

How do we get to belonging?

Belle II Summer Workshop 2024

Kay Kinoshita

University of Cincinnati

Please fill [this survey](#)



US Belle II DEI Committee

Kay Kinoshita (chair), Tommy Lam, Peter Lewis, Renu Garg

Responsibilities

- Summer workshop: this session
- Professional development workshops at US B2WS, B2GM
- Outreach
 - Belle II Masterclass outreach events
 - Belle II Explorer: outreach event before this workshop
- US B2 climate survey – coming soon!
- Develop relationships with physics departments at institutions that are minority-serving/historically-minority/majority-minority

Why is DEI an issue for physics?

View from the past (\approx 1970's)

- Physics is about HARD SCIENCE, not social justice!
- Physics is hard, everyone gotta be tough
- Diversity is low but will be fixed over time, "now that discrimination has been eliminated!"

50 years later ... it has been heard ...

- Physics is diverse!
 - look at all the international collaboration!
 - the fraction of women has risen!
- IS Physics "diverse enough"??

What's enough? What's the aim?

What's the aim?

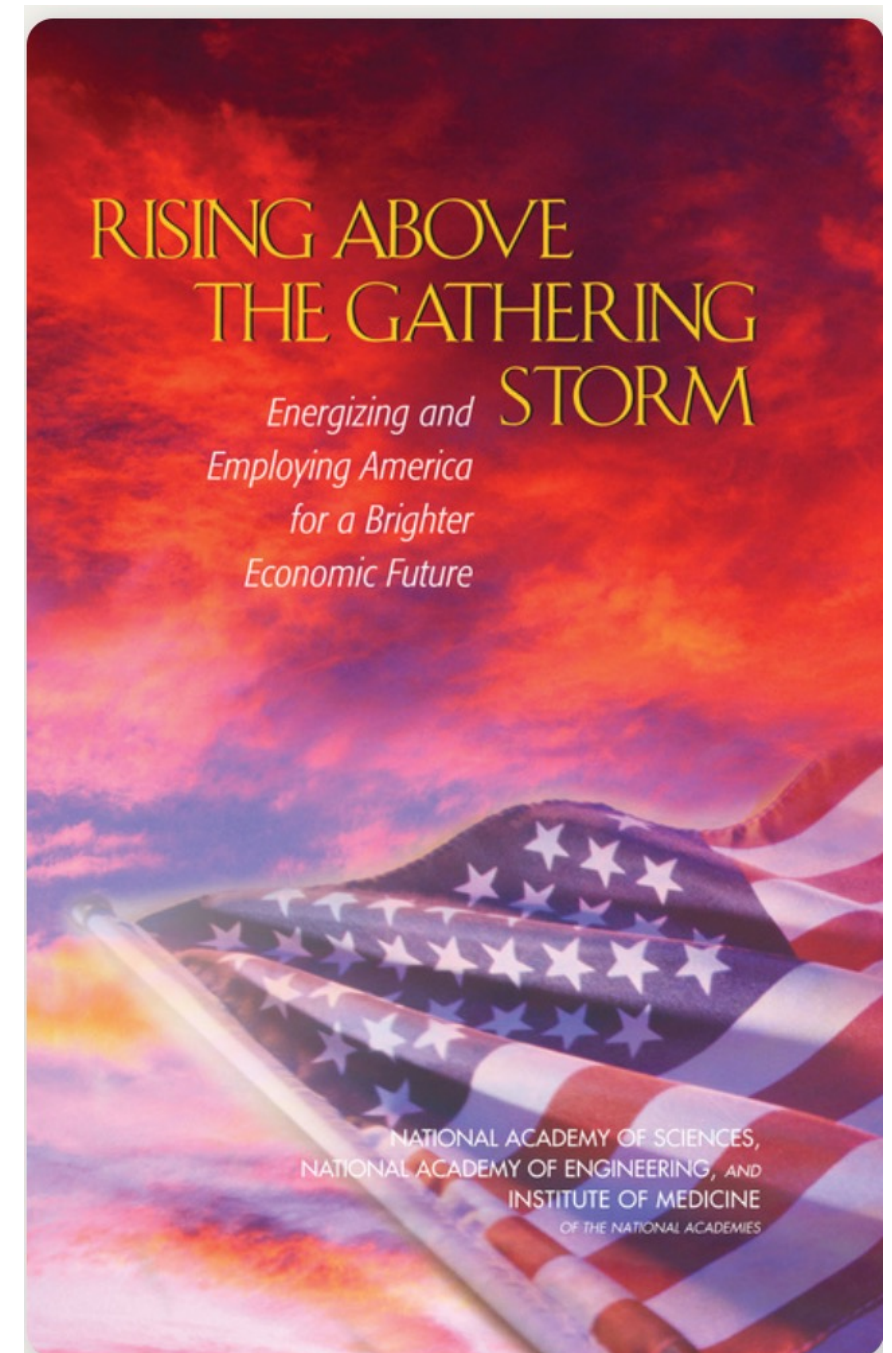
US Govt: Utilization of talent

Rising Above the Gathering Storm

Energizing and Employing America for a Brighter Economic Future
National Academy of Sciences (2007)

focus on STEM, women

- underutilizing 50% of talent puts US at a severe disadvantage for future economic development



What's the aim?

US Govt: Utilization of talent

Rising Above the Gathering Storm

Energizing and Employing America for a Brighter Economic Future

National Academy of Sciences (2007)

Physics is a pretty rare talent/interest: "Best & Brightest"

- US physics bachelors/year $\approx 9 \times 10^3$; US 22 yr olds $\approx 4.5 \times 10^6$;
 \Rightarrow Bachelors/population $\approx 2.0 \times 10^{-3}$

How is physics "talent" distributed among population groups?

- HINT: evolution of special abilities in specific groups of humans over the history of physics (400 yrs) **UNLIKELY**

What's the aim?

If talent is distributed uniformly and there is full access and opportunity

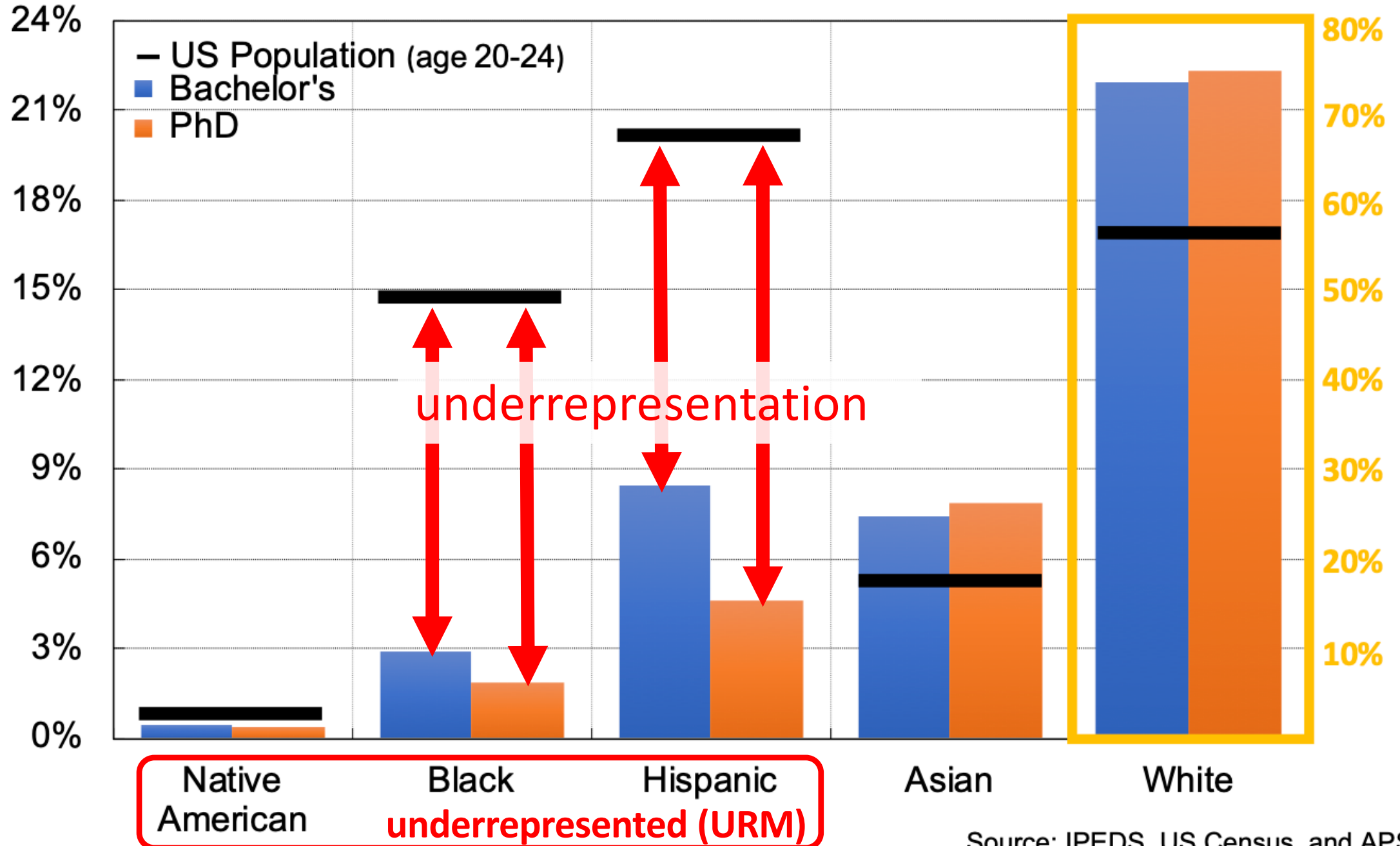
- we expect a uniform distribution of physicists among population groups
 - **representative diversity**
- How close are we to it? Let's see locally
 - please complete [google form](#)

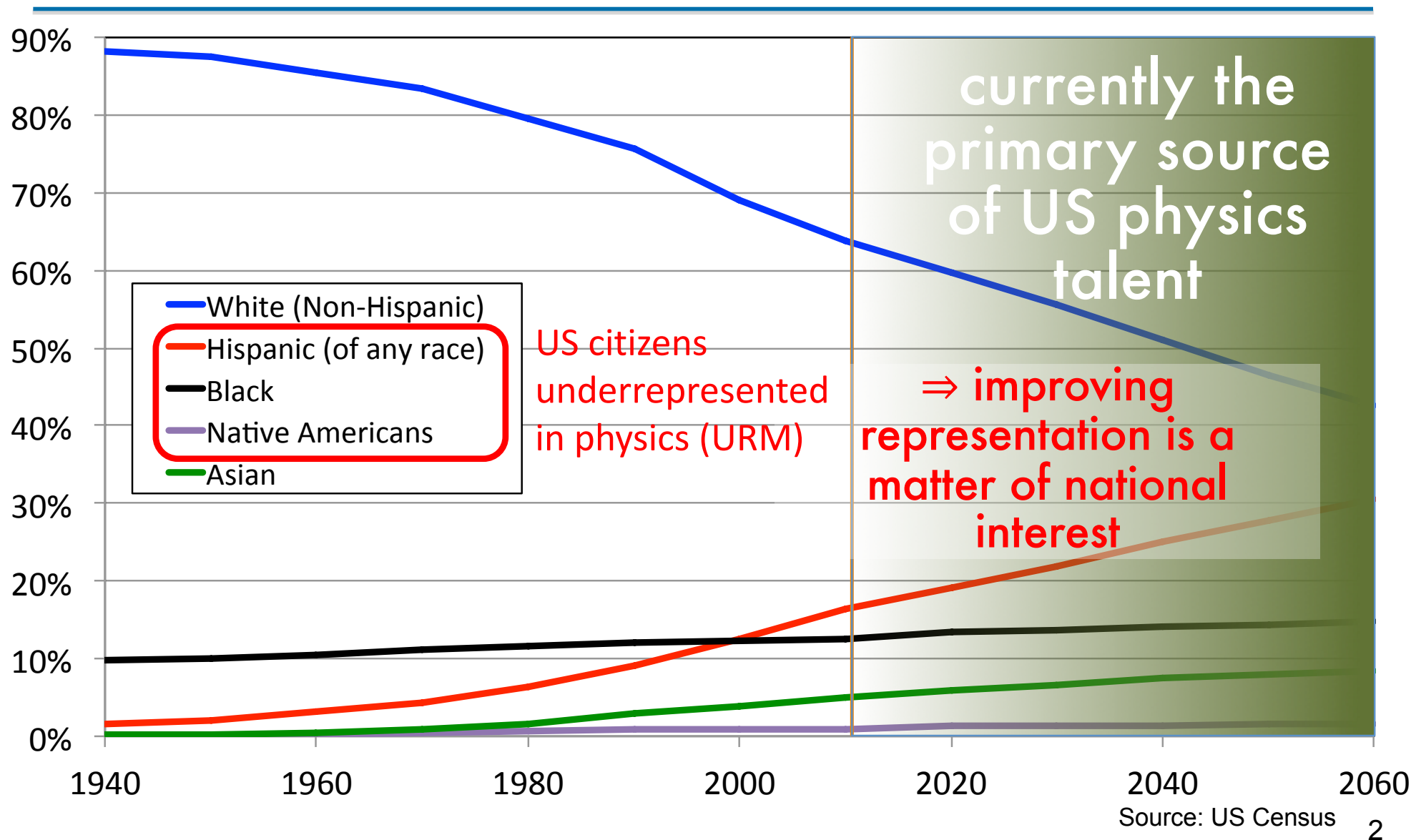


local diversity

	Faculty	students	Fraction faculty	fraction students	US College-age
total	377	728			
Female	64	170	0.170	0.234	0.49
US Black/Indigenous	22	47	0.058	0.065	0.16
US Hispanic	8	32	0.021	0.044	0.2
LGBTQ	8	38	0.021	0.052	0.22
Disability	6	26	0.016	0.036	0.08

Physics Degrees (5-yr avg 2013-2017)





www.aps.org

©2013, T. Hodapp, Email: hodapp@aps.org

2

What's the verdict?

We observe underrepresentation in groups that are minoritized

- may be due to differences in
 - access to education and opportunities
 - economic stability, hunger, trauma
 - cultural/social inclusion
 - opportunities for employment, mentorship
- These affect a large majority of the US population
 - ⇒ talent is definitely being underutilized
- Talent utilization is a US policy/economic issue
 - that will not be addressed without understanding/addressing underrepresentation
- Underrepresentation as observed indicates lack of equity

What can WE do?

There's a lot the physics community alone can't change

- economic inequality, societal issues
- elementary & secondary education

The community CAN change

- university physics education
- community culture and climate, inclusion, belonging
- mindset on physics talent

Action may result in progress toward representation

Doing nothing will definitely NOT

- "...I treat everyone the same...what REALLY needs to change is K-12 education, ..."



Physics > Physics Education

[Submitted on 5 Oct 2022]

How well-intentioned white male physicists maintain ignorance of inequity and justify inaction

Melissa Dancy, Apriel Hodari

Background: We present an analysis of interviews with 27 self-identified progressive white-male physics faculty and graduate students discussing race and gender in physics. White men dominate most STEM fields and are particularly overrepresented in positions of status and influence (i.e. full professors, chairs, deans, etc.), positioning them as a potentially powerful demographic for enacting systemic reform. Despite their proclaimed outrage at and interest in addressing inequity, they frequently engage in patterns of belief, speech and (in)action that ultimately support the status quo of white male privilege in opposition to their intentions.

Results: The white male physicists we interviewed used numerous discourses which support racist and sexist norms and position them as powerless to disrupt their own privilege. We present and discuss three overarching themes, seen in our data, demonstrating how highly intelligent, well-intentioned people of privilege maintain their power and privilege despite their own intentions: 1) Denying inequity is physically near them, 2) Locating causes of inequity in large societal systems over which they have little influence and 3) Justifying inaction.

Conclusions: Despite being progressively minded, well-meaning, and highly intelligent, these men are frequently complicit in racism and sexism in physics. We end with recommendations for helping these men to engage the power they hold to better work with women and people of color in disrupting inequity in physics.

Subjects: **Physics Education (physics.ed-ph)**; Physics and Society (physics.soc-ph)

Cite as: [arXiv:2210.03522](https://arxiv.org/abs/2210.03522) [physics.ed-ph]
(or [arXiv:2210.03522v1](https://arxiv.org/abs/2210.03522v1) [physics.ed-ph] for this version)
<https://doi.org/10.48550/arXiv.2210.03522>

Journal reference: IJ STEM Ed 10, 45 (2023)

Related DOI: <https://doi.org/10.1186/s40594-023-00433-8>

What can WE do?

A topic of current focus is inclusion and belonging

- Inclusion: *Intentionally creating welcoming and respectful environments and systems in which inequities in power and privilege are addressed and everyone is given an opportunity to flourish.*
- identified as a major factor in lack of representation from Black/Indigenous in US physics
 - in classrooms
 - in departments
 - in physics student communities
 - in research settings

Inclusion/belonging

Jeopardy quiz

- an activity where individuals who are not members of a community willingly undergo abuse and humiliation from current members as a condition of entry

Inclusion/belonging

Are abuse and humiliation prerequisite to success?

- some seem to believe so
 - Share an experience [here](#)

Share an experience in physics where you feel

- you were intentionally or unintentionally humiliated by a person
 - No names, but it will be helpful if you can indicate whether the perpetrator was a peer or of higher or lower status relative to you
 - Did it affect your feelings of belonging in the physics community?
-

- A faculty accused me of cheating because I had a different solution than them for a homework problem
- Second hand ~ Another graduate student commented (quietly) on the attractiveness of an undergrad while proctoring their exam.
- I kept scheduling appointments with a professor and on the appointment day they would not show up, or ignore follow ups, for about 2 months before I gave up.
- Quote from advisor: “can I fire you”
- Outright “I hate Jews” to face from several faculty members in boarding school, forced to eat meat as long time vegetarian.
-

Inclusion/belonging

? How can we recognize we may be excluding certain groups in a community where the journey itself creates so much doubt about belonging?

Better inclusiveness toward minoritized groups improves the community experience for everyone

Suggest an action to make your local community more inclusive and conducive to belonging

Suggest an action that you can take in the near future that will help to make your community more inclusive.

- Mentor incoming grad students throughout the first year to make it easier to integrate into grad student life.
- Organize study groups to get through core classes/electives together.
- Help out with Belle 2 ECR
- Educate ourselves and our peers about the inequities we face as a community.
- Outreach, recruit more aspiring physicists from underrepresented demographics.
- Support our peers that come from underrepresented communities.
-
- Initiate a support network with your peers, both for everyday struggles and those that come from discrimination and/or exclusion
- Reach out to incoming students in cohort to help them feel welcome, organize events for the group.
- If you think something you said was hurtful, ask if it was and apologize
- Speak up when you hear someone make a comment that may negatively impact others
- Encourage the younger generation of minorities to own it when they're good at something

Summary

- Representative diversity in STEM is a policy aim of the US government as a means to maintain technological and economic superiority
- Current diversity in US Physics is so far from representative that there can be no doubt there are inequities
- Diversity in physics is unlikely to improve further without community action to improve the climate for minoritized groups
- An identified roadblock is lack of inclusion & belonging – improving these will increase diversity and the climate **for everyone**
- inclusion/belonging is about community culture, not policies and mission statements; everyone plays a role – **make yours a positive one**

Resources

- K. Rosa et al, "Resource Letter RP-1: Race and physics"
- <https://doi.org/10.1119/10.0005155>
- J. Blue et al, "Resource Letter: GP-1: Gender and Physics"
- <https://doi.org/10.1119/1.5114628>
- R. M. Thomson, "[Advancing equity, diversity, and inclusion: a how-to guide](#)"
- <https://doi.org/10.1063/PT.3.4921>
- S. Traweek, "[Beamtimes and Lifetimes: The World of High Energy Physicists](#)"

**Thanks for making our
community a more inclusive space!**