US Belle II DEI Committee

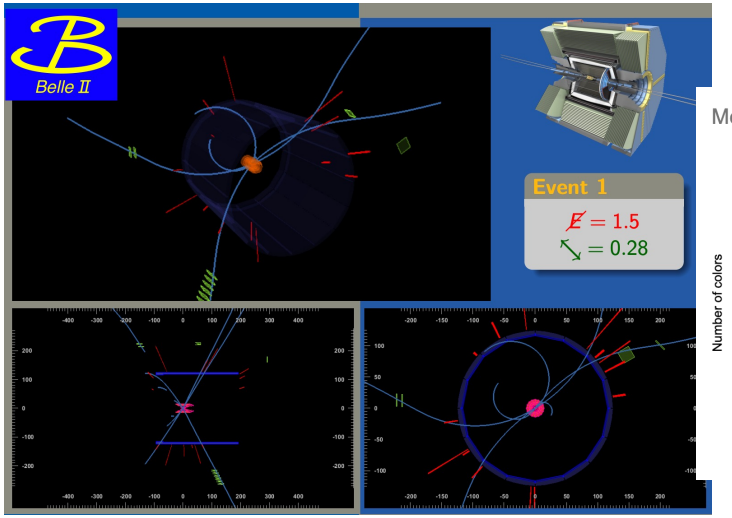
KK, Jake Bennett, Chunhui Chen, Tommy Lam

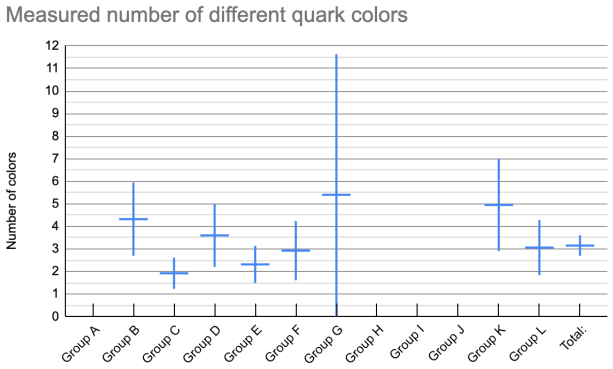
- Bridge Program Consortium
  - APS Bridge Program: to help departments develop bridge programs (≈MS level) for underprepared students to qualify for PhD
  - Consortium: group support to facilitate establishing & developing bridge programs at US Belle II institutions
- Develop relationships with physics departments at institutions that are minority-serving or historically-minority
- Belle II Masterclass outreach events
- Belle II Explorer: outreach event before this workshop
- Summer workshop DEI session
- policy issues, incidents

Belle II Masterclass

Masterclass event in March 2023: Ole Miss, ISU, CINVESTAV, Hawaii

- Public outreach event for high school students *and others*
  - Part of IPPOG (https://physicsmasterclasses.org/)
  - Expanding knowledge and interest in particle physics
  - https://confluence.desy.de/display/BI/BelleII+Masterclass
- Brief review of particle physics, Belle II experiment
- Hands-on activity with real data
  - Measuring the number of quark colors
  - Determining masses and widths





Belle II explorer event at Duke, prior to the workshop
https://indico.belle2.org/event/9672/

Inclusion: what does it mean in physics?

Belle II Summer Workshop 2023
Kay Kinoshita
University of Cincinnati

Please download worksheet

- write down your thoughts & reflect on them
- Discussion: share what you are willing to

What's the I in DEI?

ask Google about inclusion:

- "… the culture in which the mix of people can come to work, feel comfortable and confident to be themselves, and work in a way that suits them and delivers your business or service needs."
- "… ensuring that everyone has an equal opportunity to contribute to and influence every part and level of a workplace, and belonging is ensuring that everyone feels safe and can bring their full, unique selves to work."
- etc.

- what does inclusion mean in physics? (and how to achieve it?)
  - may be even less obvious

Community, culture, belonging in physics

Worksheet

1. At this point in your physics journey,
    a. Would you say that you identity as “a Physicist”?

    b. List and briefly describe your communities as they relate to physics, from the local to the global. Circle the one you interact with most, day-to-day.

2. To what degree do you feel you <u>belong</u> (1-6, circle one)
    a. In your physics peer group

        Not at all 1 2 3 4 5 6 fully belong

    b. In your physics research group

        Not at all 1 2 3 4 5 6 fully belong

    c. In the community of physics as a whole

        Not at all 1 2 3 4 5 6 fully belong

Why pursue inclusion?

- Lack of inclusion is now considered to play a primary role in the underrepresentation* in physics in the US from individuals with minoritized identities
  - US Black, Hispanic, Indigenous, female, LGBTQ+, disability

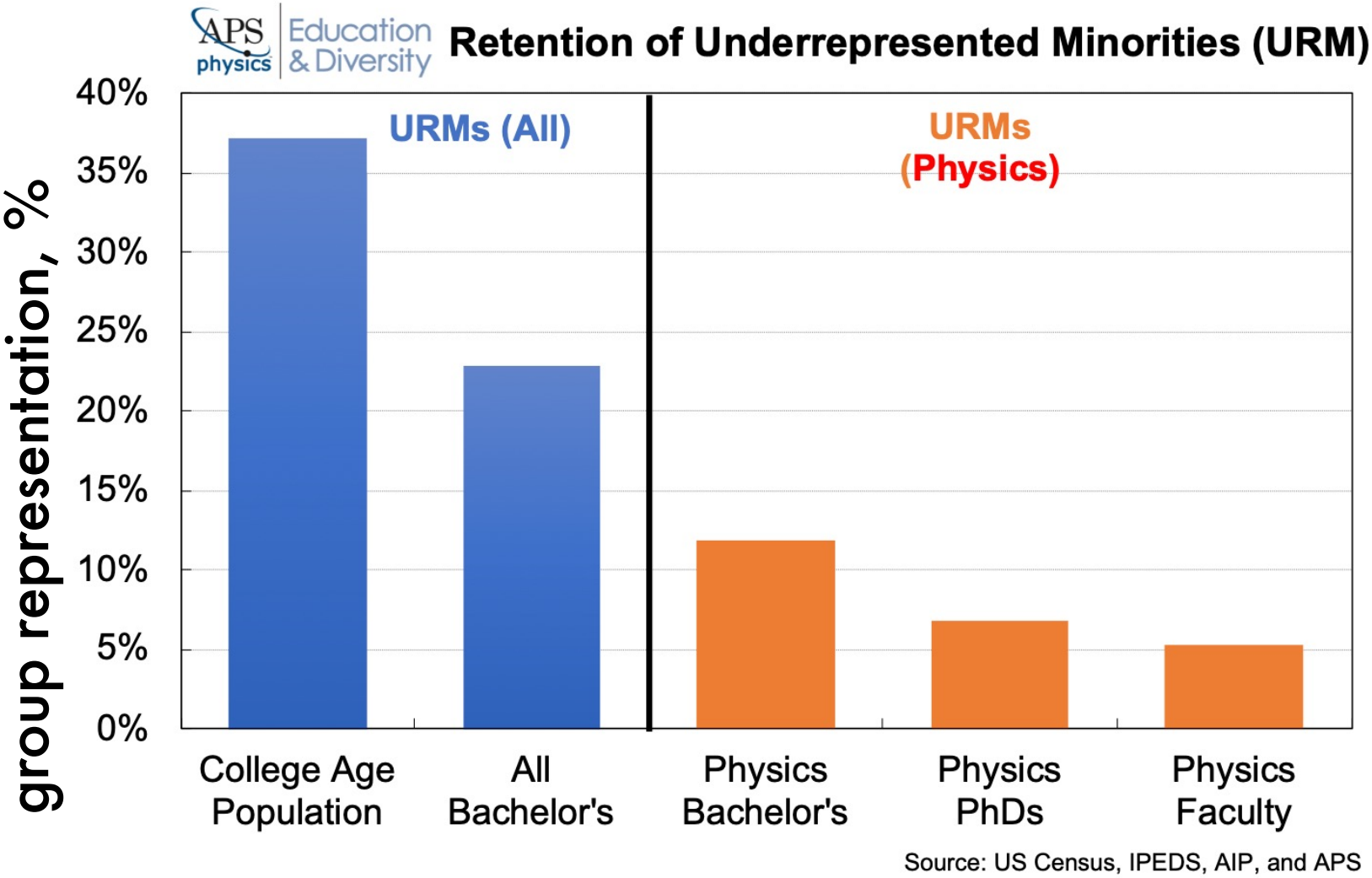
*Lack of diversity reflects underutilization of the US talent pool and deprives US science of diversity in scientific discourse

- How did we get here?

>50 years of efforts to improve US Physics diversity

- 1972 APS establishes
  - Committee on the Status of Women in Physics (CSWP)
  - Committee on Minorities (COM)
- 2013 APS Bridge Program
  - prepare underprepared students from underrepresented backgrounds (URM; Black, Hispanic, Indigenous) for physics PhD
- 2017 AIP Team-UP Project
  - uncover factors behind persistent underrepresentation of US Blacks
- 2019 – APS-IDEA
  - toward cultural change in physics: improve inclusivity & belonging
- Underrepresentation persists

US URM in physics: severe underrepresentation



Underrepresentation persists - why?

Reasons given: URM have

- Lack of "innate ability"
- Lack of interest

Underrepresentation persists - why?

Reasons given: URM have

- ~~Lack of "innate ability"~~
- ~~Lack of interest~~
- Lack of access √ (see 2022 B2WS)
  - economic class
  - discrimination
- Lack of inclusion
  - community, culture, belonging

Inclusion

- "… the culture in which the mix of people can come to work, feel comfortable and confident to be themselves …"

- culture: shared norms, values, beliefs, conventions
  - *cultural narrative: story by and about a community, through which members define roles and identities*

- let's put this in a context of US physics and history

The Rise of High Energy Physics

- 1940's WW II: Manhattan Project
  - federal funding for subatomic physics
  - US physicists + brain drain to the US
- 1960's: Sputnik & space race
  - more federal funding
  - proliferation of higher education
    - no shortage of US students wanting to study physics

US Physics education

- 1st half 20th century: higher education (elite)
- Manhattan project: (elite & imported talent)
  → top US physics departments
- Sputnik era
  - Plenty of students wanting to study physics
    - skim using "objective" criteria: grades, scores, school ranking (proxies for privilege)
    - numerical and objective are ***not*** the same
  - Still too many? don't be nice.
- 1980's – influx of international talent no reason to change

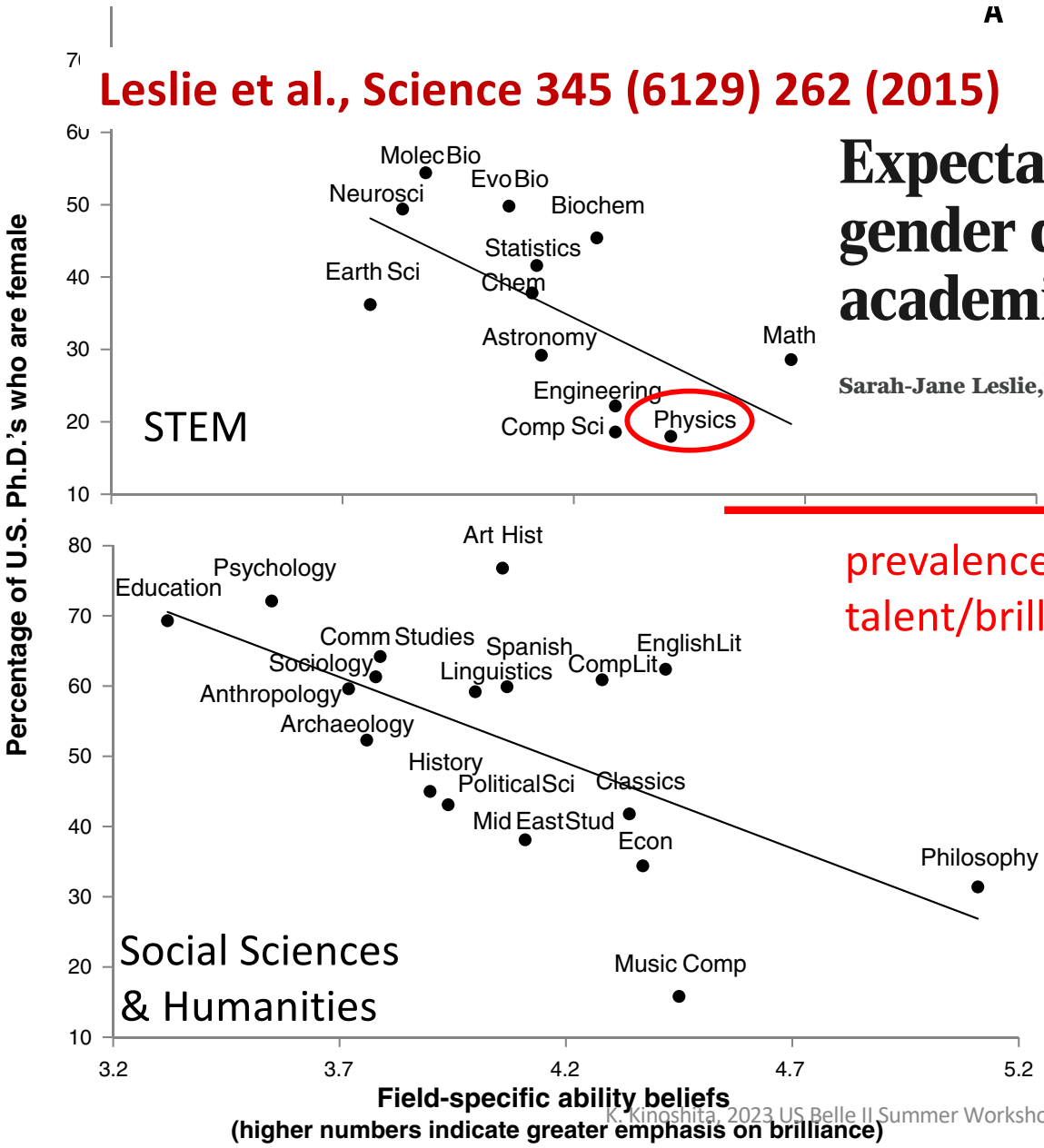
conventional narrative

- Culture of "no culture"
  - equal opportunity
  - Individuals succeed by "brilliance"

Leslie et al., Science 345 (6129) 262 (2015)

Expectations of brilliance underlie gender distributions across academic disciplines

Sarah-Jane Leslie,[1*†] Andrei Cimpian,[2*†] Meredith Meyer,[3] Edward Freeland[4]



prevalence of belief that special unteachable talent/brilliance is required for success

Culture of "no culture" implies

- success is on the individual
- "brilliance" an innate quality
- the community has no responsibility for developing individuals

- Unstated: really a monoculture
  - selective support and mentoring to "chosen" individuals

google doc

Worksheet

3. Describe the following and enter your responses in this google doc:
   a. a remark to you by another person (in the context of physics/science) that made you feel different, in a good way.
   b. a remark to you by another person (in the context of physics/science) that made you feel different, in a negative way.
   c. an event that made you consider leaving physics.
   d. an event that inspired you to enter or stay in physics.
   e. Rate your overall experience of events relating to your experience in physics on the scale from very negative to very positive (–3-+3, circle one).

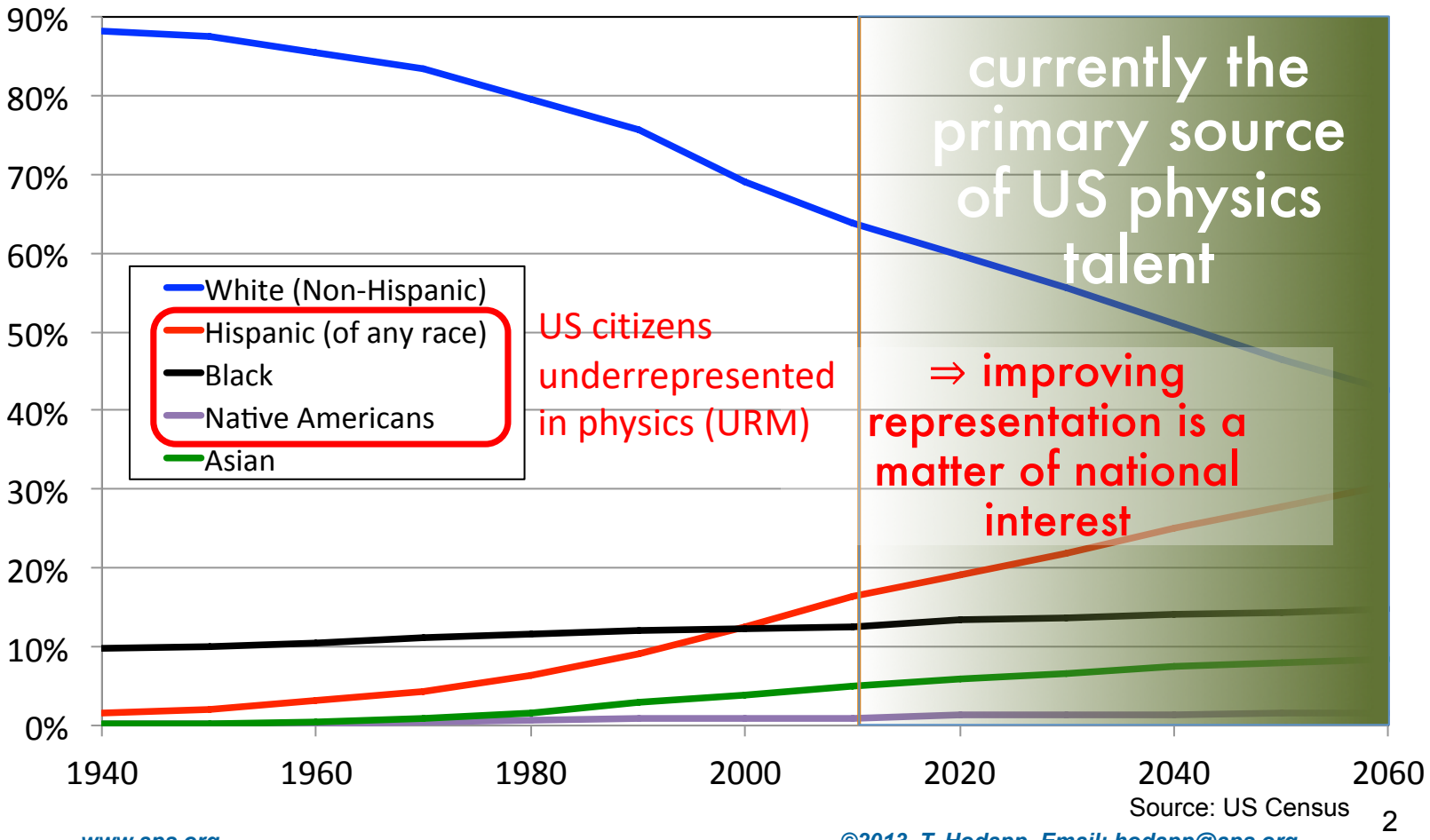
      very negative –3 –2 –1 0 1 2 3 very positive

cultural narrative

- who writes it?
  - the members: successful, powerful, privileged
- Who decides new membership?
  - the members
  - based on "past performance"
  - little incentive to change
- Why would a community evolve?
  - demographics, declining international pool threaten US dominance in physics

APS physics | Education & Diversity
PROMOTING PEOPLE IN PHYSICS

US Demographics



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www.aps.org

Cultural transformation

- A culture of inclusion (or not) is driven by the dominant group
  - dominant: not necessarily majority
- Lack of inclusion drives out the unincluded
  - so why is lack of diversity a surprise?
- transforming the culture to become more inclusive
  - is the responsibility the dominant group, not the un-included
  - everybody contributes to culture – this means YOU

Consider

"… the culture in which the mix of people can come to work, feel comfortable and confident to be themselves …"

? How can we recognize we are not excluding certain groups in a community where the journey itself creates so much doubt about belonging?

How can our culture become inclusive in spite of this seemingly disqualifying trait?

becoming more inclusive

work for ALL individuals; a journey, not a destination

Institutional

- acknowledgement that issues are real, not abstract
- active work in day-to-day community
- consider: better inclusion in physics benefits EVERYONE

In day-to-day communities

- "self-management" (needs support from community)
- inclusion awareness; practice makes ~~perfect~~ improvement

- what are you waiting for?
  - 1 action item for the coming year

4. Action item: write down one action you will take in the next year to advance inclusion in your day-to-day physics-centered community.

because …

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 **[physics.ed-ph]**
	(or arXiv: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

Need ideas?

an example for students

Background

for classes (UG + G) & PhD qualifying exam

- students exercise problem solving in groups
  - build interactive skills
  - recognize different approaches
  - teamwork, active learning: struggle together to gain skills & insight
  - empower self-learning

- BUT groups can be non-inclusive, cause some to disengage
  - personality differences; dominance behavior; maneuvering for status
  - cultural differences; microaggression
  - differences in preparation, learning style

APS-IDEA student project

APS-IDEA team student members (3 grads, 2 undergrads)

DEI Journal Club since Fall 2022

- specific topic/article each week on a DEI issue in STEM
- discussion, sharing of experiences
- cookies!
- promote journal club in freshman majors class
- Results
  - popular: attendance 5-30 (≈100 total majors)
  - robust discussions
  - awareness of issues, student solidarity

Summary

A community attains **Inclusion** when all members feel respected, have a sense of belonging, and are able to participate and achieve to their potential

inclusion is about culture in the community, not policies and mission statements

everyone plays a role, positive or negative

Thanks for helping to make the physics community more inclusive!