, if you'd like to see your grade improve."

Case Study: Mentoring a Student continued

Jim stood up. He looked offended. "No... that's okay," he said. "There's nothing wrong with a "C". I'm staying in your class. And I don't need extra help. I can do this on my own." He left the office quietly.

Barbara put her head in her hands. What had she done wrong this time? She had offered Jim options. She had tried to be sympathetic and diplomatic. But somehow, things had not gone as she had planned.

What is going on from Prof. Ross's point of view? What is going on from Jim's point of view? What could have been done differently? How could this exchange be improved?

Strategies to Mitigate Stereotype Threat

For Both Domain-identified and Domain unidentified students

- Optimistic student teacher relationships
- Challenge over remediation
- Stressing the expandability of intelligence

For Domain identified students

- Affirming domain belongingness
- Valuing multiple perspectives
- Role models

For Domain unidentified students

- Nonjudgmental responsiveness
- Building self-efficacy

C. M. Steele, "A Threat in the Air: How stereotypes shape intellectual identity and performance." June, American Psychologist **52 (6)**, 613 - 629 (June 1997)

Advice from the Field

- Require high standards, but convey to your students your confidence in their ability to meet them.
- Never split classes by gender for any reason
- Learn about Imposter Syndrome and Stereotype Threat
- Reach out to struggling students

Advice from the Field

- Inform yourself about student resources so that you can refer students as needed (e.g., homework help, tutors, counseling, the importance of working with classmates)
- Encourage students to attend conferences specific to science students of color or LGBTQ students (like the National Society of Black Physicists or National Society of Hispanic meetings, and Out to Innovate) in addition to more general scientific conferences.
- Find out about industry jobs and make important contacts there.

- General discussion on diversity
- Provided a brief introduction to unconscious bias and stereotype threat
- Reviewed some of the research on these concepts
- Used case studies to tease out strategies for dealing with some of the challenges and benefits of diversity, and perhaps reflect on our own thoughts about diversity
- Learned from people who are affected and those who have done the research what strategies might also work
- Hopefully had some fun on a Sunday morning!

Closing Reflection

What concepts about diversity, unconscious bias, and stereotype threat had you not considered before today?

What, if any, changes will you make when interacting with your diverse students?

THANK YOU!

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