Microaggression and Implicit Bias in STEM

What are they? Why do they matter in STEM? How can we interrupt them?

goo.gl/Y6NQ7N
Pair-Share: Introduce yourself.

- What gives you hope in STEM?
*Greetings Friends

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STEM Coordinator – Beaverton School District  
Former Biology Teacher

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Retired: Beaverton School District  (41 yrs.)  
Title VI Indian Education Coordinator-4 yrs.  
Classroom teacher (K-6)-37 yrs.  
ODE American Indian Education Advisory Panel  
Oregon AI/AN PLC  
STEM Equity PLC
Stay Engaged
Experience Discomfort
Speak Your Truth
Expect and Accept Non-Closure
Maintain Confidentiality
Listen With the Intent To Learn
Suspend Judgement
Topics

1: Microaggression Defined and Why They Matter
2: Implicit Bias
3: Interrupting Strategies
Objectives:

To understand how interpersonal communications may (sometimes unintentionally) marginalize others and how that impacts opportunities and achievements of historically underserved students in STEM.

Today we will examine how our actions and communication might impact our program development, relationships, and/or instruction then learn how to interrupt problematic actions.
Think – Ink – Pair – Share

Do you feel that you have ever been judged because of your identity, looks, gender, sexuality, ethnicity, religion, class or race in a STEM setting?

(positive or negative judgements are applicable)

How did you feel about it?
Microaggression

Communications that subtly send hurtful or dismissive messages toward an individual due to their group identity, often automatically and unconsciously.

Microaggressions are usually committed by well-intentioned folks who are unaware of the hidden messages being communicated.
A comment/action is a microaggression when there is an underlying message that denigrates a group or type of person.

To understand how microaggressions can be damaging, it’s important to understand the underlying (unspoken) message...

We’ll unpack some of the microaggressions by discussing and identifying out the underlying messages.
Implicit bias refers to unconscious attitudes, reactions, stereotypes, and categories that affect behavior, understanding, and decisions.
Why does it matter? THE STEM CAREER INTEREST GAP

Data from MyCollegeOptions Survey - “STEM Interest” indicates intention to major in STEM
Technical CTE Program Enrollment by Gender

- Male: 84.8%
- Female: 15.2%
Technical CTE Program Enrollment by Subgroup

- White: 55.4%
- Asian: 19.7%
- Black: 1.6%
- Latino: 15.3%
- Multi-Race: 7.3%
- Pac. Isl.: 0.4%
- Native Am: 0.3%
<table>
<thead>
<tr>
<th></th>
<th>CS Courses</th>
<th>District</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>79.8%</td>
<td>51.3%</td>
<td>28.5%</td>
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<tr>
<td>Female</td>
<td>20.2%</td>
<td>48.7%</td>
<td>-28.5%</td>
</tr>
<tr>
<td>SPED</td>
<td>8.7%</td>
<td>11.9%</td>
<td>-3.2%</td>
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<tr>
<td>ELL</td>
<td>0.3%</td>
<td>13.3%</td>
<td>-13.0%</td>
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<tr>
<td>Asian</td>
<td>31.5%</td>
<td>15.0%</td>
<td>16.5%</td>
</tr>
<tr>
<td>African American</td>
<td>2.0%</td>
<td>3.0%</td>
<td>-1.0%</td>
</tr>
<tr>
<td>White</td>
<td>48.2%</td>
<td>49.0%</td>
<td>-0.8%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>11.5%</td>
<td>25.0%</td>
<td>-13.5%</td>
</tr>
<tr>
<td>Multi-ethnic</td>
<td>5.8%</td>
<td>7.0%</td>
<td>-1.2%</td>
</tr>
</tbody>
</table>
Beaverton AP and IB Science Course Enrollment Data
Underserved students are at a huge STEM disadvantage.

Figure 6. Percentages of ACT-tested 2017 high school graduates who met the ACT STEM Benchmark, by number of "underserved" criteria met

<table>
<thead>
<tr>
<th>No. of Criteria</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>ZERO</td>
<td>32%</td>
</tr>
<tr>
<td>ONE</td>
<td>11%</td>
</tr>
<tr>
<td>TWO</td>
<td>5%</td>
</tr>
<tr>
<td>THREE</td>
<td>2%</td>
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</tbody>
</table>

How ACT defines underserved learners:

- **Minority**: race/ethnicity is African American, American Indian/Alaska Native, Hispanic/Latino, or Native Hawaiian/other Pacific Islander
- **First generation in college**: highest parental education level is high school diploma or less
- **Low income**: combined parental income is less than or equal to $36,000

Impacts

**Perceived Gender and Racial Barriers to Urban Adolescents STEM Engagement:**
“Higher science aspirations significantly predicted perceived support for girls and women in science. Analysis of interviews showed themes of microaggressions, responses to microaggressions, and gender- and race-based support. Findings suggest participants vary in perceptions of barriers, yet are generally optimistic about overcoming such obstacles.” (Grossman & Porche, 2013)

**Racial Microaggressions and Psychological Functioning Among Highly Achieving African-Americans:**
“The qualitative findings revealed three categories of microaggressions including Assumption of Criminality/Second-Class Citizen, Underestimation of Personal Ability, and Cultural/Racial Isolation. Underestimation of Personal Ability was associated with greater perceived stress at one-year follow-up, which in turn was related to greater depressive symptoms.” (Torres, Driscoll, and Burrow, 2010)
Our role isn’t to judge whether or not we interpret communications as microaggressions, or question why others see them that way (or don’t).

Rather, our role is to generate an awareness of the fact that our intention may have a different impact than we intended -- and it can be detrimental.

Recognizing the way others may be affected by our language (even if well-intended), builds empathy and is the first step in becoming more aware and making microaggressions visible.
Micro Aggressions
Pair-Share

Do you feel you have judged others on account of their identity (even unintentionally or unconsciously)? Why or why not?
The Impact of Microaggressions

Man switches names with his coworker...

What happened when a man signed work emails using a female name...

**Warning - adult language in tweets!
One Teen’s Story of Sexism in Science

“There’s no way a girl like you did this research.

“I felt like all the work I had put in — not just that day but for two years — had gone completely invalidated because a man didn’t justify what I had done. I felt like if I were a male student, this wouldn’t have happened to me.”
Ally: Plan for It

When you witness, commit, or experience a microaggression or evidence of implicit bias take note of your feelings and how you can respond.
Types of Microaggressions

• **Microassaults**: Conscious and intentional discriminatory actions: using racial epithets, displaying White supremacist symbols.

• **Microinsults**: Verbal, nonverbal, and environmental communications that subtly convey rudeness and insensitivity that demean a person's racial heritage or identity. An example is an employee who asks a co-worker of color how he/she got his/her job, implying he/she may have landed it through an affirmative action or quota system.

• **Microinvalidations**: Communications that subtly exclude, negate, or nullify the thoughts, feelings or experiential reality of a person of color. For instance, White people often ask Latinos where they were born, conveying the message that they are perpetual foreigners in their own land.
Tokenizing

- One person does not represent the identity of the culture.
- Avoid pointing out that people are underrepresented in the setting.
Additional Articles

I Recorded The Racist Things People Said & Did To Me For 2 Weeks

Sexism in STEM Careers

Being Female In Science
Be prepared to share

Microaggressions in STEM From Speakyourstory.net

<table>
<thead>
<tr>
<th>What they said</th>
<th>How what they said was perceived and the impact</th>
<th>Underlying Implicit Bias</th>
</tr>
</thead>
<tbody>
<tr>
<td>On introducing me to a friend at a conference, my colleague stated that I was recently hired, and it was &quot;because I was a woman&quot;.</td>
<td></td>
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</tbody>
</table>
Go around table – each person share one
Group helps decide what the underlying implication is
Interrupting Microaggressions
** Interruption Guidance **

- Speak to the behavior not the person
- Avoid starting with “Why? (try “how” or “what made you_____?”)
- Examine your intention...
  - To help the person understand or feel guilty?
  - How does your body language and tone communicate your intention?
Ways to Interrupt Microaggressions - Tool

- Inquire – “say more about that?”
- Paraphrase/Reflect
- Reframe – “Let’s reframe this”
- Use impact and “I” statements
- Use preference statements
- Re-direct
- Use strategic questions – “what impact do you think this has?”
- Revisit – talk to the person later
Practicing Interrupting Microaggression Activity

Use the Interrupting Tool to come up with a way to interrupt it, we will go through each strategy one at a time.

E.g. Round 1 - Inquire, Round 2 - choose your own

Person A: Microaggressor

Person B: Interrupter

Then switch
Resources for Implicit Bias in the STEM

Implicit Bias in STEM Classroom

Reducing the impact of implicit bias in the STEM workforce
Know Yourself - Resources

- 10 Ways Well-Meaning White Teachers Bring Racism Into Our Schools
- Color Blind Education is the Wrong Response
- Locating Yourself for Your Students .pdf
- 20 (Self-) Critical Things I Will Do to Be a More Equitable Educator
- Getting to Know Your Cultural Self
- Personal Self Assessment of Anti-Bias Behavior
- Teach To Your Strengths
- Assessing Yourself-Your-School-Checklist
- Creating a positive classroom climate for diversity
- Culturally Responsive Checklist
- Implicit Association Test Website
- Social Identity Groups
- White Privilege: Unpacking the Invisible Knapsack
- Privilege Walk Statements and Debrief Activity