Implicit Bias &
Hard Work, Grit, and Talent
Introduction
What is Implicit Bias?

• When you get on a bus and the only empty seats are next to a variety of people...which one do you take?
• Implicit Bias relates to culture and upbringing
• You don’t have to feel antipathy towards a certain group of people to have implicit bias
• Relating physical characteristics with “good” or “bad”
● who is impacted?

● Class, Race/Ethnicity, Gender, Language, Place/Geography, Disability, Sexual Orientation, Age, Etc.

● Studies have used a variety of different methodologies and converged on the common finding that education is directly related with the family income.

    For example.....

● To address implicit gender bias, you need awareness, changes in policies and practices, and leaders who are willing to hold people accountable.
What does Implicit Bias Look like in Engineering?

• Copies of the same resume were given out to recruiters...just under different names (Bertrand and Sendhil)

• Positive relationship of strong implicit bias linking male to science and eighth grade science performance (Banaji et al)

• Engineering admissions: GPA and standardized test scores vs personal statement and experiences
How do we prevent Implicit Bias?

• See beyond the numbers.
• Via outreach programs tailored to specific age groups and cultures
• Students
• Faculty
Talent, Hard work, & Grit
The Importance of Mindsets
- Carol Dweck

<table>
<thead>
<tr>
<th>FIXED MINDSET</th>
<th>GROWTH MINDSET</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intelligence is static.</td>
<td>Intelligence can be developed.</td>
</tr>
<tr>
<td>Leads to a desire to look smart and therefore a tendency to:</td>
<td>Leads to a desire to learn and therefore a tendency to:</td>
</tr>
<tr>
<td>• avoid challenges</td>
<td>• embrace challenges</td>
</tr>
<tr>
<td>• give up easily due to obstacles</td>
<td>• persist despite obstacles</td>
</tr>
<tr>
<td>• see effort as fruitless</td>
<td>• see effort as a path to mastery</td>
</tr>
<tr>
<td>• ignore useful feedback</td>
<td>• learn from criticism</td>
</tr>
<tr>
<td>• be threatened by others' success</td>
<td>• be inspired by others' success</td>
</tr>
</tbody>
</table>
A Growth Mindset Promotes Persistence in STEM

What has to be done:

1) Teach students that intellectual skills can be acquired.
2) Praise students for effort.
3) Talented and gifted programs should send the message that they value growth and learning.
4) Highlight the struggle.
Talent, Hard Work, & Grit: The 10,000 Hour Rule

- Claim: expert proficiency is gained after 10,000 hours of practice at a skill.
- No such thing as innate talent: success requires sustained, intensive effort.
- Examples: The Beatles, Spelling Bee Contestants, Conservatory Violin Students
- Practice must be both extensive and intensive.
Talent, Hard Work, & Grit: The 10,000 Hour Rule

But...

• These examples look backwards from success to its beginnings.
• What role do luck, privilege, and circumstance play?
• How do perceptions and stereotypes affect an individual’s practice?
Implicit Bias & Hard Work & Grit

• Engineering admissions: Implicit Bias of grades relates to privilege and meritocracy
• Evaluation of resumes: gender bias, racial bias, and experiences
• Using hard work and grit to overcome our invisible biases
Thank You