

APS National Mentoring Community Conference 2020

In partnership with NSBP and NSHP

CONFERENCE WELCOME AND OPENING



Alfred P. Sloan
FOUNDATION



NMC Conference Organizers



2020 Organizing Committee

- ▶ Eduardo Mucciolo
- ▶ Nikitta Campbell
- ▶ Talat Rahman
- ▶ Peter Delfyett
- ▶ Ramon Lopez
- ▶ Willie Rockward
- ▶ Jesús Pando
- ▶ Erika Brown
- ▶ Monica Plisch

2020 Program Committee

- ▶ Mario Borunda
- ▶ Brian Zamarripa
- ▶ Laurene Tetard
- ▶ Joshua Burrow
- ▶ Elon Price
- ▶ Willie Rockward
- ▶ Ramon Lopez
- ▶ Eduardo Mucciolo
- ▶ Talat Rahman
- ▶ Donnell Walton
- ▶ Erika Brown
- ▶ Imisi Agbaniyaka
- ▶ Kathryne Woodle
- ▶ Monica Plisch

NMC Program Leadership



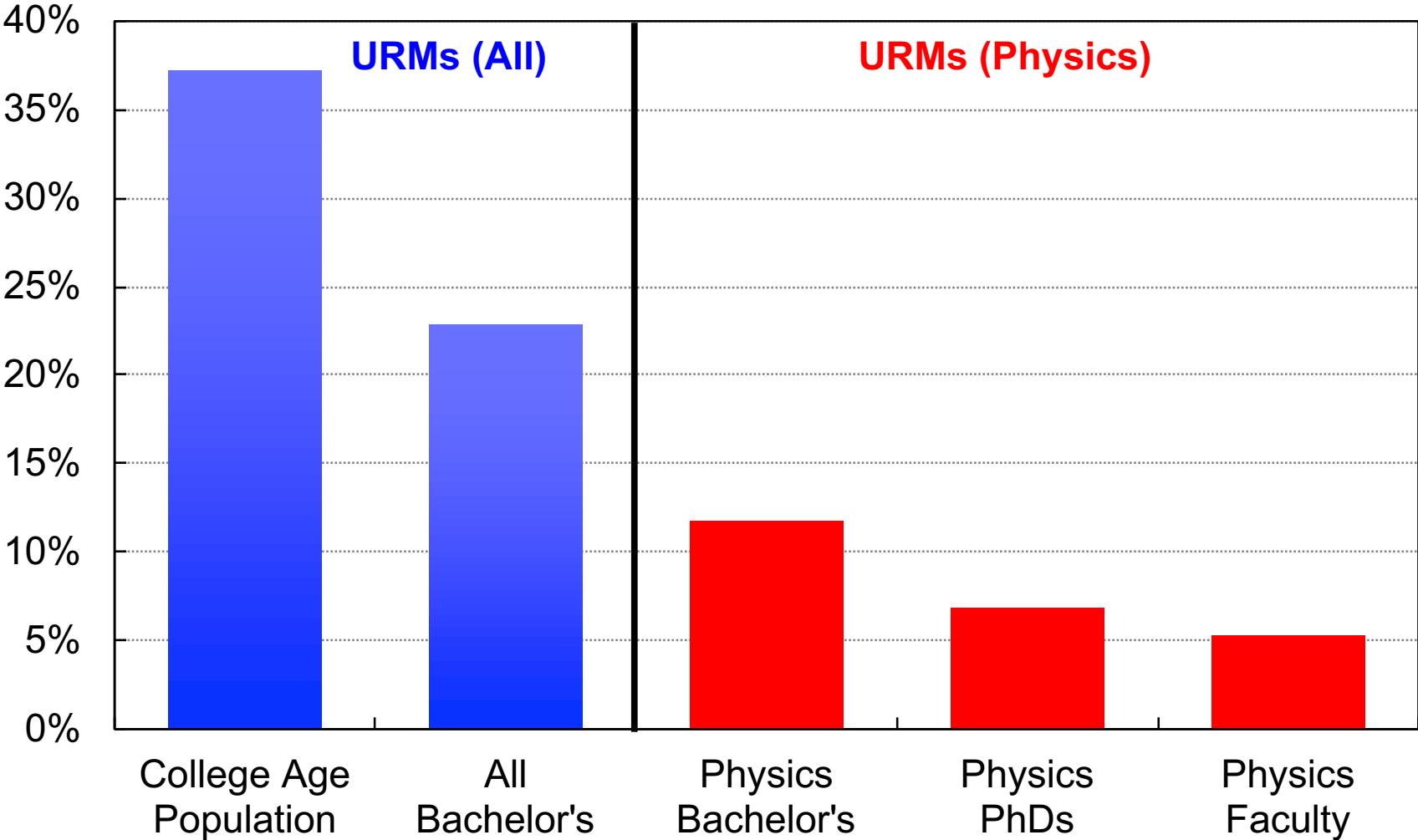
APS Committee on Minorities:

- ▶ Geraldine Cochran (Chair)
- ▶ Mario Borunda (Chair-Elect)
- ▶ Mario Diaz
- ▶ Donnell Walton
- ▶ Clayton Simien
- ▶ Jose Mendoza-Cortes
- ▶ Jami Valentine Miller
- ▶ Gabriella Gonzalez
- ▶ Sowjanya Gollapinni

APS Staff:

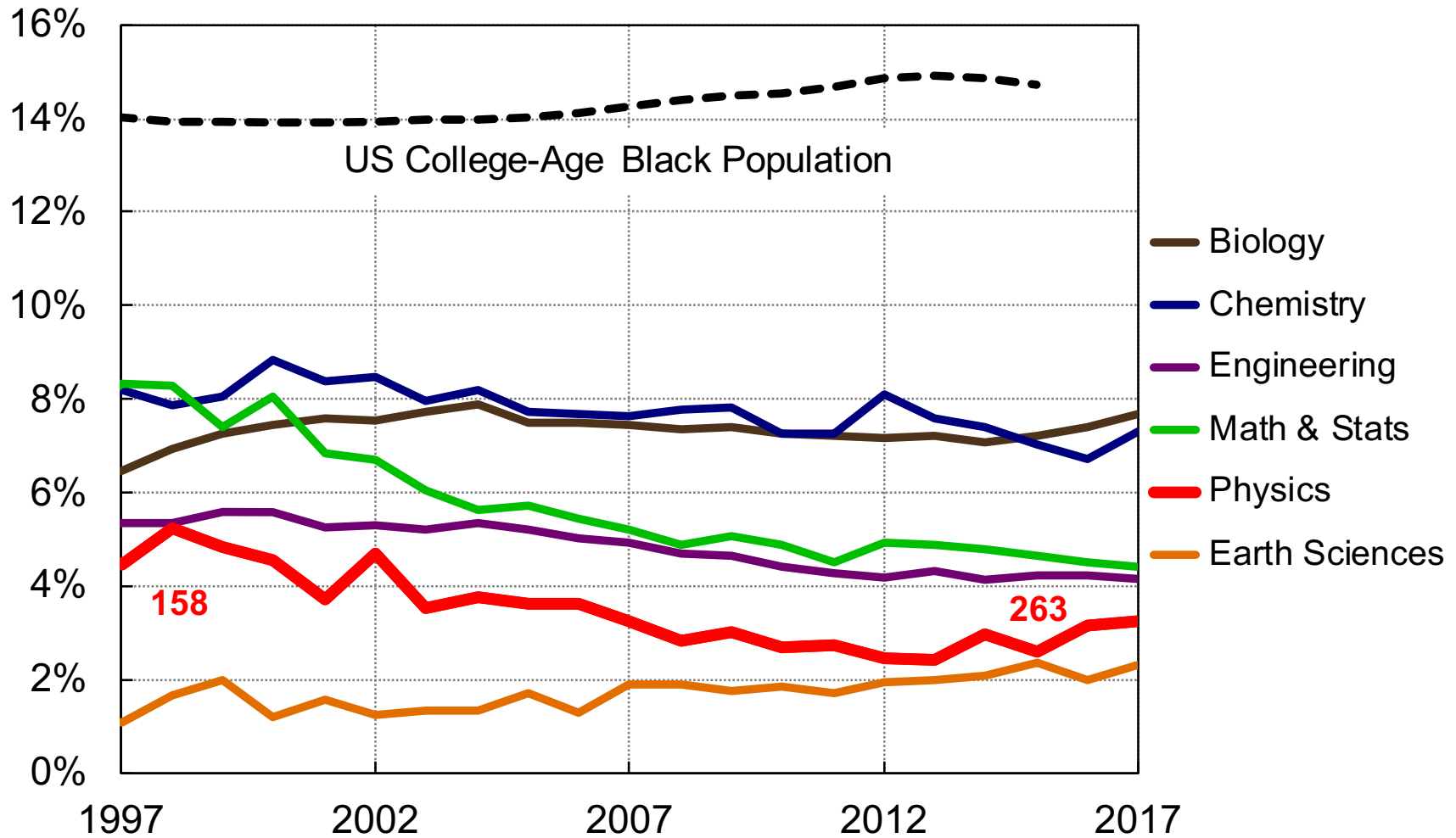
- Imisi Agbaniyaka
- Simone Hyater-Adams
- Erika Brown
- Kathryne Woodle
- Monica Plisch (Director)
- Theodore Hodapp (Sr. Advisor)

Participation of Underrepresented Minorities (URM) in Physics



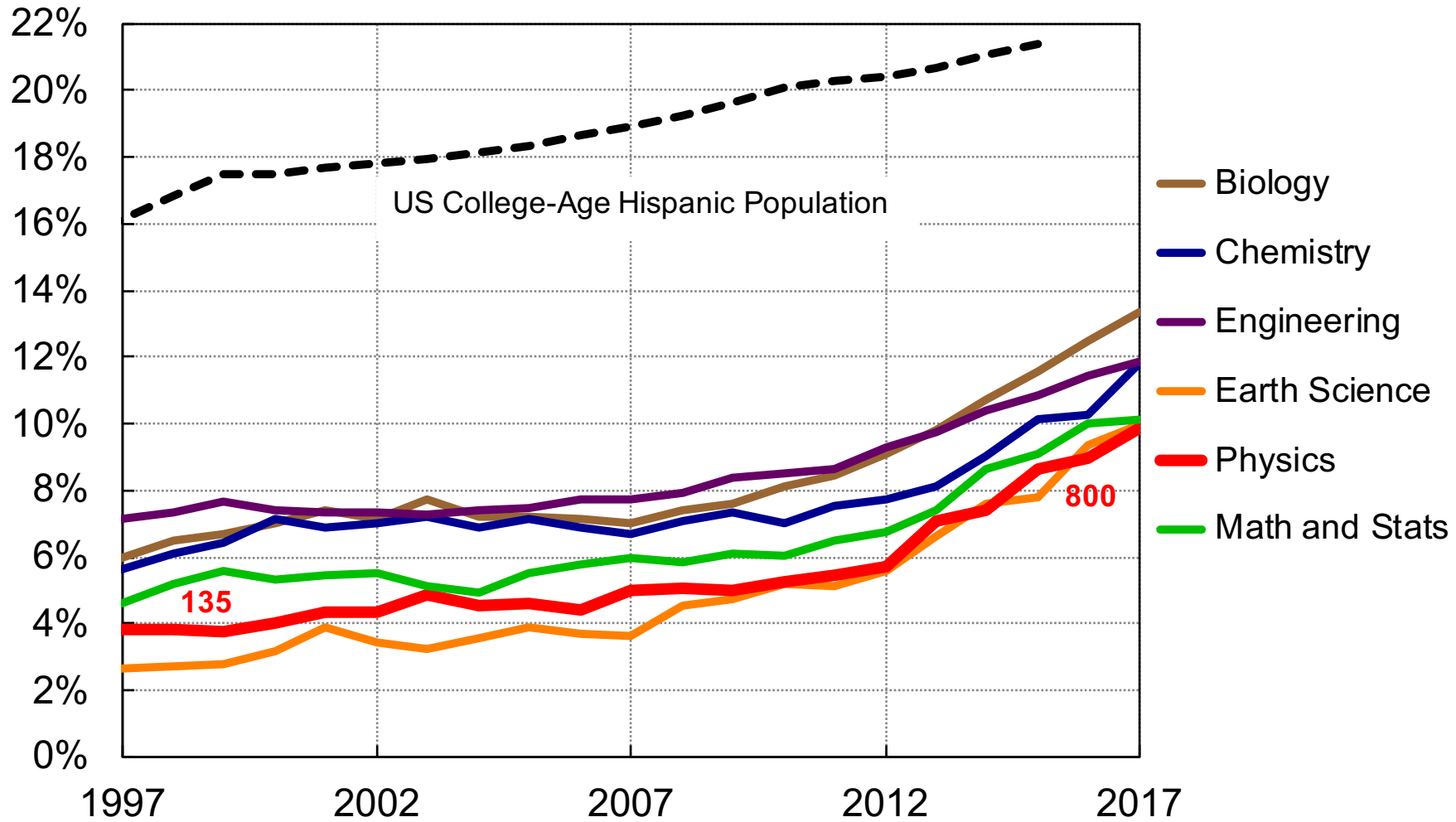
Source: US Census, IPEDS, AIP, and APS

Bachelor's degrees awarded to Black students



Source: IPEDS, US Census, and APS

Bachelor's degrees awarded to Hispanic students



Source: IPEDS, US Census, and APS



Goal: To increase the number of underrepresented ethnic and racial minorities who complete a physics BS degree

Program components:

- ▶ Pair undergraduates with local faculty mentors
- ▶ Discussion prompts
- ▶ Annual conference
- ▶ Professional development
- ▶ BEAM fund

Join: www.aps.org/nmc



Mentoring Matters



- The most important factor in **degree attainment** was positive mentoring experience (Solorzano, 1993)
- The desire to **pursue a PhD** is influenced by a strong mentee-mentor relationship (McGee and Keller, 2007)
- Mentoring increases **persistence** in science, **career satisfaction** and **productivity** (reviewed in Sambunjak, Straus and Marusic, 2010)
- Mentoring has been linked to enhanced **science identity**, sense of **belonging** and **self-efficacy** (Palepu *et al*, 1998; Garman *et al*, 2001; Paglis *et al*, 2006; Lopatto, 2007; Bland *et al*, 2009; Feldman *et al*, 2010; Cho *et al*, 2011; Chemers *et al*, 2011; Thiry and Laursen, 2011)
- **Mentoring and research training cannot be separated** from scientific research for anyone in postdoctoral or graduate student positions and should not be considered as separate objectives (National Academy of Sciences, 2005)

NMC Participants



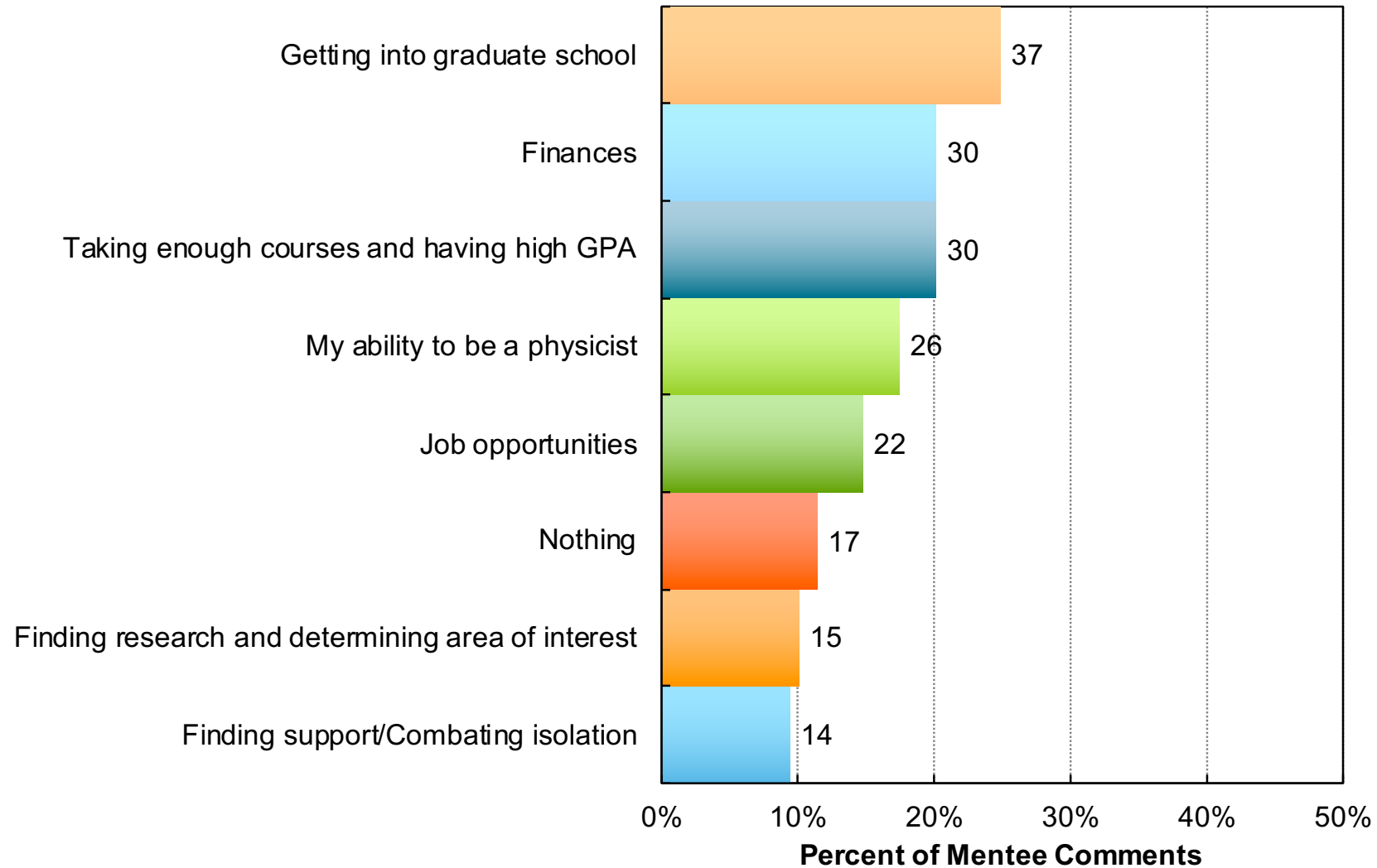
NMC mentors (physics faculty, professional physicists)

- ▶ 225+ mentors (16% Hispanic, 11% Black, 1% Indigenous)
- ▶ Mentors in 20% of all US physics departments
- ▶ Mentors in departments that educate 36% of all physics majors

NMC mentees (undergraduate physics students)

- ▶ 290+ mentees (47% Hispanic, 36% Black, 3% Indigenous)
- ▶ 900-1000 more BS degrees/year will double URM participation

Biggest concerns with finishing a physics degree



Mentor/mentee profile



Mentee: Madelyn Leembruggen

Mentor: Rohana Wijewardhana

Institution: University of Cincinnati

Outcome: Completed physics BS in May 2018, entered physics PhD program at Harvard

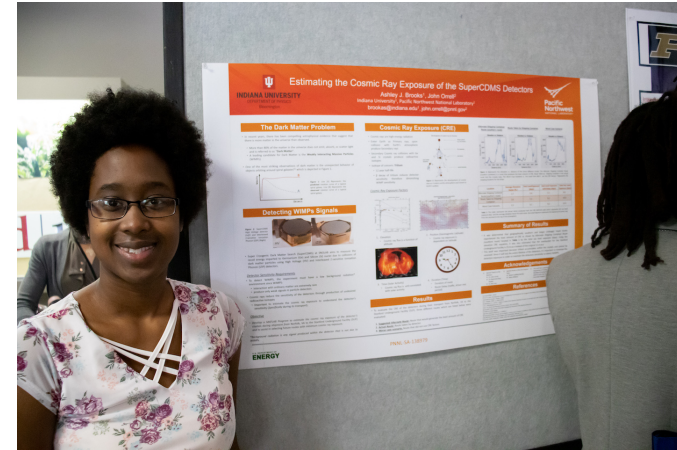
“I thought maybe I would enjoy theoretical physics, but I could not name a single theoretical physicist who was a woman or from an underrepresented background, and I couldn't see myself fitting in with the theorists whose names I did know. ...I had also convinced myself I did not have the drive or skills to make it through graduate school and began to plan for a career path which seemed, to me, easier.”

“My mentoring relationship with Prof. Wijewardhana was central to my graduation with a physics degree and my continuation in the field. [He] challenged me to achieve more academically than I thought I ever could and exposed me to career opportunities I never knew were options. His mentorship and willingness to invest in me showed me I really can be a physicist and contribute to the field.”



Activities:

- ▶ Plenary talks
- ▶ Student poster and oral sessions
- ▶ Networking fair
- ▶ Workshops
- ▶ Lab tours
- ▶ Social events



Bringing Emergency Aid to Mentees (BEAM) fund



- ▶ Small grants (up to \$1500) for mentees facing unforeseen financial emergencies
- ▶ Enables mentees to continue studies in physics
- ▶ Application submitted by mentee and mentor
- ▶ Review by COM, response in 48 hours



Program Outcomes



- ▶ Mentees reported the program was useful, and it helped them **gain confidence, knowledge, and opportunities.**
- ▶ One-third of mentees reported the mentoring significantly **increased their intent to complete a BS degree in physics.**
- ▶ Mentees' **intent to go to graduate school increased** significantly due to the program.



What is next for NMC?



- ▶ NMC Conference
 - ▶ 6-8 February 2020 at University of Central Florida
- ▶ Mentor/mentee recruitment
- ▶ Mentor recognition
- ▶ Program evaluation