

# **An Uncomfortable Conversation: Bias (Both Unconscious and Conscious) and Harassment in Science: How We Can and **MUST** Do Better**

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**The views presented here in no way represent any employer of mine, nor any federal agencies. Let's also let all Scientific Societies off the hook, so just blame this entire presentation on me... you're welcome, world.**

# Agenda: Day 1: The Problems

- A brief overview of the topics to cover (Unconscious Bias, Conscious Bias, and Harassment), and recent literature/studies within the fields.
- The preliminary results of the CSWA Survey
- A practical 'What would you do?' activity to gain an understanding of women's issues in STEM.
- **Trigger Warning:** the content of today's lecture will include some uncomfortable conversations and examples of harassment and abuse.

# Agenda Day 2: The Solutions

- Implicit Bias awareness
- Techniques for mitigating implicit bias
- Accountability
- Reporting
- Tips for life-long Allyship

# The Problems

**Unconscious (Implicit) Bias**: the attitudes or stereotypes that affect our understanding, actions, & decisions in an unconscious manner.

This occurs regardless of the dominant group:

- Gender: Both Men and Woman downplay Women's contributions
- Race: Both whites and minorities downplay minorities' contributions

**Conscious (Explicit) Bias**: an intentional prejudice in favor of or against one thing, person, or group compared with another usually in a way that's considered to be unfair.

**Sexism**: a conscious bias: prejudice, stereotyping, or discrimination on the basis of sex.

**Racism**: a conscious bias: prejudice, stereotyping, or discrimination on the basis of race.

There are many other types of discrimination (including ableism, homophobia, xenophobia, religious intolerance, etc.), however, the primary examples in this particular presentation are sexism and racism.

**However, all types of discrimination and intolerance lead to unwelcomed conduct and should be avoided.**

# The Problems

**HARASSMENT**: unwelcome conduct that is based on race, color, religion, sex, national origin, age, disability or genetic information.

Why would these (unconscious bias, racism, sexism, and harassment) be a problem in this community?

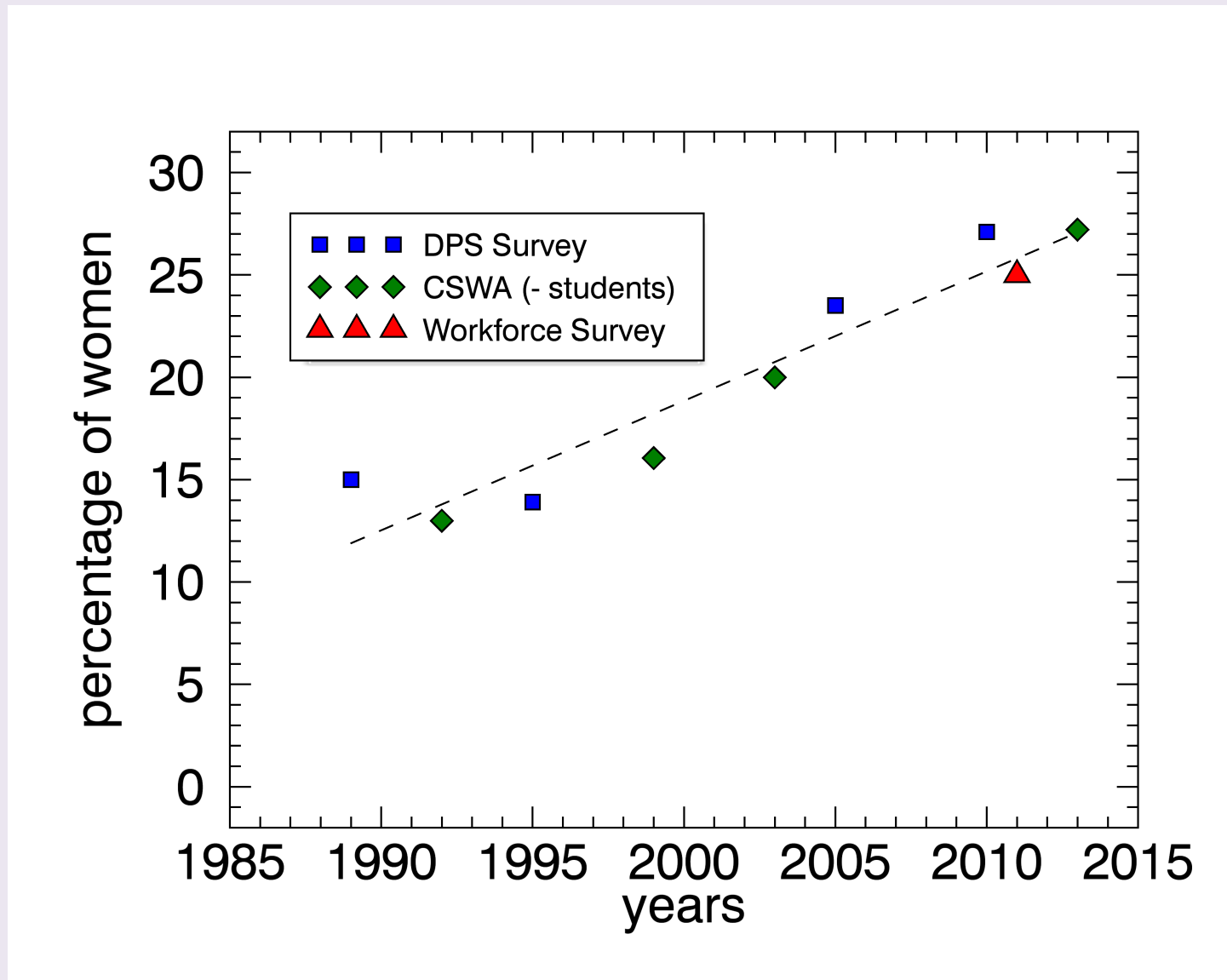
- Power Dynamics are extreme here
- High levels of stress occur
- The workplace is untraditional
- The current most-used system to protect those being harassed, the whisper culture, isn't working
- Our community is steeped in unconscious bias and is set such that white, cisgendered, heterosexual, able-bodied men are the dominant group by a larger percentage than the general population
- It's a difficult problem to see when you're not the one being harassed
- The evidence is anecdotal

# What do these **PROBLEMS** look like?

- Teams of male and female professors (search committee) evaluate candidates with identical application packages aside from the name. Brian preferred 2:1 over Karen [1].
- When going for tenure, reservations expressed 4xs more for Karen than Brian [1].
- When sending identical resumes, Lakisha had to send 15 for a call back, compared to 10 for Emily. Lakisha needed 8 more years of experience to get as many call backs as Emily. The higher the resume quality, the larger the gap for callbacks [2].

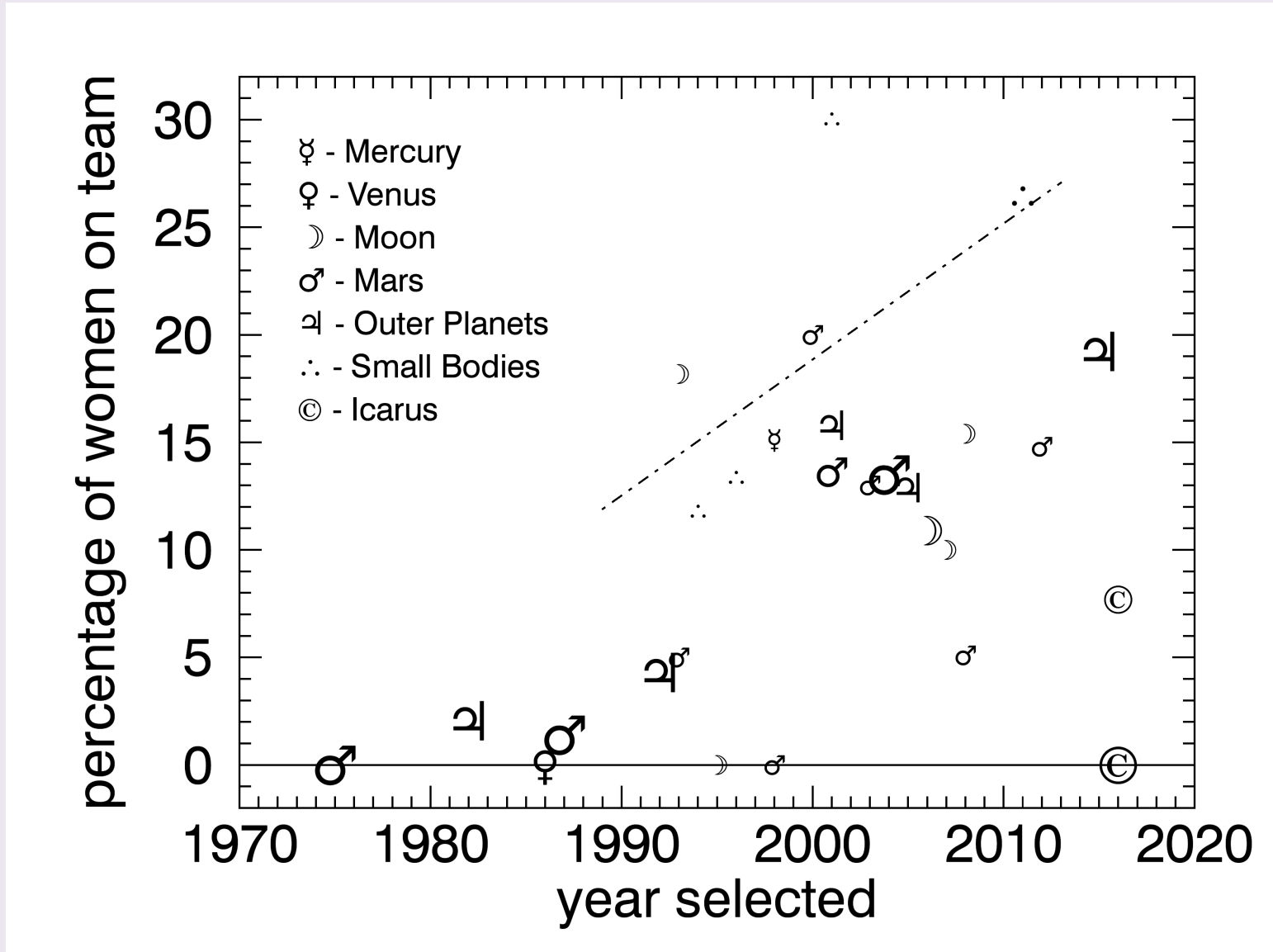
*See Patricia Knezek's talk from DPS on Addressing Unconscious Bias, which will soon be posted on the Women in Planetary Science Blog!*

# What do these **PROBLEMS** look like?



Women in Planetary Science [3]

# What do these **PROBLEMS** look like?



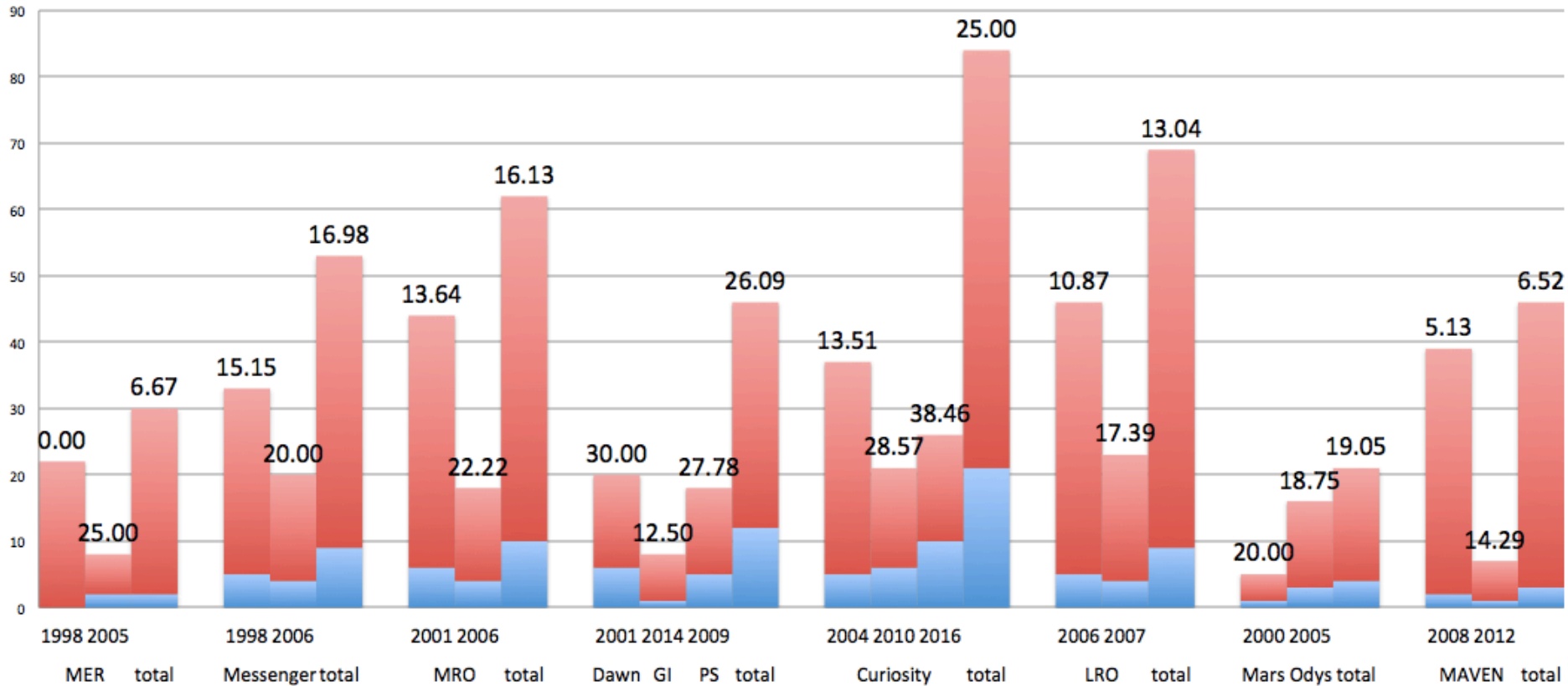
Women on Planetary Science Missions [3]



# What do these **PROBLEMS** look like?

## Women on Spacecraft science teams

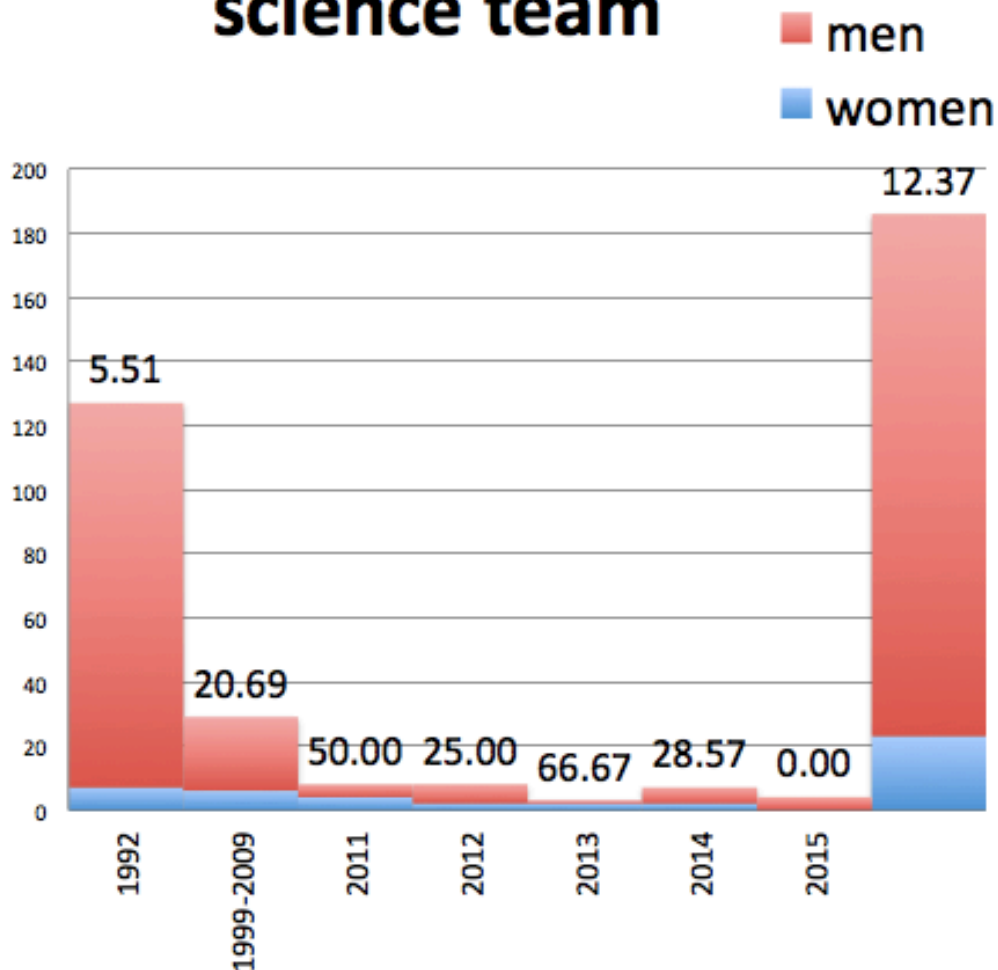
men women



Women on Planetary Science Missions [3]

# What do these **PROBLEMS** look like?

## Women on the Cassini science team

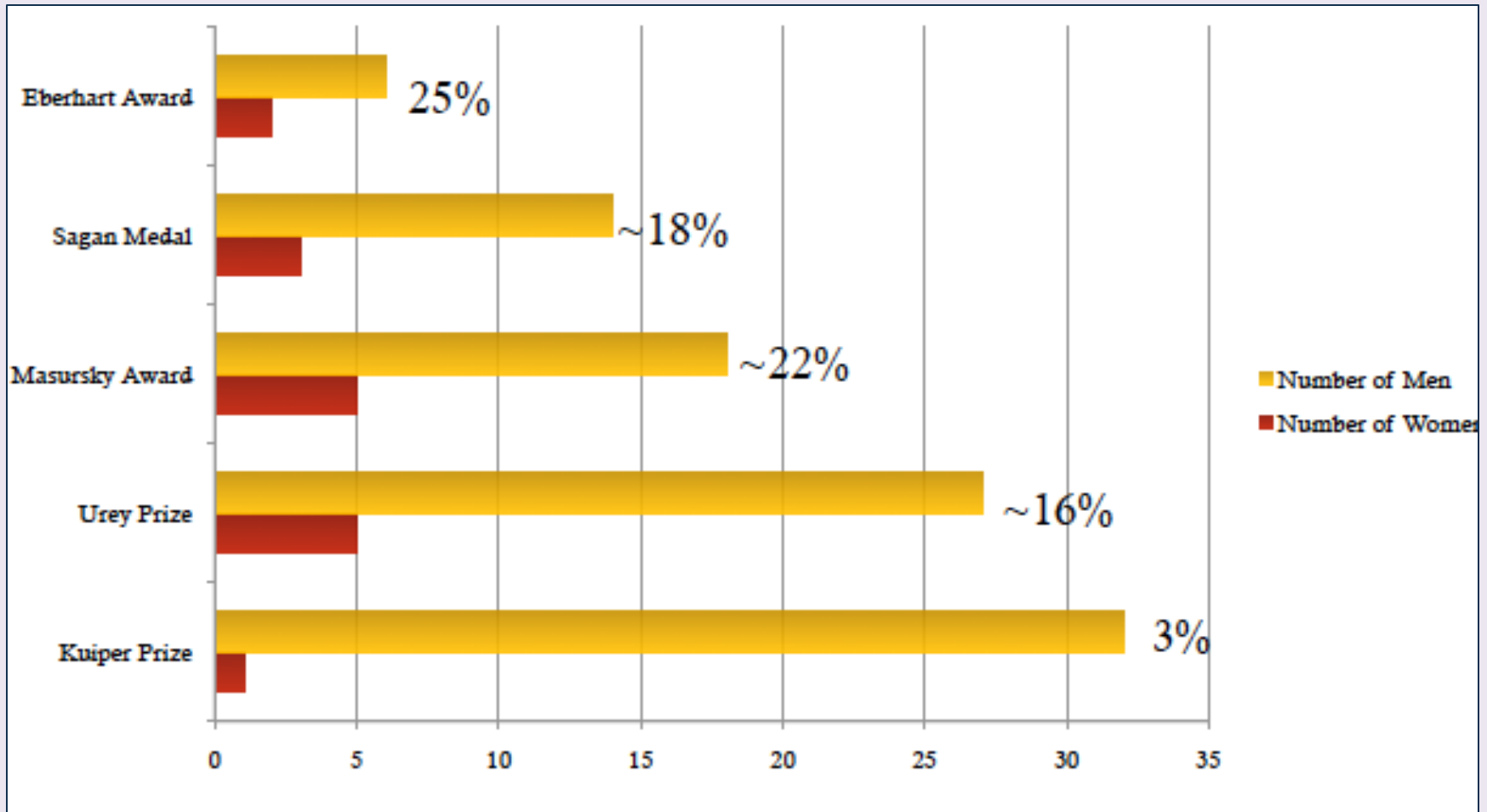


Conclusions from J.Rathburn [3]:

- Since 2001, percentage of women on missions has remained flat (best fit slope = -0.07)
- 2001-2016, average percentage of women on teams 15.8%
- PS (and GI) programs selected a higher percentage of women than original teams (24% average)
- A single PS call cannot substantially change the percentage of women on a team
- Percentage of women on most teams remains substantially below the percentage in the field

# Women on Planetary Science Missions [3]

# What do these **PROBLEMS** look like?



Women winners of DPS awards[4]

# What do these **PROBLEMS** look like?

- DPS 2016
- Women were 9% of scientific plenary speakers, 17% of total plenary speakers



DPS Plenary Speakers [4]

# What do these **PROBLEMS** look like?

- Science syllabi using gendered language that not only can show women as incompetent, but normalizes masculine behaviors, belief systems, and priorities [5].
- Several studies of STEM fields finding implicit bias related to both gender and race limits opportunities in mentorship [6], hiring [7], and opportunities in the classroom [7-10].
- Women of color faculty in STEM are more likely to experience the dominant culture of their disciplines as outsiders, with their views validated less than the dominant group [11].
- The number of women of color science faculty has recently decreased, even while the number of white women science faculty has increased [12].

# What do these **PROBLEMS** look like?

- Within physics and astronomy, women generally, and women of color specifically, are isolated and experience microaggressions in the workplace [13, 14].
- Women of color must employ multiple navigation strategies in order to persist in physics and astronomy, using time and energy that could have increased work productivity [15].
- Women of color and white women are also underrepresented in the physical sciences to a far greater degree than the social or biological sciences [16].

# What do these **PROBLEMS** look like?

- Discrimination and harassment have been found across several other studies to increase inflammation, waist circumferences, psychosocial distress, and physical pain [17-24]. The accumulation of even minor distresses across the work day can, over time, have profound physical and mental consequences [25].
- In particular, studies of workplace behaviors have shown that those receiving negative feedback in line with negative stereotypes display more disengagement [26], and those targeted for harassment express greater job turnover intentions [27].

# The CSWA Survey on Workplace Climate

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2. University of Illinois, Urbana-Champaign, IRB approval (#15354, University of Illinois)

With Gracious Support from the American Astronomical Society's Committee on the Status of Women in Astronomy (AAS CSWA)



# The CSWA Survey of Workplace Climate

- We recruited 426 participants for an online survey
- Questions were confined to experiences in their current and previous positions within the past 5 years only

# How often do you hear the following language from your **PEERS**?

**426  
Total**

**Negative comments about religion or lack thereof**

**141**

**109**

**32**

**66%**

**Negative remarks about mental ability/disability**

**155**

**77**

**58%**

**Negative remarks about physical ability/disability or**

**152**

**74**

**57%**

**Transphobic remarks**

**66**

**Rarely**

**20%**

**Sometimes**

**Often**

**Comments about not acting "feminine enough" or**

**135**

**61**

**49%**

**Sexist remarks**

**180**

**145**

**82%**

**Racist remarks**

**161**

**55**

**52%**

**Homophobic remarks**

**159**

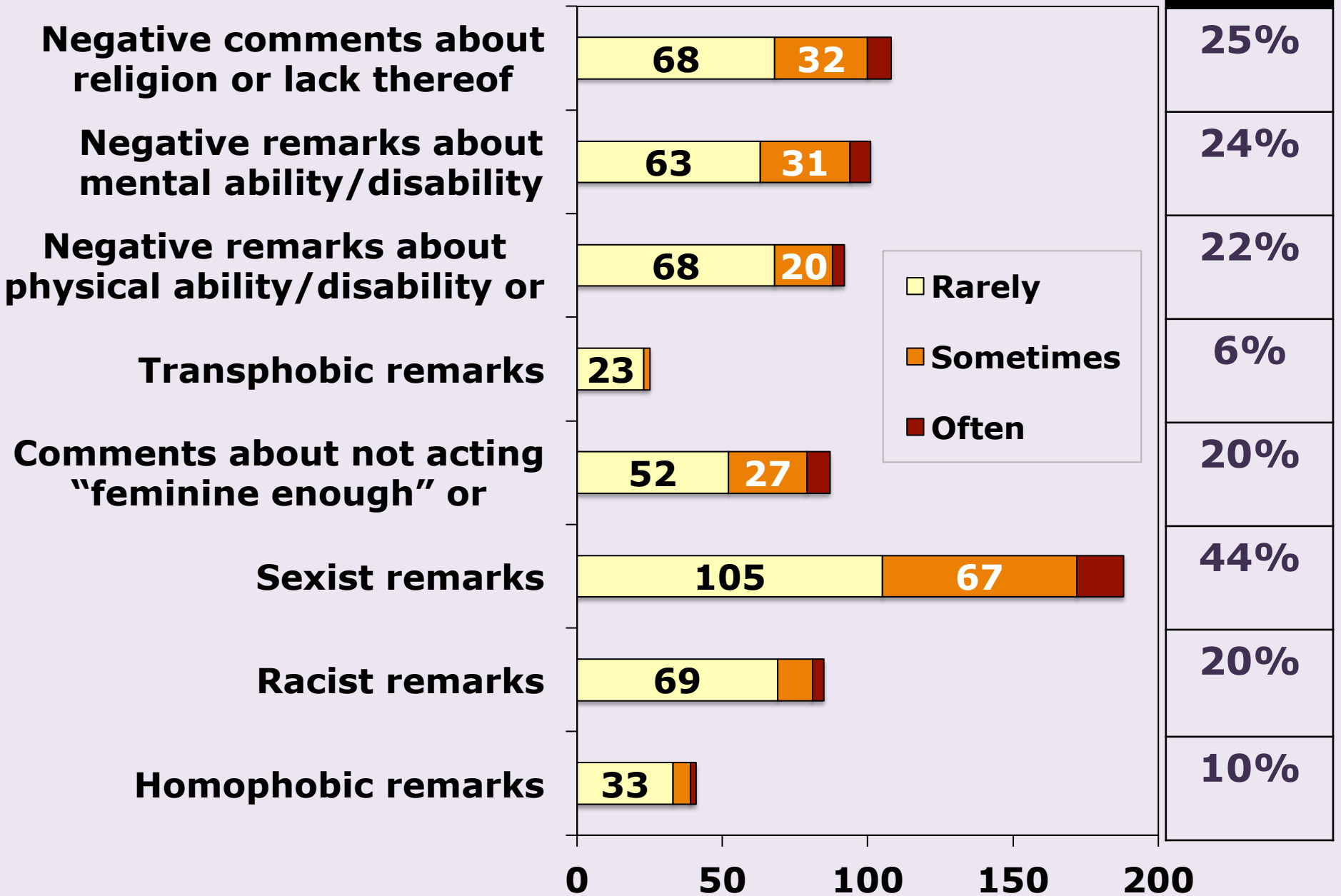
**29**

**45%**

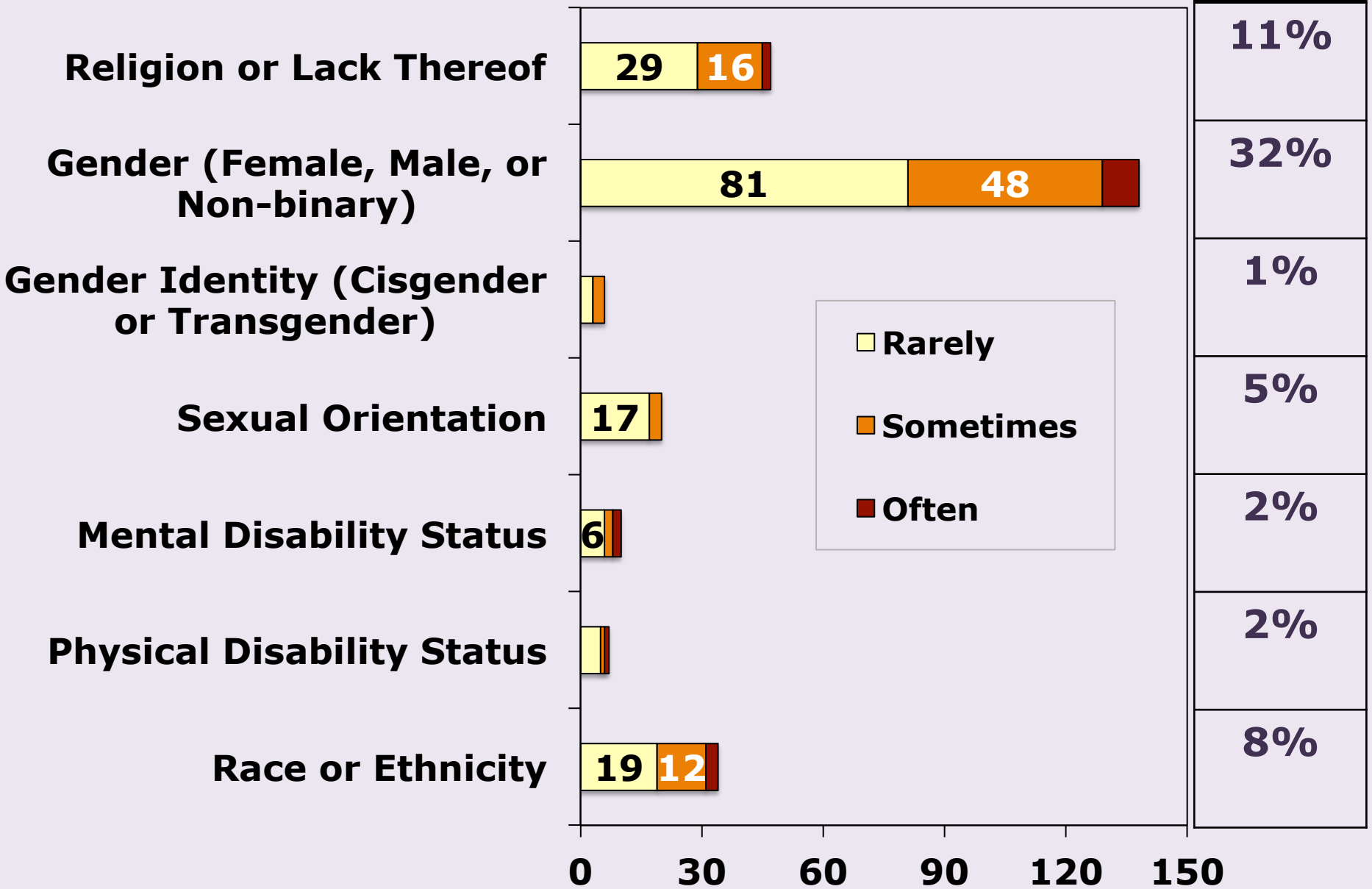
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# How often do you hear the following language from your **SUPERVISOR**?

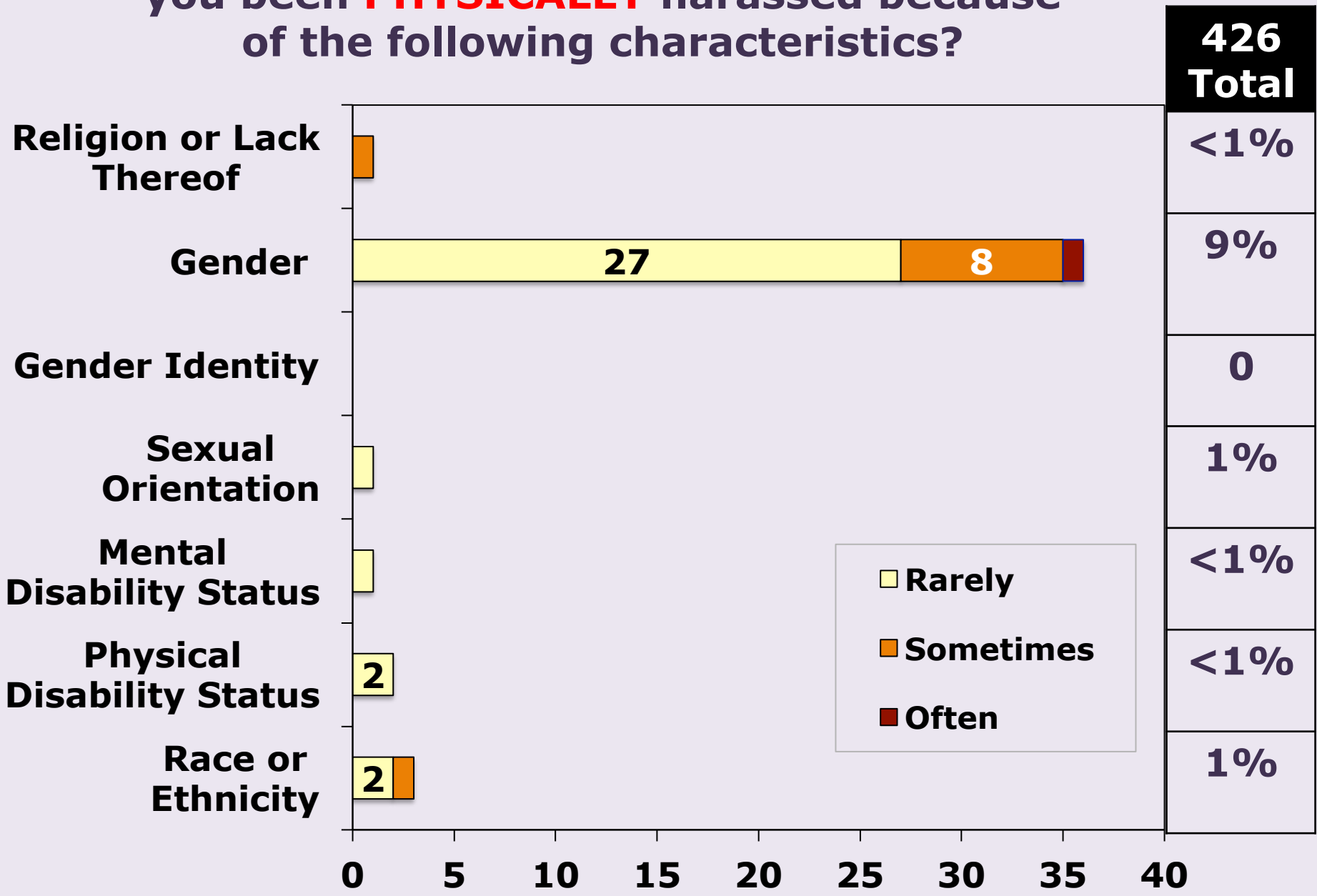
**426  
Total**



# In your current position, how often have you been **VERBALLY** harassed because of the following characteristics?



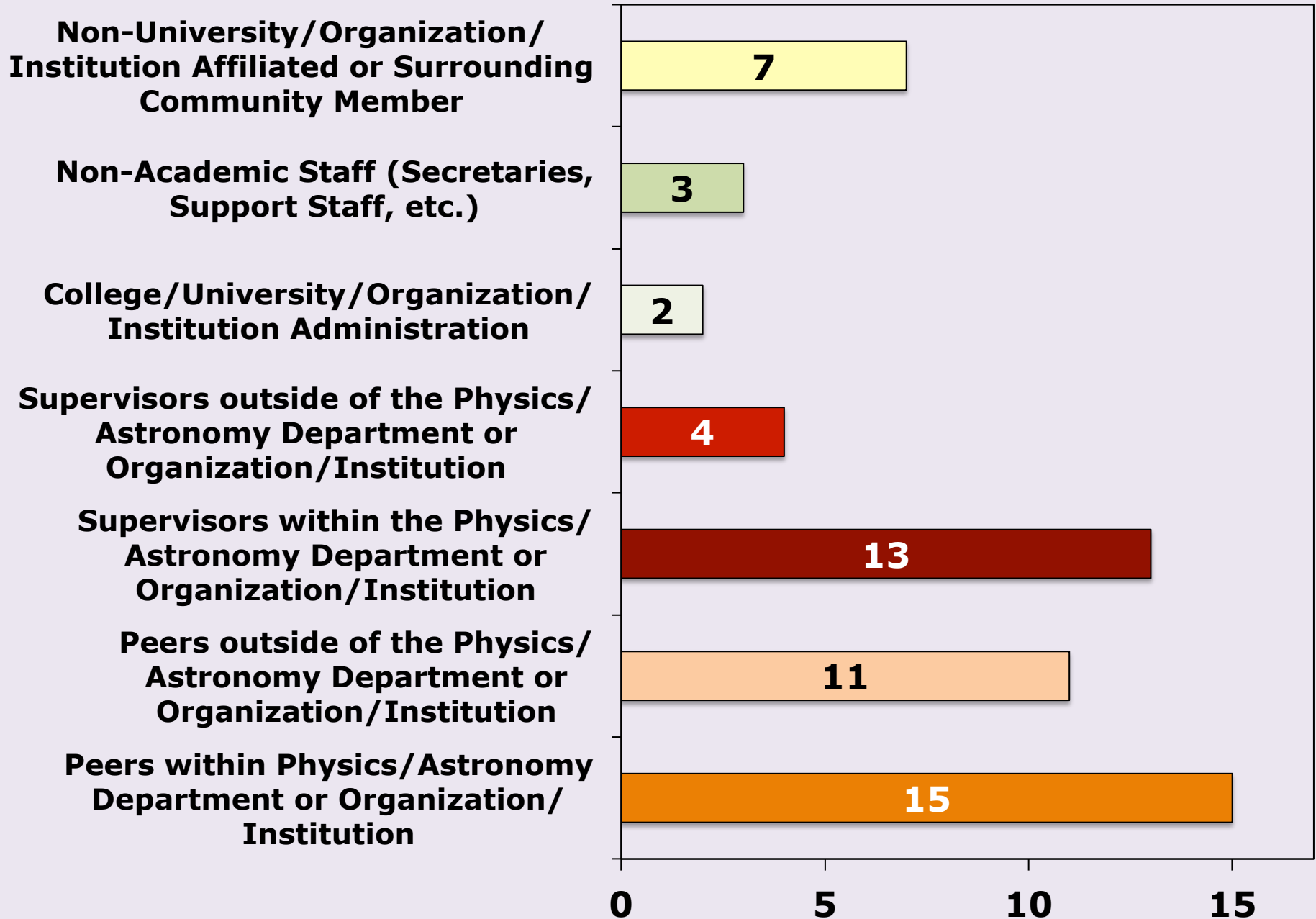
# In your current position, how often have you been **PHYSICALLY** harassed because of the following characteristics?



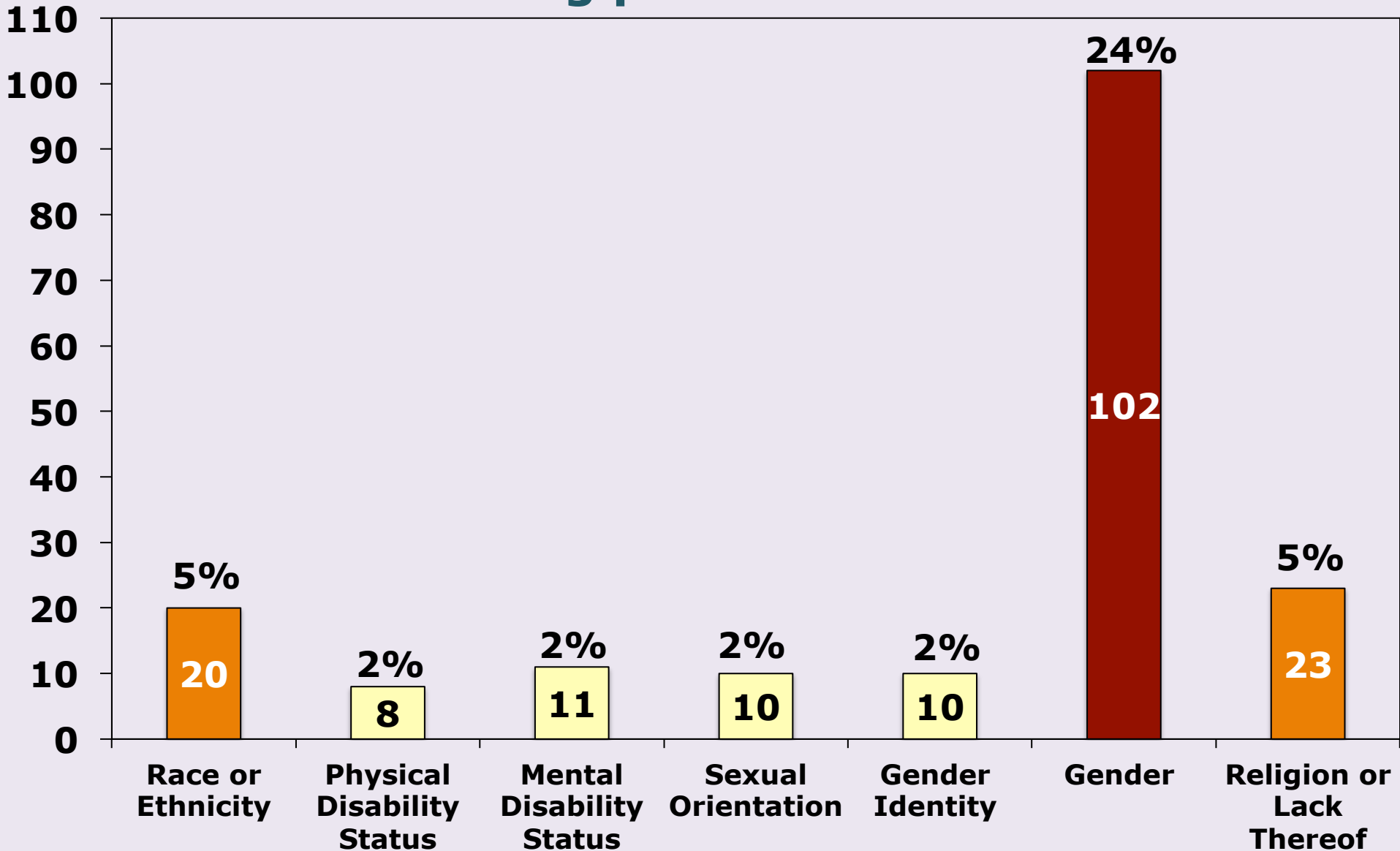
**426  
Total**

Rarely  
 Sometimes  
 Often

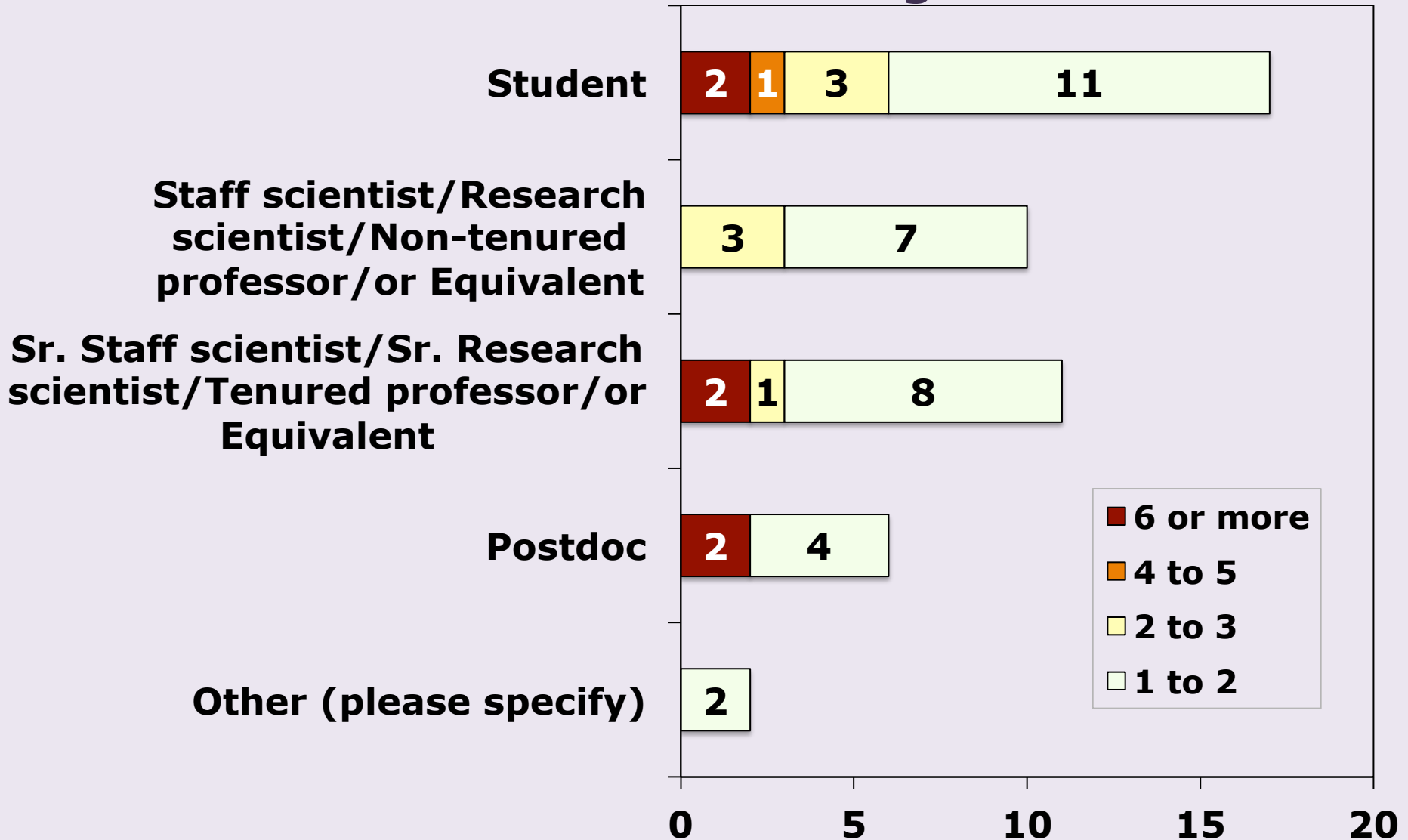
# What group(s) was the individual(s) that **PHYSICALLY** harassed you a member of?



# In your current position, do you feel or have you ever felt unsafe because of any of the following personal characteristics?



# In your current position, how many classes/meetings/conferences/field work/opportunities/etc. have you skipped per month because of feeling unsafe?





# Survey Preliminary Conclusions

- Scientists in the astronomical and planetary science communities experience and witness inappropriate language, verbal harassment, and physical assault.
- Inappropriate comments, harassment, and assault lead to a number of scientists feeling unsafe in their workplaces, and pursuing fewer scholarly opportunities as a direct result of these experiences.

# Day 1: Literature

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4. Knezek, P. Professional Culture and Climate: Addressing Unconscious Bias, 2016; 315, 48<sup>th</sup> Annual Division for Planetary Sciences Conference.
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# Day 1: Literature

7. Moss-Racusin CA, Dovidio JF, Brescoll VL, Graham MJ, Handelsman J. Science faculty's subtle gender biases favor male students. *Proceedings of the National Academy of Sciences*. 2012;109(41):16474-9.
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## Day 1: Literature

13. Barthelemy R, McCormick M, Henderson C. Barriers Beyond Equity: An Exploratory Study of Women Graduate Students' Career Pathways in Astronomy. *International Journal of Gender, Science and Technology*. 2015;7(1):57-73.
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# Day 1: Literature

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# Day 1: Literature

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# Additional Resources

- Committee on the Status of Women in Astronomy's Anti-Harassment page:  
<http://www.aas.org/cswa/harassment.html>
- Committee on the Status of Women in Astronomy's Unofficial Blog:  
<http://womeninastronomy.blogspot.com>
- Women in Planetary Science's Blog:  
<http://womeninplanetaryscience.wordpress.com/blogroll/>
- Committee on the Status of Minorities in Astronomy's Unofficial Blog:  
<http://astronomyincolor.blogspot.com>
- Ally Blog Post by Stephen Rinehart:  
<http://womeninastronomy.blogspot.com/2014/03/guest-post-sometimes-being-good-isnt.html>
- Resources when all else fails:  
<http://www.aauw.org/resource/sexual-harassment-in-the-workplace-additional-resources/>
- Rape, Abuse and Incest National Network page on Sexual Harassment:  
<https://rainn.org/get-information/types-of-sexual-assault/sexual-harassment>
- 10 Things All 'Allies' Need to Know by Jamie Utt:  
<http://everydayfeminism.com/2013/11/things-allies-need-to-know/>
- How to Be an Ally:  
<https://theantioppressionnetwork.wordpress.com/allyship/>

**Be the change**

- **Last thoughts of the day:**

- “Every time we liberate a woman, we liberate a man.”  
Margaret Mead
- “If you asked me to name the greatest discoveries of the past 50 years, alongside things like the internet and the Higgs particle, I would include the discovery of unconscious biases, and the extent to which stereotypes about gender, race, sexual orientation, socioeconomic status, and age deprive people of equal opportunity in the workplace and equal justice in society.” Prof. Nancy Hopkins



# Agenda Day 2: The Solutions

- Implicit Bias awareness
- Techniques for mitigating implicit bias
- Accountability
- Reporting
- Tips for life-long Allyship

# The Problems

**Unconscious (Implicit) Bias**: the attitudes or stereotypes that affect our understanding, actions, & decisions in an unconscious manner.

This occurs regardless of the dominant group:

- Gender: Both Men and Woman downplay Women's contributions
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There are many other types of discrimination (including ableism, homophobia, xenophobia, religious intolerance, etc.), however, the primary examples in this particular presentation are sexism and racism.

**However, all types of discrimination and intolerance lead to unwelcomed conduct and should be avoided.**

# The Solution

Why is a solution needed? And why should we be the community to fix this greater societal issue?

- Human Decency
- Because it's 2016
- Because we're currently in the spotlight and forefront of this issue
- Because we're some of the most intelligent people of the planet and we can do better
- Because we brag about wanting to be diverse and inclusive
- Because the science in this field is being directly impacted

**HUMAN DECENCY!**

## How to Make it STOP: Accountability

- **EVERYONE** here can work within their universities, departments, sub-fields, and professional societies to discuss what they can do to provide a safe, inclusive environment that is conducive to our scientists being able to do the best science possible, as a group of the best people possible.

# How to Make it STOP: Awareness & Action [4]

- Discuss how Implicit Bias affects your daily work efforts
  - Resumes, Job credentials, Fellowships, Hiring, Awards, Promotions, Proposal Reviews
  - Take the Implicit Bias Test:  
<https://implicit.harvard.edu/implicit/>
- Work to Create Policies that can mitigate Implicit Bias (Bauer & Baltes, 2002, *Sex Roles* 9/10,465)
  - Decrease time pressure & distractions in evaluation process
  - Rate on explicit criteria that were determined ahead of time.
  - Point to specific evidence supporting judgments.

# How to Make it STOP: Awareness & Action [4]

- Bystander Training: <http://stepupprogram.org> (From UA)
- Gender Bias Calculator: <http://www.tomforth.co.uk/genderbias/>



## Gender bias calculator

This calculator was inspired by this [AWIS blog](#) post on gender biases in recommendation letters. The blog post and [the scientific paper](#) it is based on also explain why this gender bias is important. I am grateful to [Dr. Karen James](#) for bringing to my attention and leading me to examine my own written recommendations.

Try an example!

Melinda was one of the first users of my now widely-used and successful software, MetNetMaker. Her early bug reports and insightful suggestions were invaluable to making the product what it is today. I have not since worked with anyone so at ease communicating with those other scientific fields.

Female-associated words | Male-associated words

worked

insightful

suggestions

scientific

Force recalculate!

The screenshot shows the Step UP! website homepage. At the top, there is a navigation bar with 'HOME' and 'ABOUT' links. The main heading reads 'Step UP!' in a large, bold font. Below this, a prominent question asks: 'Has there ever been a time when you felt, or even knew, something was wrong and wanted to help but didn't?'. Underneath, it encourages users not to be passive bystanders and to learn about various topic areas. A list of these areas includes: Academics, Alcohol and Alcohol Poisoning, Anger, Depression, Discrimination, Disordered Eating, Gambling, Hazing, Relationship Abuse, and Sexual Assault.

# How to Make it STOP: Reporting Harassment

- Read the policy for your university, facility, or business to know what to do
- Document issues
- Write a statement or give a testimony to the Office noted in policy
- Efforts will be made as much as possible to ensure privacy in the issue
- At no point is the person, university, workplace, etc. allowed to retaliate against a harassment complaint
  - If the person becomes intimidating or threatening in any way, report to the proper authorities (campus security, police)
- **Talk to someone**
- The University of Arizona:  
[http://www.titleix.arizona.edu/ua\\_policies](http://www.titleix.arizona.edu/ua_policies)

# How to Make it STOP: Being an 'Ally'

## Ally

**Verb:** 1. Combine or unite a resource or commodity with (another) for mutual benefit. 2. Side with or support (someone or something).

Allyship is a lifelong process of building relationships based on trust, consistency, and accountability with marginalized individuals and/or groups of people.

(<https://theantioppressionnetwork.wordpress.com/allyship/>)

Allyship is about understanding that you don't know everything, have not lived every experience, and cannot fully ever understand what another person is experiencing, yet you can respect their experiences.



# Tips from Recent Post

- <https://tenureshewrote.wordpress.com/2013/09/26/dont-be-that-dude-handy-tips-for-the-male-academic/>
- Use appropriate salutations and titles
- Don't comment on a person's appearance in a professional context.
- Don't talk over your female colleagues.
- Avoid making sexual remarks when in the work environment.
- Make sure your department/institution seminars, committees, panels, etc. have a good diversity balance (race, gender, etc).
- Pay attention to who organizes all the social gatherings.
- Volunteer to be the note-taker, coffer-grabber, or lunch order-taker at events.
- Don't reinforce stereotypes. For example, women don't need special treatment because of their gender (doors really can be opened by both genders).
- Call on women and URMs in the classroom and at seminars.

# Tips from Recent Post

- <https://tenureshewrote.wordpress.com/2013/09/26/dont-be-that-dude-handy-tips-for-the-male-academic/>
- Learn about benevolent **sexism**, **mansplaining**, and **tone arguments** and avoid these behaviors.
- Learn to apologize when you've been called out.
- Don't leave it to women/minorities (especially junior members) to do all the work to improve diversity in the community.
- Adopt teaching tools and practices that promote diversity.
- Pay attention to your invitations for informal work gatherings. Be mindful of who you invite and whether the invitation is inclusive (recovering alcoholics aren't fond of bars and a colleague with a disability may not be fond of a hike).
- Make sure you're aware of **unconscious bias** in reviewing.
- Know when to listen. Don't belittle or dismiss someone. And avoid **victim blaming**.
- **Don't expect a cookie when you do all of these things.**

# Additional Resources

- Committee on the Status of Women in Astronomy's Anti-Harassment page:  
<http://www.aas.org/cswa/harassment.html>
- Committee on the Status of Women in Astronomy's Unofficial Blog:  
<http://womeninastronomy.blogspot.com>
- Women in Planetary Science's Blog:  
<http://womeninplanetaryscience.wordpress.com/blogroll/>
- Committee on the Status of Minorities in Astronomy's Unofficial Blog:  
<http://astronomyincolor.blogspot.com>
- Ally Blog Post by Stephen Rinehart:  
<http://womeninastronomy.blogspot.com/2014/03/guest-post-sometimes-being-good-isnt.html>
- Resources when all else fails:  
<http://www.aauw.org/resource/sexual-harassment-in-the-workplace-additional-resources/>
- Rape, Abuse and Incest National Network page on Sexual Harassment:  
<https://rainn.org/get-information/types-of-sexual-assault/sexual-harassment>
- 10 Things All 'Allies' Need to Know by Jamie Utt:  
<http://everydayfeminism.com/2013/11/things-allies-need-to-know/>
- How to Be an Ally:  
<https://theantioppressionnetwork.wordpress.com/allyship/>

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