Women of Color in the STEM Disciplines

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**TABLE 1**

Numbers of tenured/tenure track faculty at the top 100 research institutions by race/ethnicity and by gender (FY 2007).

<table>
<thead>
<tr>
<th>Discipline/department</th>
<th>African American</th>
<th>Hispanic</th>
<th>Native American</th>
<th>Total number of faculty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemistry</td>
<td>44 (8)</td>
<td>58 (13)</td>
<td>8 (1)</td>
<td>2,787 (383)</td>
</tr>
<tr>
<td>Mathematics and statistics</td>
<td>64 (7)</td>
<td>74 (16)</td>
<td>3 (0)</td>
<td>4,303 (554)</td>
</tr>
<tr>
<td>Computer science</td>
<td>23 (6)</td>
<td>46 (5)</td>
<td>1 (0)</td>
<td>2,531 (334)</td>
</tr>
<tr>
<td>Astronomy (top 40)</td>
<td>6 (2)</td>
<td>7 (1)</td>
<td>0 (0)</td>
<td>594 (94)</td>
</tr>
<tr>
<td>Physics</td>
<td>21 (2)</td>
<td>61 (9)</td>
<td>2 (0)</td>
<td>3,335 (304)</td>
</tr>
<tr>
<td>Biological sciences</td>
<td>101 (26)</td>
<td>190 (45)</td>
<td>16 (3)</td>
<td>7,455 (1822)</td>
</tr>
<tr>
<td>Earth sciences</td>
<td>19 (4)</td>
<td>48 (8)</td>
<td>8 (1)</td>
<td>2,047 (338)</td>
</tr>
</tbody>
</table>

*Note: The data are displayed as number of men followed by the number of women in parentheses.*

My process...

• Understanding the experience of being underrepresented as a woman of color

• Literature Reviewed
  o Physical Environments & Identity Cues
  o Glass Ceiling
  o Harassment
  o Pet to Threat Career Transition
  o Workplace Climate and Diversity Ideologies
    ▪ Micro-aggressions and Incivilities
• Is the STEM academic workplace safe for Women of Color?
Physical Environment & Identity Cues

• Our physical environments can signal who belongs and who does not
Harassment Experiences

• Women’s likelihood of sexual harassment increases as their level of representation decreases

• Women of color report significantly more racial and sexual harassment than any men or White women
The Glass Ceiling

The invisible barrier that keeps women and minorities from ascending to positions of leadership and authority in their institutions despite their experiences and credentials
## Explanations for the Glass Ceiling

### What leaders say...
- Not enough women in the pipeline
- Women not in the pipeline long enough
- Women not committed
- Women have conflicting interests
- Women lack the right kind of experiences

### What "breakthrough" women say...
- Male cultures
- White cultures
- Poor climates for diversity
- Restrictive stereotypes
- Lack of mentors and networks
- Lack of the right kind of experiences
### Strategies for Breaking Through

#### What leaders say...

- Fill the pipeline
- Develop committed women
- Retain senior women who are willing to sponsor/mentor female proteges

#### What "breakthrough" women say...

- Exceed expectations
- Adopt a style that puts others at ease
Pet to Threat Transition

**Pet**
- Newcomers or Pioneers
- Isolated tokens
- Less experienced
- Attributions for selection
  - Diversity/AA
  - “Feel good factor”
  - Optics
- Reactions
  - Self: Patronized and over-protected
  - Others: Over rewarded and over recognized
- Overexposed & underutilized
  - Experience limited career opportunities
- Benevolent prejudice or discrimination

**Threat**
- Senior level
- Isolated
- More experienced
- Attributions for promotion
  - Questioned
- Feelings of being a perceived threat
- Reactions
  - Self: Lack of reward and recognition
  - Others: Questioned by peers on their achievements and success
- Experience limited career opportunities
- Hostile/Overt discrimination
Voices of Pets and Threats

• Pet Identity
  o “I felt like a pet when my department paraded me as a “diverse body” and used my diversity-related university and community work to demonstrate its commitment to diversity in annual reports and external reviews but then criticized me, and I would even say punished me, for doing this work.”
  -Latina Assistant Professor

  o “I felt like a "pet" as a student at XXXXXXXXXXX. I was one of VERY few black students in the XXXX department and felt the irony of bringing diversity to the school, but not being allowed the freedom of creative and cultural expression to blossom.”
  -African American Graduate Student & Staff member

• Threat Identity
  o “I realized I was a threat when I got promoted to full and no one acknowledged it as had always been done for other faculty in the past. No announcement on the department listserv as had been our tradition. I appreciate the one faculty member who came to my office to shake my hand and congratulation me.”
  -Black female professor and administrator

  o “I realized I was a threat when another Black female faculty member asked me how did I get promoted already. Rather than being happy for me or congratulating me, she seemed questioning and suspicious like my White colleagues.”
  -Black female professor
Diversity Climate & Ideologies

• Multiculturalism
  o Acknowledge differences
  o Embrace diversity
  o Diversity as capital

• Colorblindness
  o Ignore differences
  o Silence diversity
  o Diversity as a stigma
Relationship between departments’ Whites’ MC and minorities’ engagement

(Plaut, Thomas, & Goren, 2009)

\( R^2 = .32, \ \beta = .57, \ t = 2.68, \ p = .017 \)
Relationship between departments’ Whites’ CB and minorities’ engagement

(Plaut, Thomas, & Goren, 2009)

\[ R^2 = .29, \beta = -.54, t(15) = 2.50, p = .025 \]
Diversity Ideology

Conclusions

• Whites and minorities perceive and value colorblindness and multiculturalism differently

• Whites’ diversity ideologies matter to minority peers’ engagement

• How?
Figure 1: Categories of and Relationships Among Racial Microaggressions

Racial Microaggressions
Commonplace verbal or behavioral indignities, whether intentional or unintentional, which communicate hostile, derogatory, or negative racial slights and insults.

Microinsult (Often Unconscious)
Behavioral/verbal remarks or comments that convey rudeness, insensitivity and demean a person’s racial heritage or identity.

Microassault (Often Conscious)
Explicit racial derogations characterized primarily by a violent verbal or nonverbal attack meant to hurt the intended victim through name-calling, avoidant behavior or purposeful discriminatory actions.

Microinvalidation (Often Unconscious)
Verbal comments or behaviors that exclude, negate, or nullify the psychological thoughts, feelings, or experiential reality of a person of color.

Environmental Microaggressions (Macro-level)
Racial assaults, insults and invalidations which are manifested on systemic and environmental levels.

Ascription of Intelligence
Assigning a degree of intelligence to a person of color based on their race.

Second Class Citizen
Treated as a lesser person or group.

Pathologizing cultural values/communication styles
Notion that the values and communication styles of people of color are abnormal.

Assumption of Criminal status
Presumed to be a criminal, dangerous, or deviant based on race.

Alien in Own Land
Belief that visible racial/ethnic minority citizens are foreigners.

Color Blindness
Denial or pretense that a White person does not see color or race.

Myth of Meritocracy
Statements which assert that race plays a minor role in life success.

Denial of Individual Racism
Denial of personal racism or one’s role in its perpetuation.

### Micro-Aggressions (cont)

<table>
<thead>
<tr>
<th>Micro-aggression</th>
<th>Message</th>
<th>Theme</th>
<th>Type of Microaggression</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Where are you from? You speak good English...”</td>
<td>You are not American</td>
<td>Alien in own land</td>
<td>Microinvalidation</td>
</tr>
<tr>
<td></td>
<td>You are a foreigner</td>
<td></td>
<td></td>
</tr>
<tr>
<td>“You are so articulate...”</td>
<td>People of color generally are not smart; it is unusual for someone of your group to be smart</td>
<td>Ascription of Intelligence</td>
<td>Microinsult</td>
</tr>
<tr>
<td>“There is only one race; the human race.”</td>
<td>Denying the unique experience of your group or minority status; Assimilation</td>
<td>Color blindness</td>
<td>Microinvalidation</td>
</tr>
<tr>
<td>“As a woman, I know what you go through as a racial minority.”</td>
<td>Your racial oppression is no different than my gender oppression. I can’t be a racist. I’m like you.</td>
<td>Denial of individual racism</td>
<td>Microinvalidation</td>
</tr>
<tr>
<td>The physical environment--buildings named after Whites and/or portraits only of White men</td>
<td>You don’t belong; you won’t succeed</td>
<td>Macro level microaggression</td>
<td>Environmental micro-aggression</td>
</tr>
<tr>
<td></td>
<td>You are an outsider</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Incivilities

• **Examples**
  
  o Interruptions
  o Talked over
  o Translated for
  o Called the wrong name or have your name repeatedly mispronounced
  o Excluded by others
  o Ideas discounted

• **Outcomes**
  
  o Psychological distress, dissatisfaction, disengagement, and performance declines (students)
  o Coincide with harassment and threatens well-being
Concluding thoughts

- WoC are
  - Vulnerable to both access and treatment discrimination
  - Frequently isolated and vulnerable

- STEM workplaces
  - May resist diversity through their cultures/ideologies but also through poor climates for diversity and their physical workspace
  - Well intentioned STEM professionals may engage in micro-aggressions and incivilities that derail WoC professionally and personally
  - Greater attention to diversity signals in STEM is warranted to encourage greater access and promote diverse, inclusive, and engaged workplaces
References


Thank you!

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