"IT'S LONELY!":
GENDER EQUITY PERSPECTIVES OF UMAINE FEMALE STEM UNDERGRADS

Dr. Janet Fairman, U Maine
& Dr. Mary Madden, U Delaware

March 31, 2015

1865 THE UNIVERSITY OF MAINE

Impetus for Study

- Our professional involvement in the Rising Tide/ Advance Grant at UMaine

- Dr. Madden's research in gender equity/ bias

- Personal interest

Research Basis

- Literature on gender equity and bias
- Findings from two earlier studies at U Maine:
  - female undergrads in engineering majors at UMaine in 2000 (Madden)
  - Chilly Climate Study with female undergrads in various disciplines (Allan & Madden, 2006)

Chilly Climate for Female Engineering Undergrads   (Madden, 2000)

- Findings
  - Many chilly behaviors by males peers and faculty

(e.g., dismissing, ignoring, sexual innuendos, disparaging gender comments, singled out, etc.)
    - Women feel lonely and discouraged
    - Behaviors are unspoken until another female in group tells a story to which another group member can connect
    - Behaviors go unlabeled by female students
    - Behaviors reflect cultural norms

Chilly Climate/ Classrooms: Comparison Study (Allan & Madden, 2006)

- Many chilling behaviors by peers and faculty are subtle, reflect cultural norms, and go unrecognized and unlabeled

- Women in disciplines where they are the minority are more likely to experience biased and inequitable behaviors

- Gender biased behaviors come from both male peers and faculty, but more likely to come from male peers and go unnoticed or ignored by professors and instructors

Common Chilly Behaviors

Peers
- Taking over leadership in groups
- Women do most of the work in a group
- Disparaging remarks about females
- Questioning competence
- Need to prove self
- Being interrupted or contributions ignored
- Take up more space, time and attention of professor
- Sexual comments, jokes, stories
- Women censor themselves in class

Faculty
- Sexual, joke, innuendos and stories
- Lack of women represented in the curriculum
- Not taking women seriously
- Ignoring females, calling more on males, or ridiculing contributions

Research Focus for Today

How do female STEM undergrads at UMaine describe their experience in programs where they are in the minority?

- What are the barriers? supports?

Research Study Design
(Fairman & Madden, 2014)

- STEM majors where women are a minority

- 4 focus groups: 3-Engineering, 1- math/physics

- 15 participants + 2 by email = 17 students

- 416 pages transcript

- Identifying themes and patterns in data

Theme: Feeling Invisible/ Ignored

- Male faculty not remembering female students' names
- Not taking female students seriously
- Not responding to their questions
- Male peers not talking to, interacting, or socializing with female students

Comments on Feeling Invisible:

- "There are professors, some of whom I've had multiple times, who I have to <u>continuously</u> re-introduce myself to."

- "I've had issues with a couple of the teachers not really addressing my questions and kind of thinking, like 'Oh, there's no way she can do this...'"

- "You have to prove yourself first.... Once you get the first test back, then people are like, 'Oh, ok, I'll talk to you now.'"

Theme: Being Singled Out

- Showing concern for how female students are doing   (i.e., implying they need special help)

- Drawing attention to the small number of women in class   ("_Lady_ _and gentlemen._")

- Asking female students in class "Do you understand this?" (_"It made me feel stupid."_)

Comments on Being Singled Out:

- "He [male professor] always will come and talk to us and be like, 'I just want to make sure that you're doing okay, as a woman in this field.' And that's just, really uncomfortable."

- "Like one of my math classes I'm in now, he's only done it a couple of times but, so there's like two guys in the class that just answer the questions all the time. So, on a couple of days he's been like, 'Okay, now like let's hear from the girls.' And there's only 3 or 4 girls in the whole class."

Comment on Being Singled Out:
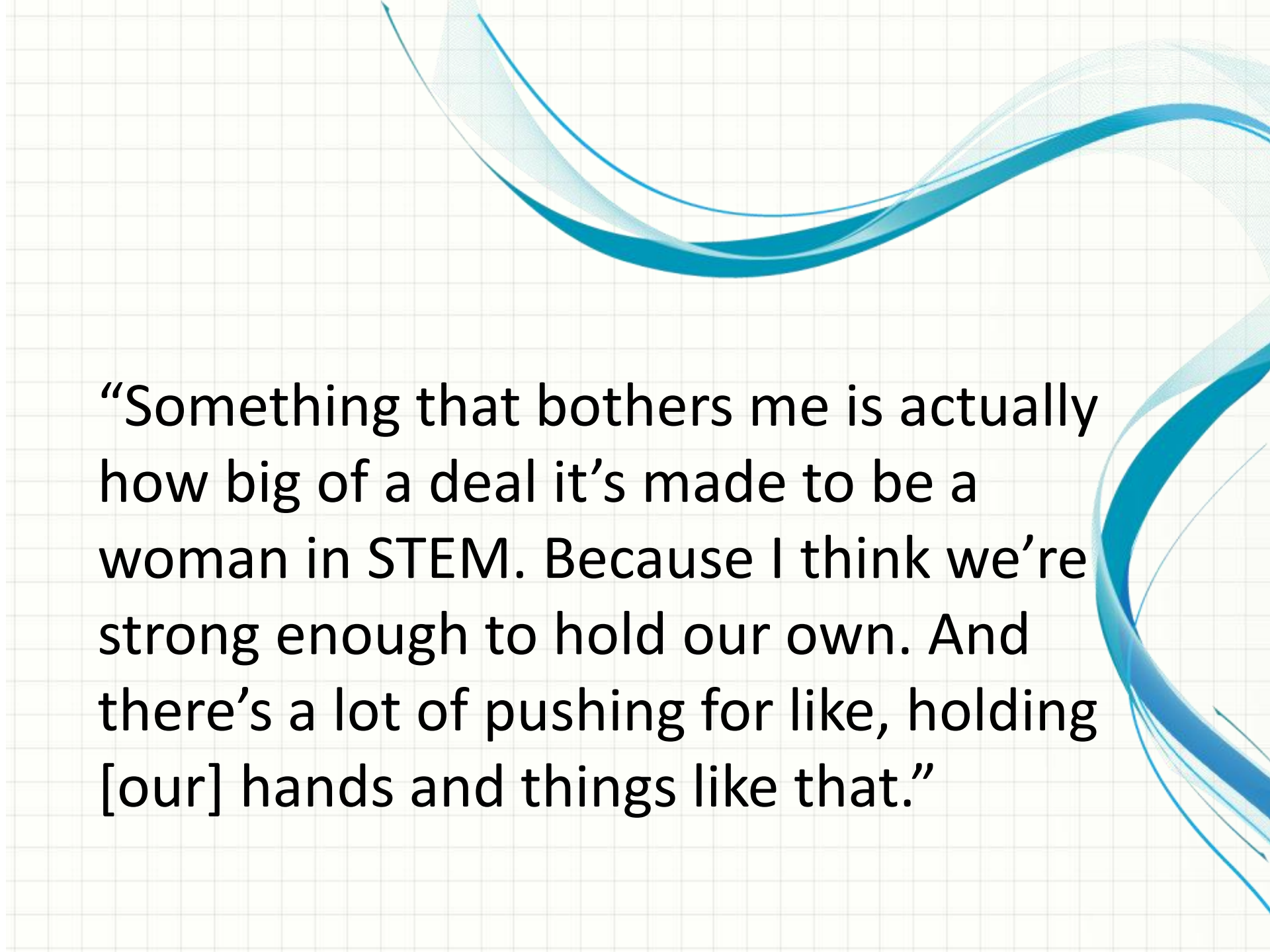
- "I definitely think that, I mean, professors that single out women would be like, 'Do you understand this? Do you get, do you have any questions?' In front of the class is a big no-no. I've seen it only a couple times. But I mean … It made me feel pretty stupid."

Implicit & Overt Gender Bias

- Showing surprise women are in STEM program
- Surprise that a female student is succeeding academically (e.g., first to finish a test)
- Sexist/ sexual jokes, in class and outside
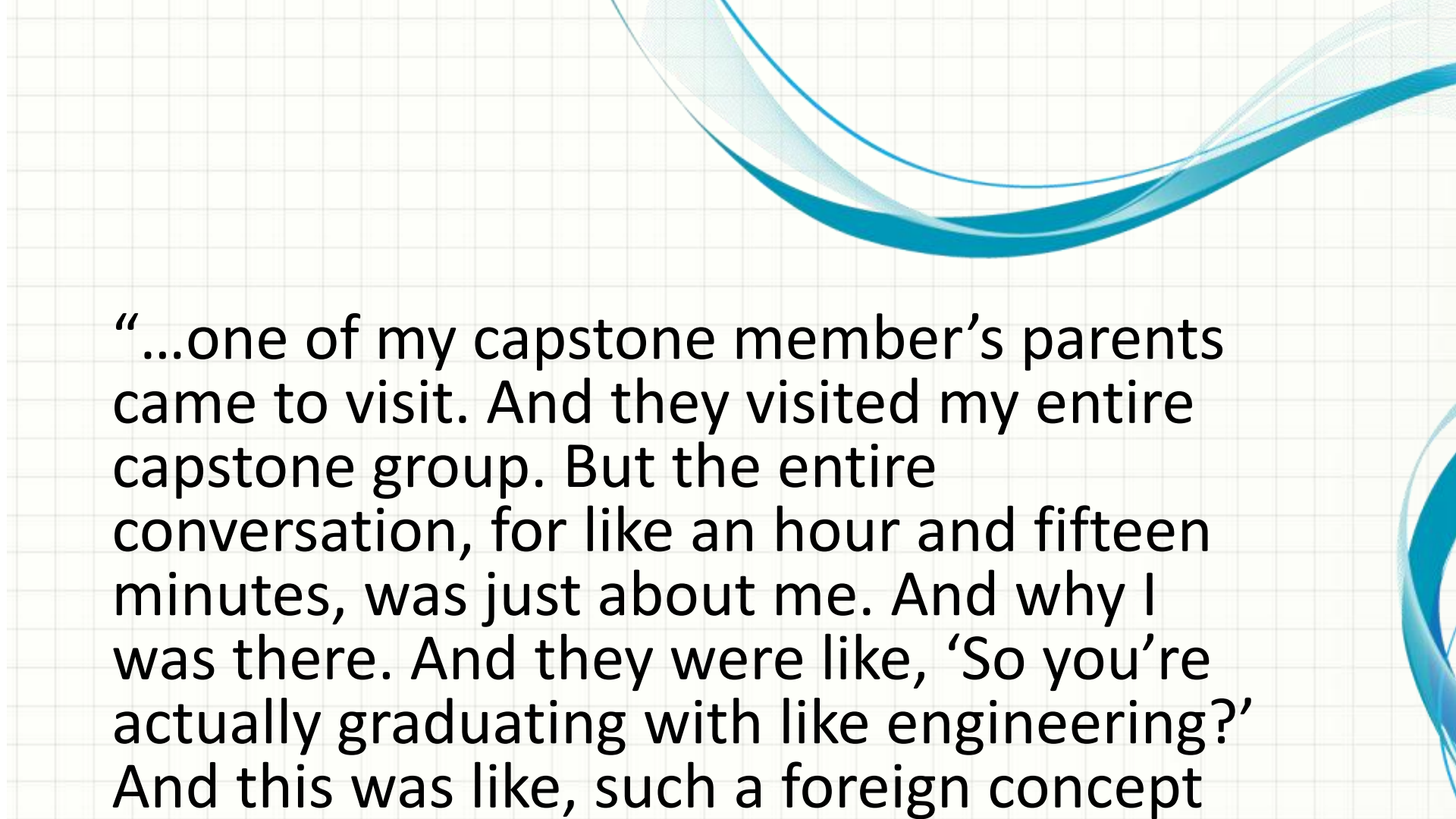- Referring to a woman's appearance

COMMENTS ON IMPLICIT BIAS

"Something that bothers me is actually how big of a deal it's made to be a woman in STEM. Because I think we're strong enough to hold our own. And there's a lot of pushing for like, holding [our] hands and things like that."
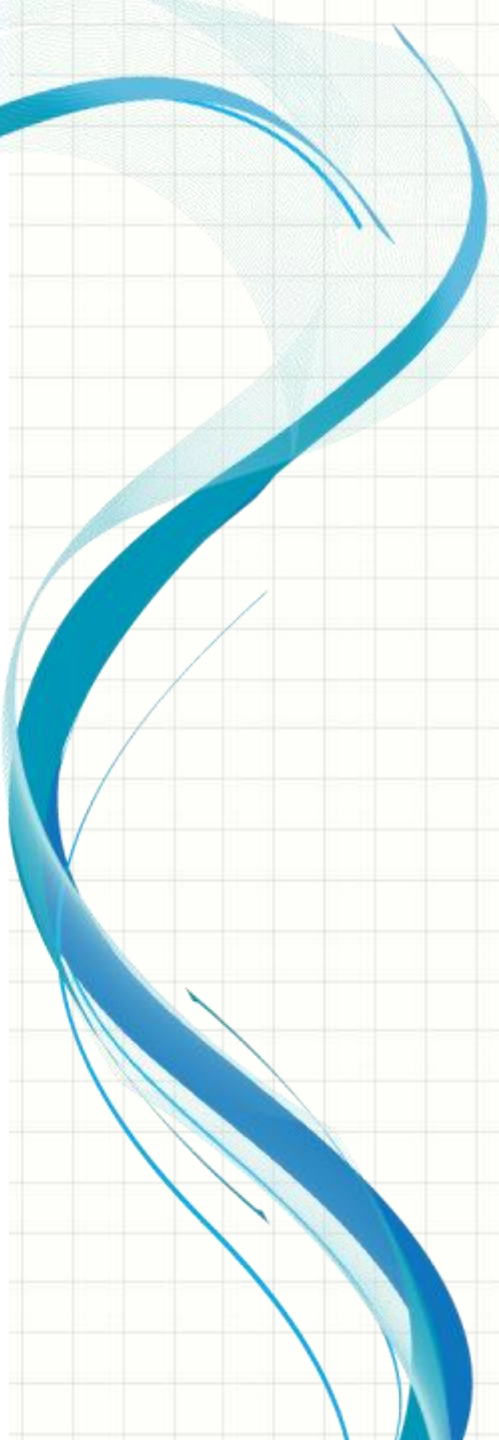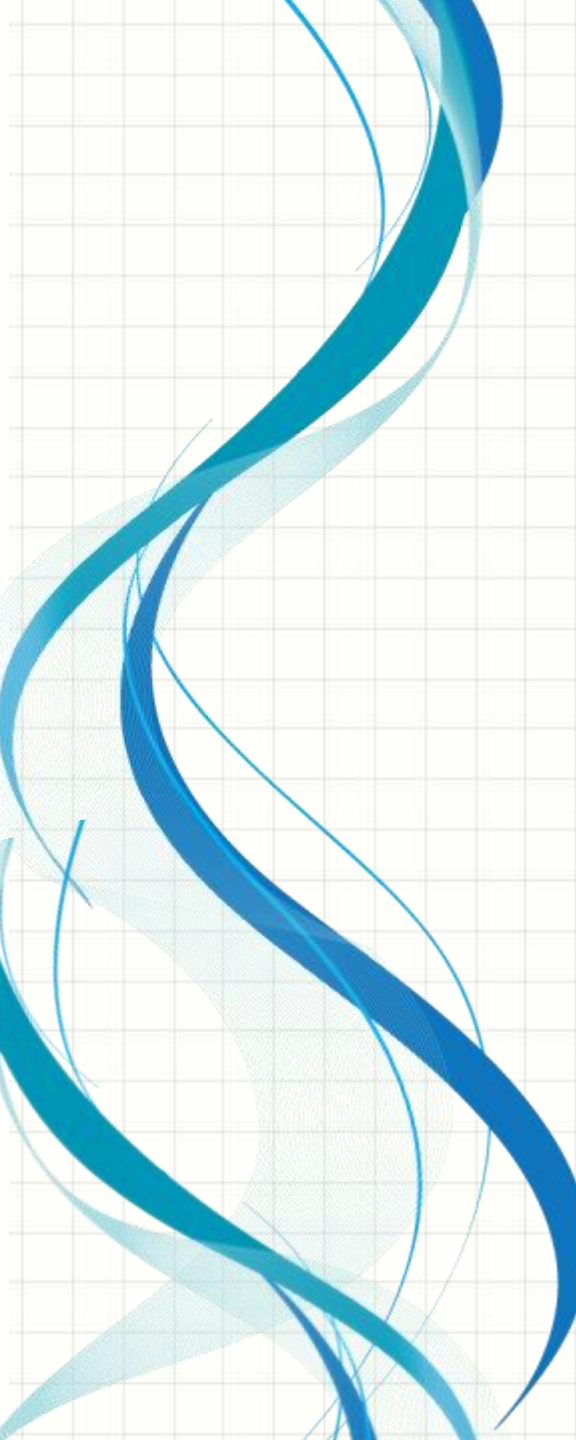
"…one of my capstone member's parents came to visit. And they visited my entire capstone group. But the entire conversation, for like an hour and fifteen minutes, was just about me. And why I was there. And they were like, 'So you're actually graduating with like engineering?' And this was like, such a foreign concept to them! …. I would definitely say I was discouraged when that parent came into my capstone group."
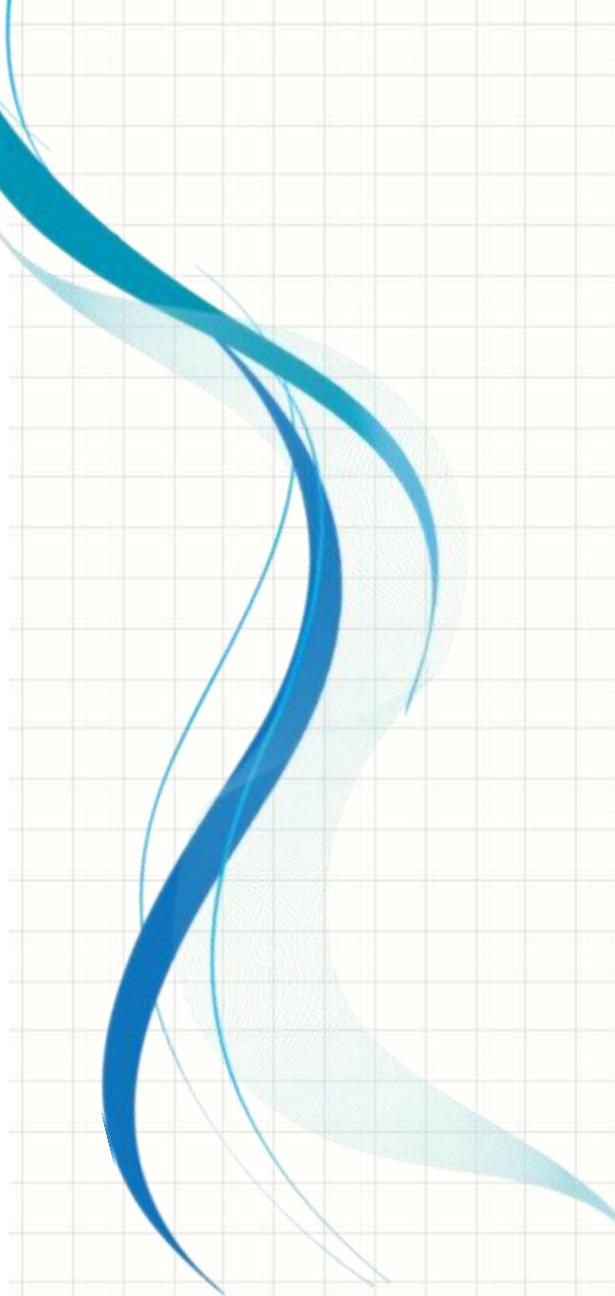
COMMENTS ON OVERT BIAS

"I'm currently in a class that makes me, it makes me mad. It makes me mad because they're trying to make me uncomfortable. [Prof. X] is extremely sexist and racist. And it really upsets me…. And every day he comes in and he has jokes. And 95% of the time they're sexual jokes."

"The professor waited for a day that I had to miss class to [make a sexual joke in reference to an industrial process]. He was like, 'Well, I knew you would all chuckle, so I had to wait until [female student] was not in class.' And I'm still hearing about that comment to this day."

ROLE OF FACULTY IN SHAPING CLIMATE/ CULTURE

"...the teacher sets the precedent for the classroom environment. And I definitely think if they're uncomfortable with the fact that you're a woman, everyone else cues into that."

Theme: "It's Lonely!"

- Surprised to be a minority in their program
- Numbers dwindle with time as women change majors, leave program
- Few or no female faculty to mentor
- Feeling ignored or excluded by male faculty, students
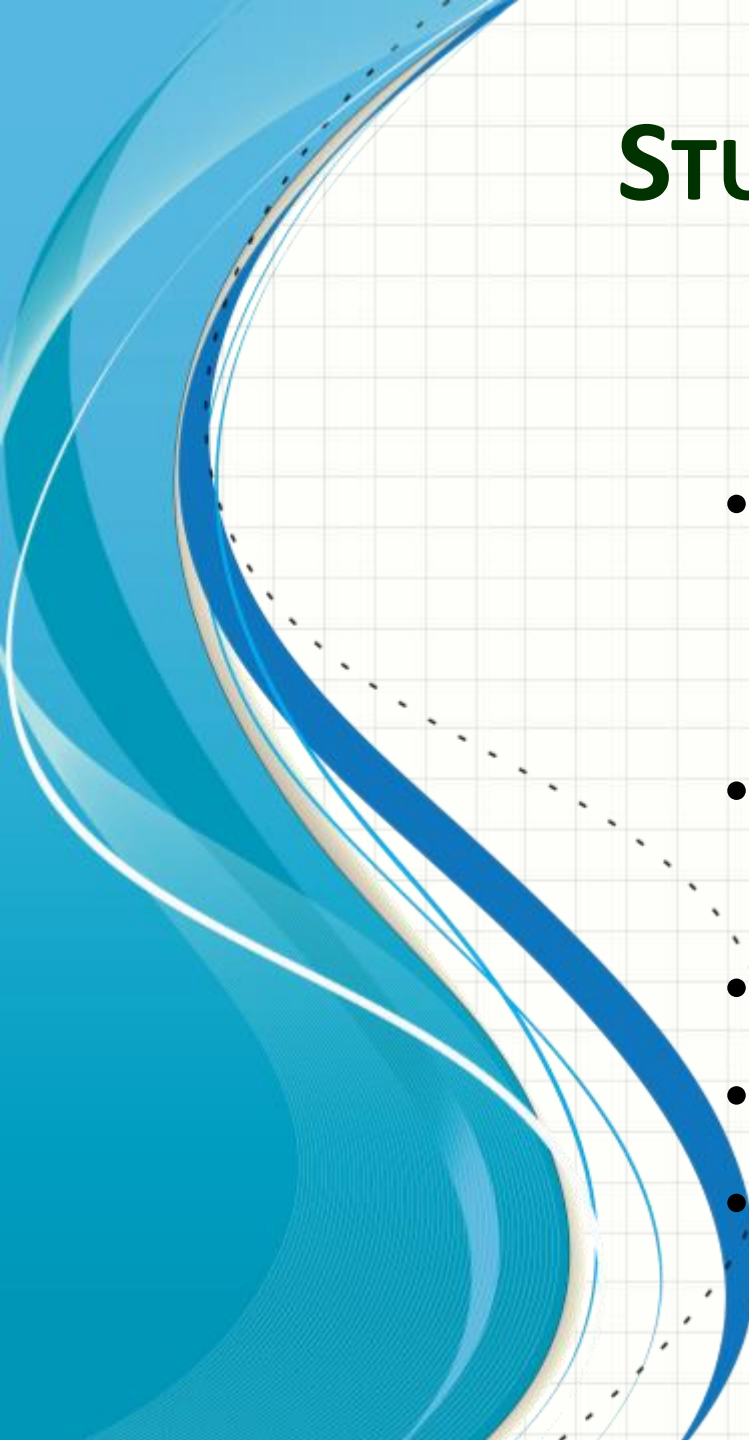- Feeling supported through study groups, SWE

On Feeling Lonely in the Minority:

- "I've definitely been in classes where I'm the only one [woman], and it's, it's super lonely."

- "I feel like most of the people who were in my major my first year aren't there anymore. It's just a few people."

- "I remember it being surprisingly hard to find partners for projects….When we would pair up for things, I always found that despite sticking out, people didn't want to approach me. Which always made me feel more like an outsider."

On Feeling Excluded:

- "I think you have to learn not to care, too. Because it is lonely, and it is hard to walk into class and <u>all</u> the guys are talking about what a fun night they had the night before over at someone's house for dinner and like, you weren't invited. And that happens every single day. And so after awhile, it really accumulates…. It's four years now! Every single day!"

Students' Suggestions to Reduce Gender Divide:

- Conduct "ice breakers" like name games to help students get to know each other at start of course

- Conduct games, team building activities during orientation

- Assign seats in class

- Assign groups

- "Set the tone" for classroom culture

Students' Suggestions to Provide Encouragement:

- Include information about women scientists in courses (textbooks often ignore!)

- Invite more female scientists for guest seminars

- Acknowledge, recognize students' academic performance and success

- Give students tour/ introductions to dept. and college administrators, staff

- Provide male/ female bathroom facilities

Students' Suggestions to Address Bias:

- Provide training to faculty on gender equity and bias

- Make course evaluations truly anonymous (online survey?), omit gender variable

- Provide a faculty advocate or liaison for students to share concerns

- Deal effectively with reported problem

IMPLICATIONS

- Recruiting, retaining female students
- Feeding the pipeline for female faculty
- Preparing students to work together without gender bias in industry & academia

CONCLUSIONS

- Findings more positive in 2014 than 2000
- Majority of participants in 2014 planned to continue in their field
- Still room for improvement!
- Culture/ gender bias incidence vary across programs and departments

Questions to Pursue:

- To what extent is gender bias a problem in my department/ program?

- How can I consciously pay more attention to this?

- How can we take collective responsibility for reducing gender bias and building a collegial climate?