



Impostor Syndrome

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Warm-Up

- ▶ Introduce yourself to your partner in the breakout room.
- ▶ Describe a situation in which you felt like you weren't qualified for what you were doing or would be "found out" as an impostor.
- ▶ Have these feelings changed? How do you/did you deal with them? What else could you do?

Impostor Syndrome

▶ Causes:

- ▶ Marginalized identity
- ▶ First-generation status
- ▶ Late entry into the major
- ▶ Fewer/lower-level previous physics & math classes

few NC high schools offer physics, even fewer AP physics (Haase & Cottle 2011), schools offering physics have more privileged students (Kelly & Sheppard 2008)

▶ Solutions:

- ▶ Talking about it to realize how normal and wrong it is
<https://impostorsyndrome.com/10-steps-overcome-impostor/>
- ▶ Adopting a growth mindset for grades and test-taking
- ▶ Building a mentor network
- ▶ Developing a sense of physics identity (ViP/SPS, research in the department, REU programs)

growth mindset: train yourself to be a better test-taker

▶ Mythology that boys do better in math

from a meta-review of 308 studies, girls from elementary to high school have been outperforming boys in all of their classes for the last 100 years – including math and science (Voyer & Voyer 2014)

▶ Mythology that women are underconfident

undergraduate math tests: men tend to **over**estimate their scores, women self-assess more accurately (Bench et al. 2015)

▶ Stereotype threat: a feeling that you are at risk of confirming stereotypes about your identity group

▶ <https://users.physics.unc.edu/~sheila/Test-TakingStrategies.pdf>

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Also many more myths based on race, class, disability...

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- ▶ **Value-affirmation counteracts stereotype threat.**
Studies show that if you take a few minutes before a test to write down or silently recite your values (e.g., supporting friends and family, contributing to human knowledge, taking a stand for social justice...), this will “bring you back to who you are” and can yield dramatic gains (tens of percents) in test scores.
- ▶ **Ritualize essential test-taking skills:**
do easy problems first, get partial credit for relevant equations, watch the time, know your grader, sleep, eat, breathe...
- ▶ **Practice performing under pressure if your brain “floods” in timed-test situations. Harness your stress!**
Read Bronson & Merryman 2013 on dopamine regulation:
<https://www.nytimes.com/2013/02/10/magazine/why-can-some-kids-handle-pressure-while-others-fall-apart.html>

mentoring

- ▶ Female students are less likely to be seen as worthy of mentoring, due to unconscious bias on the part of faculty (Moss-Racusin et al. 2012)
- ▶ Students who feel mentored are less likely to exhibit impostor syndrome (Ivie & Ephraim 2011)

“Mentored students were **more** likely than others to report that the major cause of success in their life was... high ability and that they are at least as smart as their peers. [They] were also **less** likely to report that they felt they were in their current career position through some kind of mistake.”

- ▶ The impostor syndrome is not just an internal lack of confidence, it is **externally imposed** by a lack of mentoring that should express faith in the mentee

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similar bias hurts many other marginalized groups...

...also reinforced by micro-aggressions

Can a single guru be the perfect mentor?



Put yourself at the center instead: build a mentor network



Mentor Network Map



YOU

Substantive Feedback

1. _____
2. _____
3. _____

Professional Development

1. _____
2. _____
3. _____

Sponsorship (Senior Mentors)

1. _____
2. _____
3. _____

Emotional support (Family & Friends)

1. _____
2. _____
3. _____

Access to Opportunities

1. _____
2. _____
3. _____

> Internal

1. _____
2. _____
3. _____

> External

Intellectual Community

- For ideas <
1. _____
 2. _____
 3. _____

- Readers <
1. _____
 2. _____
 3. _____

Accountability

1. _____
2. _____
3. _____

Role Models

1. _____
2. _____
3. _____

Safe Space

1. _____
2. _____
3. _____

(astro)physics identity

- ▶ Join ViP and SPS, get a peer mentor, join the department diversity Slack & tune in on Fridays https://join.slack.com/t/physast-diversity/shared_invite/zt-gzz303ir-RDIf2KHTnsuaRw~6Kj5bJQ
- ▶ Join a research group in the department where you can develop strong relationships with both grad student and faculty mentors
- ▶ Visit faculty office hours and get to know your professors; maybe some will become mentors
- ▶ Do a cohort-based summer program like an REU to develop your social and professional sense of belonging in science (and find more mentors!)