Teaching for Retention

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The Issue

- Most Students, especially first generation students, know very little about what physicists do and whether their unique skills and attributes are a good match for a physics related career.
- Few faculty have received mentor training
- Despite years of concerted effort, the proportion of students from underrepresented group remains low and for some, continues to drop.

Opening Reflection

What is the value of a diverse physics profession?

What is my definition of diversity?

How do I improve my mentoring skills?

Which Defines Your Department?

- Sorting and mining.
- Plant the seeds and cultivate the plants.

Session Objectives

Participants will be able to:

- Reflect on the benefits and challenges of diversity in physics
- Identify some research basis for unconscious bias and stereotype threat and articulate some implications of such studies
- Identify some mentoring skills/techniques that improve student success
- Have discussions about how to address diversity issues
- Discuss strategies to address the challenges and benefits of diversity
- Reflect on a personal definition of diversity.

Personal Glimpses

I Believe…

Those educated in diverse settings are:

- More likely to be intellectually nimble and creative
- More likely to make meaningful contributions
- More likely to be effective team players
- More likely to be successful leaders
- More likely to do the right thing

What Can We Do To Help Our Students?

Students need
good information
and effective models
so they can learn to make
good decisions.

Characteristics of a Successful Program

- The students were made to feel as if they belonged
- Faculty demonstrated that they believed the students belonged
- An atmosphere existed in which the expectation of both faculty and students was that students could and would succeed
- There was an individual(s) that took ownership of the program
- The departmental faculty was willing to share their experiences and excitement about physics with their students
- Students held to high standards in a positive and nurturing environment
- Graduate students were sponsored and promoted into the profession.

Data on Unconscious Bias and Stereotype Threat

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

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

Data on Unconscious Bias and Stereotype Threat

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.

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

Data on Unconscious Bias and Stereotype Threat

CVs of real women were assigned a male or female name, randomly, and sent to 238 academic psychologists to review either 1) at the time of job application or 2) at the time of review for an early tenure decision. Respondents were more likely to hire the applicant if a male name was found on the CV at the time of job application. Gender of applicant had no effect on respondents' likelihood of granting tenure when their CV was reviewed as part of an early tenure decision. However, there were four times more "cautionary comments" in the margins of the tenure packages with female names such as "We would have to see her job talk."

(Steinpreis, R. E., K. A. Anders, and D. Ritzke. 1999. The impact of gender on the review of the curricula vitae of job applicants and tenure candidates: A national empirical study. Sex Roles 41:509-527).

Research on Bias

- In every study, find significant effect of gender or race of person being evaluated
- NO significant effect of gender or race of person doing the evaluation

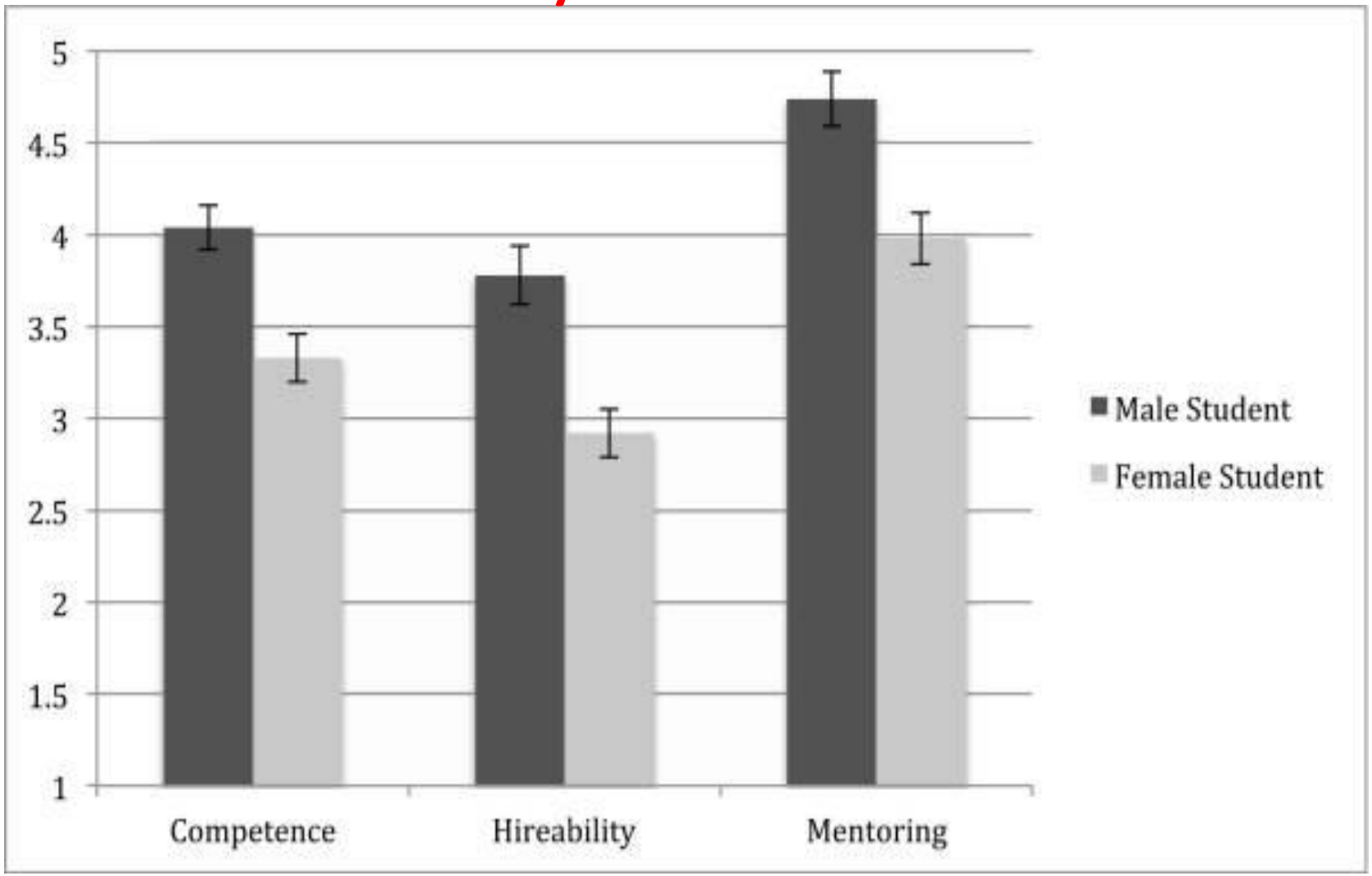
Courtesy: Jo Handelsman

Reactions to Evidence of Bias

- Not here…..
  - "It's like that in Sweden, but not here in the U.S."
  - "It's like that at rural universities, but not urban ones."
  - "It's like that at Harvard, but not at UW."
  - "It's like that at UW, but not at Harvard."
  - "It's like that in the economics department, but certainly not here in physics!"
- "Women and minorities are just too sensitive"
- Scientists are objective, we don't exhibit that behavior
- "What's the standard deviation in line 4 of Table 3 of the 19xx study?"

Courtesy: Jo Handelsman

Competence, Hireability and Mentoring by Gender



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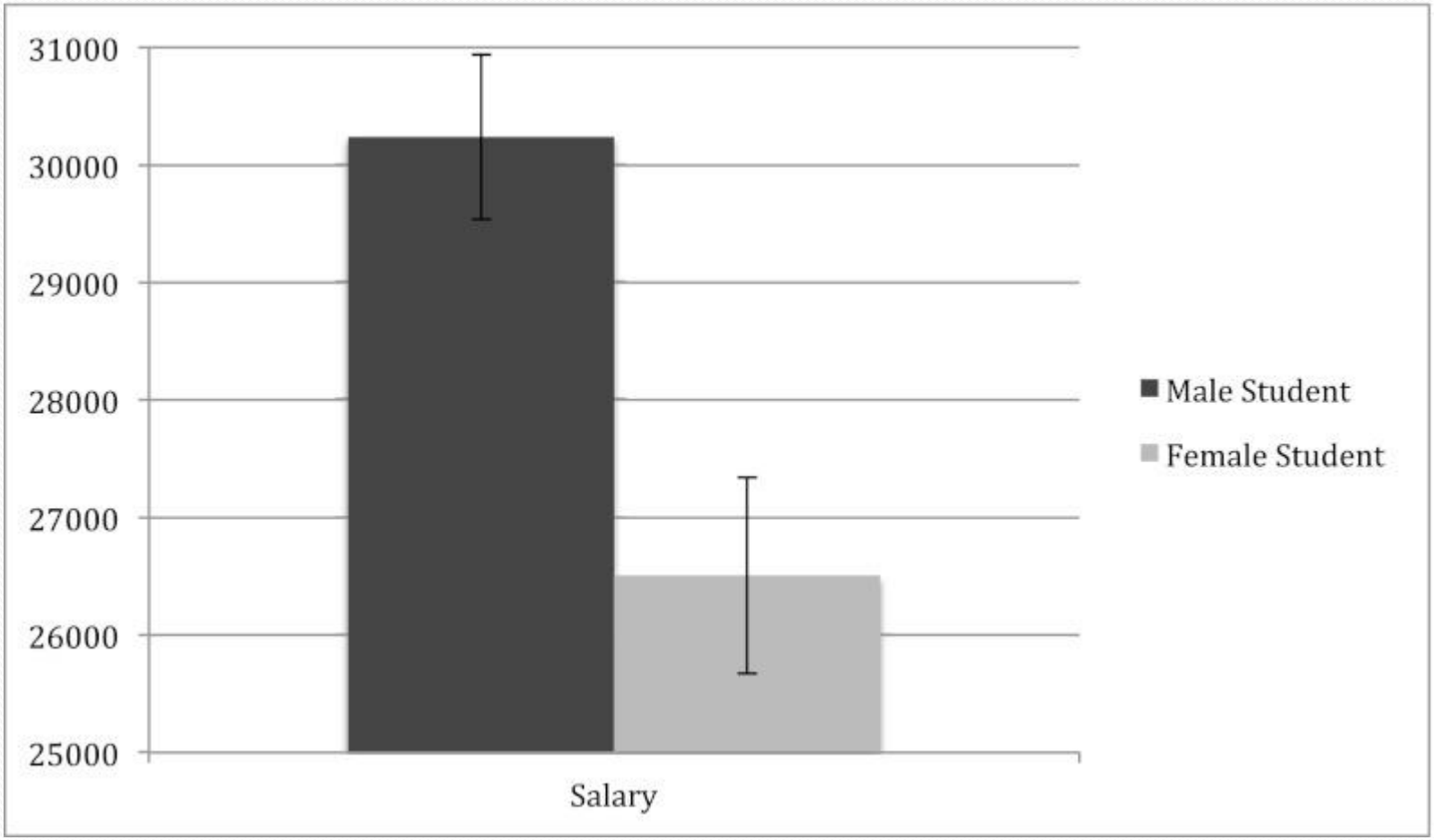
Starting Salary by Gender



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Tidbits for Leaders: What the Data Show

- **Subjects will express less prejudice against African Americans if they are instructed to avoid prejudice** (Lowery and Harkin, 2001)
- **Evaluators exhibit less discrimination when the evaluation criteria is constructed first** (Uhlmann and Cohen, 2005)
- **Evaluators are more likely to rely upon underlying assumptions and biases when they cannot give sufficient time and attention to their evaluations** (Martell, 1991)

Discussion

- Identify two student diversity issues in your department and the approaches you have taken or can take to address them.
- Identify two diversity issues within your college/university and approaches that might be taken to address them.
- How will you know when success has been achieved?

Session Recap

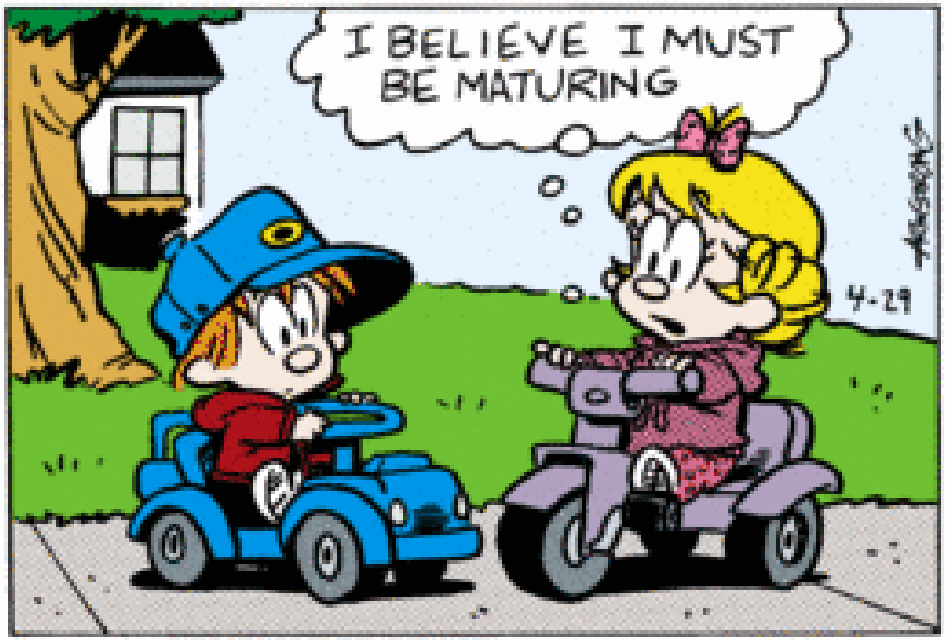
We have:

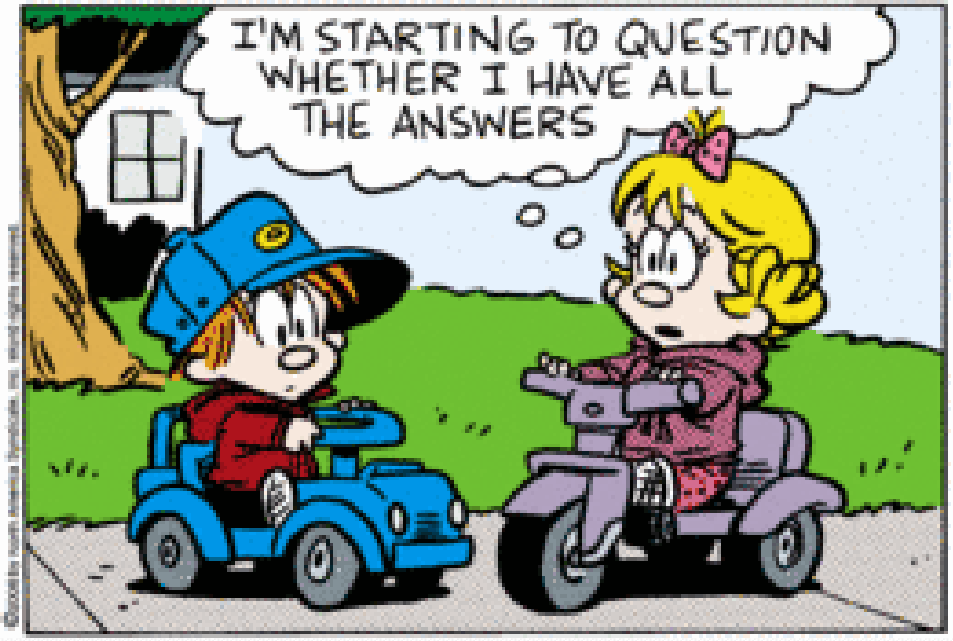
- Reflected on the benefits and challenges of diversity in physics
- Identified some research basis for unconscious bias and stereotype threat and articulated some implications of such studies
- Had discussions about how to address diversity issues
- Identified mentoring skills/techniques that improve student success
- Discussed strategies to address the challenges and benefits of diversity
- Reflected on a personal definition of diversity.

Closing Reflection

What are 1 or 2 elements of your conception of diversity that you had not considered before this session?

What role do you see for mentoring as a tool for creating a more inclusive department?


I BELIEVE I MUST BE MATURING
4-29


I'M STARTING TO QUESTION WHETHER I HAVE ALL THE ANSWERS

Acknowledgements

- Many students who taught me to listen
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- Dr. Christine Stanley – Texas A&M
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Thank You!