

UNDERSTANDING STUDENTS' RACIAL EXPERIENCES IN PHYSICS

CHANDRA TURPEN¹ & VASHTI SAWTELLE²

¹Department of Physics, University of Maryland, College Park

²Lyman Briggs College & Department of Physics & Astronomy,
Michigan State University

DEVELOPMENT TEAM

Angela Little, Michigan State University & University of Maryland

Abhilash Nair, Michigan State University

Jesús Pando, DePaul University

Katemari Rosa, Federal University of Bahia

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INTRODUCTIONS



SOME STARTING ASSUMPTIONS

- We acknowledge that we are all likely coming with different life experiences with and comfort levels with race and racism.
- Racial competence (a comfort with talking about race) can be learned through critical reflection.

Goal: Recognizing and talking about race as part of social interactions in everyday and classroom experiences

CONVERSATION NORMS

- **Step up/Step back**
- **Consider asking clarifying questions (at first)**
- **Remember the complexity and variety of people's stories who may share a racial identity (i.e. avoid inviting spokespersoning)**
- **Oops/Ouch**

LAST NORM

Try to talk about race

“...A theme from our multi-institution study of campus racial climates is that race and racism were deemed taboo and unspeakable topics. That is, students, faculty, and administrators reportedly adhered to an unwritten code of silence regarding racism, mostly to avoid making others feel uncomfortable.”

RACE: U.S. CULTURE → STEM CLASSROOMS



WHAT IS RACE?

Race is a fluid, sociopolitical concept invented during the 16th century by White Europeans to categorize human beings

US CENSUS & RACE

1970	Race: White, Negro, Indian (Amer.), Japanese, Chinese, Filipino, Hawaiian, Korean, Other (fill in the blank)
1930	Color or race: White, Black, Mexican, American Indian, Chinese, Japanese, Filipino, Hindu, Korean, Other (fill in the blank)
1890	Race: White, Black, Mulatto, Quadroon, Octoroon, Chinese, Japanese, Indian
1850	Color: Whites, Blacks, Mulattos
1790 - 1840	Free Whites (males/females), All other free persons, Slaves (males/females)

Note. The 1930 census was pivotal in several ways: 1) “Mulatto” was eliminated, and all people of mixed Black/White heritage were instructed to identify as “Black”; 2) a similar “one-drop rule” went into effect for American Indians, although some exceptions were made where individuals of mixed heritage could identify as White; and 3) “Mexican” was introduced as a racial category.

RACE IS SOCIOPOLITICAL

“With a scarcity of jobs during the Depression, more than a million people of Mexican descent were sent to Mexico. Author Francisco Balderrama estimates that 60 percent were American citizens.”

Balderrama, F. E., & Rodriguez, R.
(2006). *Decade of betrayal:
Mexican repatriation in the 1930s.*
UNM Press.

[http://www.npr.org/2015/09/10/439114563/
americas-forgotten-history-of-mexican-
american-repatriation](http://www.npr.org/2015/09/10/439114563/americas-forgotten-history-of-mexican-american-repatriation)

RACE: ALSO INTERPERSONAL

Prejudice, bigotry, bias

If you haven't seen the Harvard Implicit Association Test check it out later... <https://implicit.harvard.edu/implicit/selectatest.html>

Much attention has been paid on how organizations can put structures in place to minimize the impact of implicit bias.

But it is important to remember that implicit biases are NOT “fixable.” Implicit bias is always present subconsciously/unintentionally based on our socialization. We must develop practices of critical reflection to begin to see how it influences our interactions with others.

LINKS TO POWER



RACISM

Race prejudice, bias + misuse of power by systems and institutions = RACISM

Racism is NOT the same thing as individual race prejudice & bigotry.

All people are racially prejudiced (regardless of racial/ethnic identity). It is part of the air we breathe. It is socialized into every person. But this does not mean that everyone is racist.

Systemic power turns race prejudice, bias into racism.

Racial prejudice becomes racism when one group's racial prejudices are enforced by the systems and institutions of a society, giving power and privilege based on race to the group in power, and limiting the power and privilege of the racial groups that are not in power.

EXAMINING RACISM IN DAILY LIFE

Examine excerpt from “True Colors: Racial discrimination in everyday life”
<https://www.youtube.com/watch?v=UGI5XYNr-IQ> (Diane Sawyer, PrimeTime).

In what ways do we see racial prejudice or bias playing out in these clips?

In what ways can we recognize power differentials present in these encounters?
(i.e. How do some of the actors in these encounters have more power within institutions to create, manage, and distribute the resources necessary for life?)

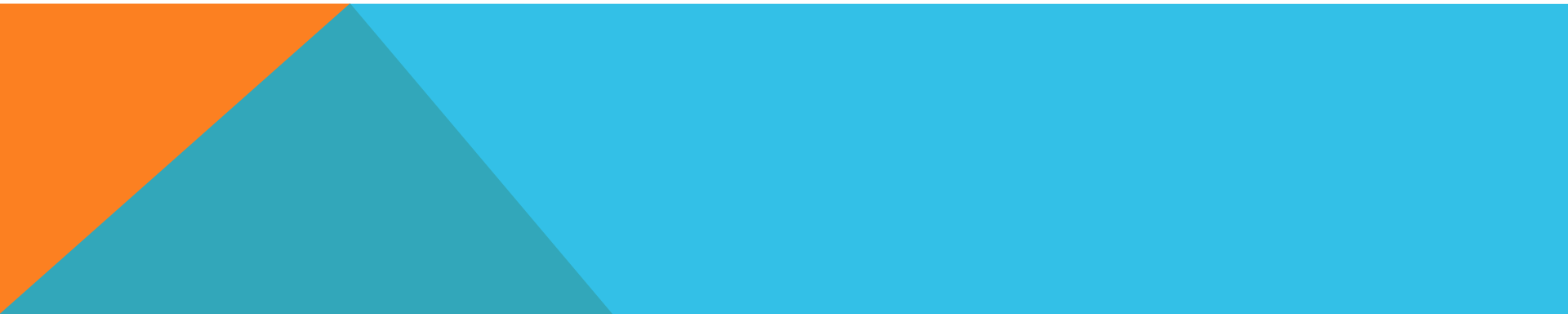


THINK-PAIR

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EXAMINING RACISM ON COLLEGE CAMPUSES



#ITOOAM

What are the kinds of stereotypes students are contesting on college campuses?





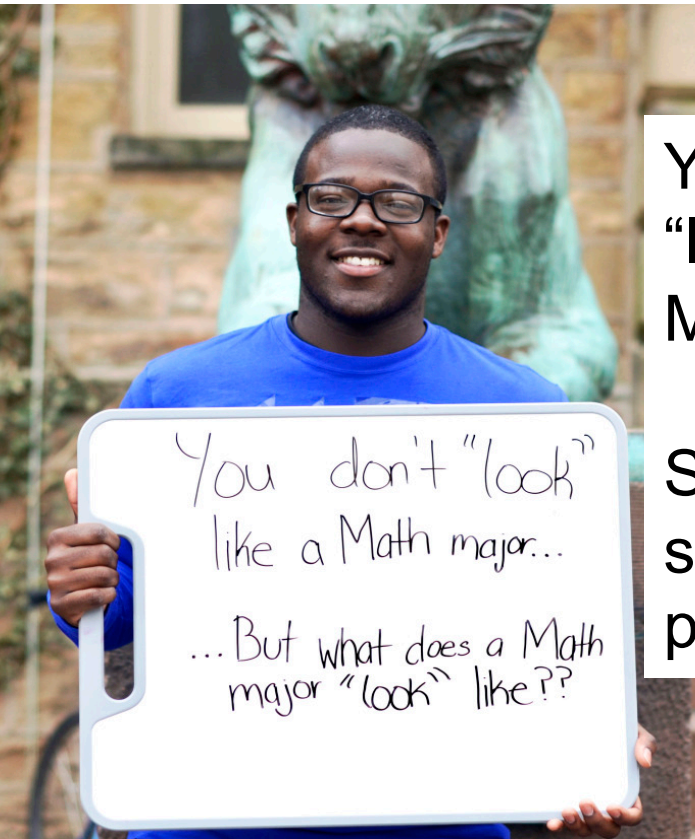
I'm not a
terrorist
because
of a
turban

Where
are you
from?



Where are
you from?

#I, too, am a Terp



You don't
"look" like a
Math major...

See? NOT the
same
person...

#I, too, am Princeton



See? NOT the
same person...

#I, too, am Princeton



“Pre-med isn’t for Everyone. Maybe Major in something relateable, like African American Studies.”

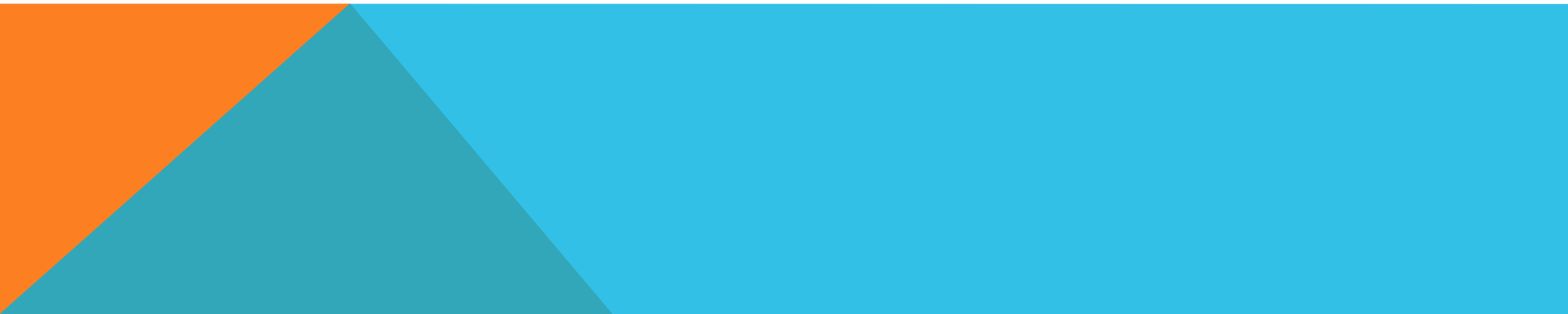
#itooamberkeley



“You didn’t have to try hard to get in.”

**#itoo
berke**

CASE STUDY: STEM CLASSROOM



BLACK STUDENTS IN PHYSICS – FRIES-BRITT ET AL

- **Interviews and/or focus groups with 250 underrepresented students (most of whom were STEM majors, many of whom successfully finished undergraduate degrees in STEM, and some of whom are working on their graduate education).**
- **Overwhelming majority of their sample identify as Black or African American; 65% are male.**
- **Most are “high-achieving” based on several criteria... enrolled in honors programs, or scholarship/fellowship recipients or GPA of 3.0 or better**
- **In collaboration with NSBP & NSHP between 2004-2009**

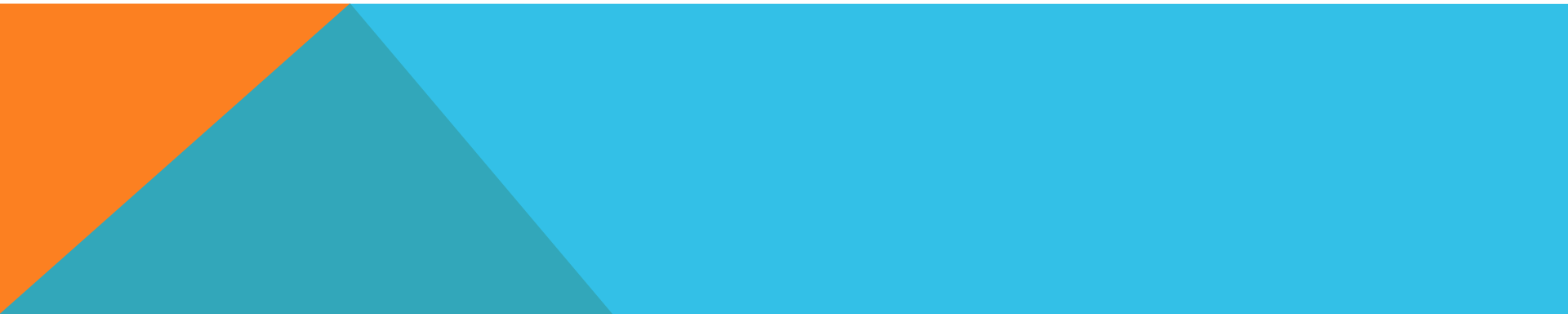


FOCAL QUESTIONS FOR CASE STUDY

Be able to explain how the case was racialized.

What kinds of experiences did the student have where race played a role?

How did other actors in the account play a role in making the student's experiences racialized?



PAIR-SHARE

Race at play?

- ⇒ Amount of eye contact
- ⇒ Only black student
(only woman as well)
- ⇒ The institution may not be dealing with race
- ⇒ Lack of time to consider implications

Actors

- ⇒ Professor
- ⇒ the rest of the students ↔ different than
- ⇒ the larger institution

RESPONSES TO JUNE

I am ready for class and everything sitting in the front row and the professor doesn't look me in the eye... he talks to the class... looking at the other students and he does it again [did not look at her]. I said [to myself] 'ok well maybe it's just the first day.' I go again and he does it again and I was like 'oh this is very strange' ... even when I... visit him during his office hours, it was a little awkward. It was as if he wasn't use to being around Black students or I don't know what it was but that really threw me off. But I guess that was just him.

Imagine June talks to a faculty mentor, tells them this story, and asks, "Is this something I should be worried about?"

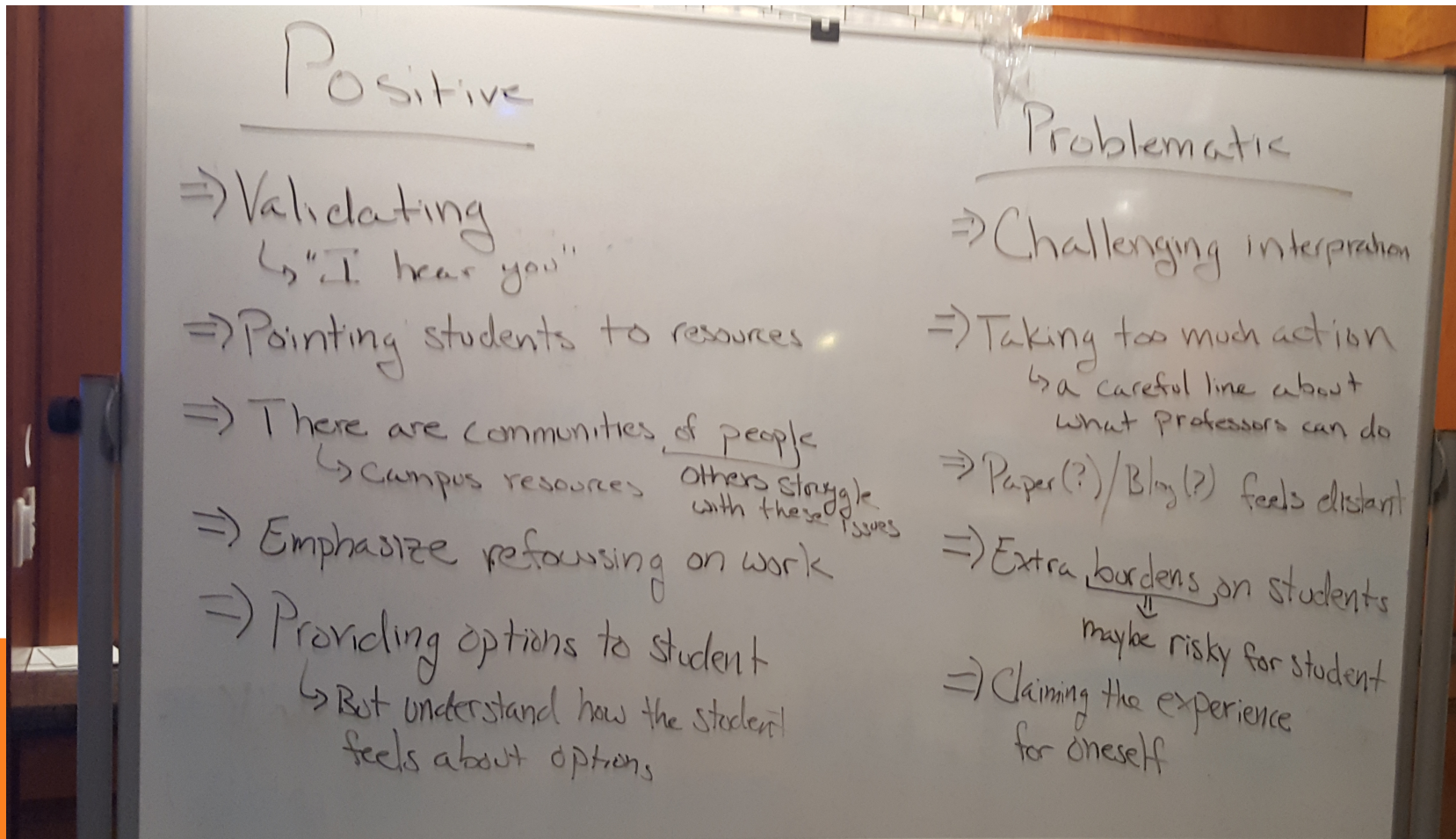


EXAMINE THE RESPONSES

- **Circle words and/or phrases that stand out to you**
- **Characterize your reaction to the things that stand out: positive? Problematic? What about the word/phrase strikes you as positive or problematic? Why is it positive? If it is problematic, would another word/phrase help make it better for you?**
- **Take June's perspective**
 - Consider how June might feel about the various responses
 - Strive to empathize with June's cultural and racial history, as imperfectly as you will be able to do so.

THINK-PAIR-SHARE

- What was positive or problematic in the mentor responses?



PRINCIPLES AND OPEN QUESTIONS FOR RESPONDING TO STUDENTS AND MENTEES IN STORYTELLING LINKED TO RACE



Principles for Students' Racialized Experiences

- **Invest time in developing relationships with students/mentees**
 - Take 5 minutes of your early lectures to articulate caring about these issues and students' broader well-being.
- **Provide space for emotional outlet**
 - Sometimes people need to be upset and express emotional reactions within a low-risk setting
- **Express empathy, avoid being dismissive**
 - Don't critique or question students' interpretations of events

Principles for Students' Racialized Experiences

- **Take it as truth -- race is at play.**
 - It can be isolating to be a victim of bias
 - Be aware of everyone's implicit biases
 - Don't try to 'explain away' someone else's behavior
- **Don't assume action needs to be taken.**
 - Ask for more input from mentee
 - Respect what THEY want to do about an issue
 - Assess risks to your students and yourself

Principles for Students' Racialized Experiences

- **Educate yourself**
 - Expose yourself to unfamiliar perspectives
 - Know about institutional or community resources that can support students
 - Know about the cultural practices of the community
- **Find people with similar levels of racial competence to practice with**

We welcome your feedback and continued conversations on these topics.

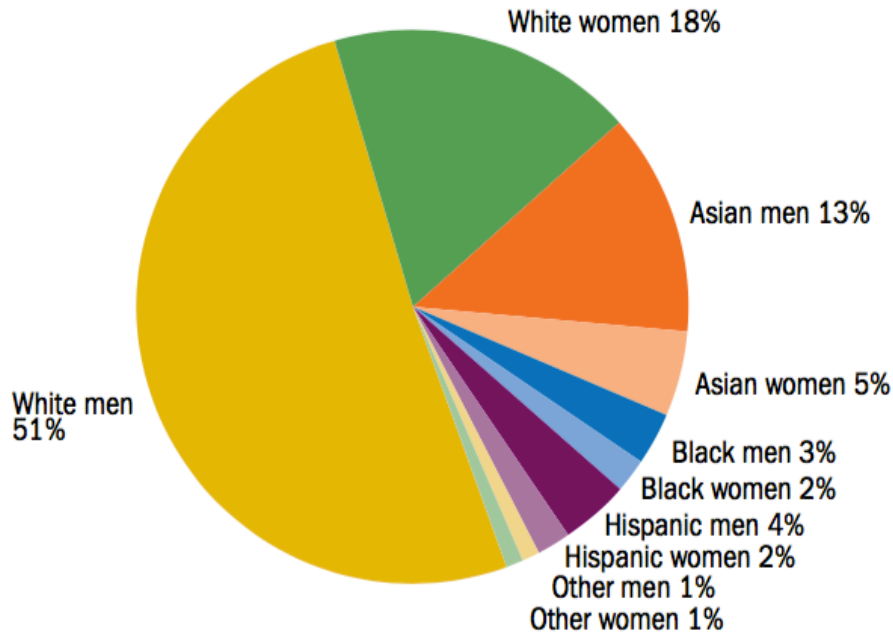
Chandra Turpen: chandra.turpen@gmail.com

Vashti Sawtelle: vashtis@msu.edu

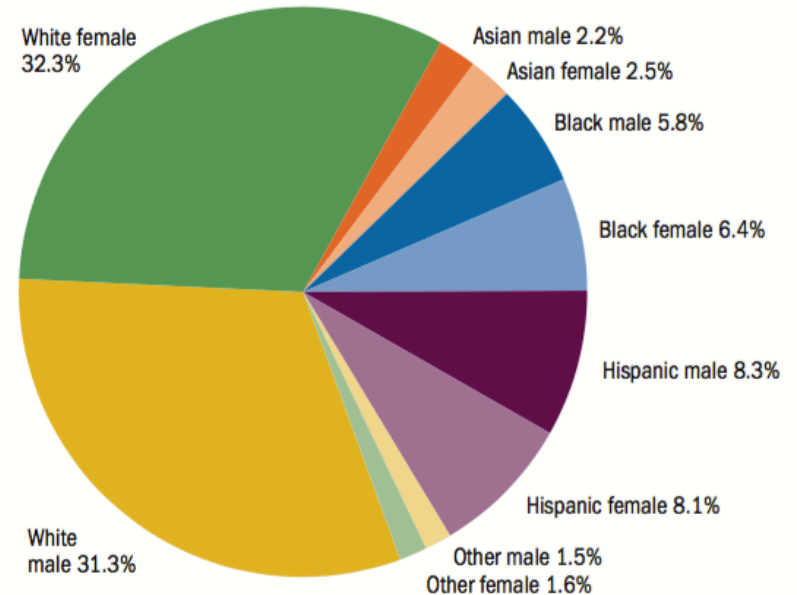


WHY SHOULD WE CARE ABOUT IMPROVING FACULTY'S INSTRUCTION?

Current U.S. STEM workforce



Current U.S. Population



NOTE: Hispanic may be any race. Other includes American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, and multiple race.

SOURCE: *Women, Minorities, and Persons with Disabilities in Science and Engineering*: www.nsf.gov/statistics/wmpd/.

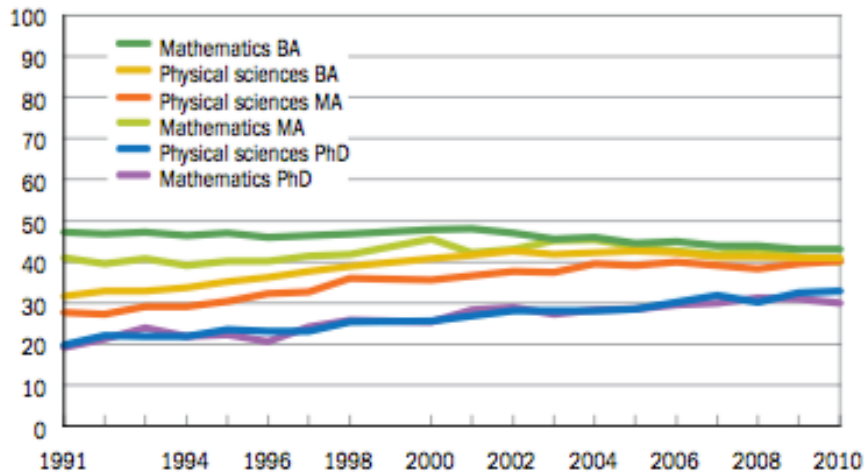
UNDER-REPRESENTATION IN PHYSICS

	% of US population (2004)	% of science and engineering degrees (2004)
African Americans	12.2%	8.78%
Hispanic/Latino Americans	14.1%	7.65%

	% of BS/BAs in physics (2006)	% of Masters in Physics (2006)	% of PhDs in Physics (2006)
African Americans	4%	3%	2%
Hispanic/Latino Americans	4%	3%	3%

WHY SHOULD WE CARE ABOUT IMPROVING FACULTY'S INSTRUCTION?

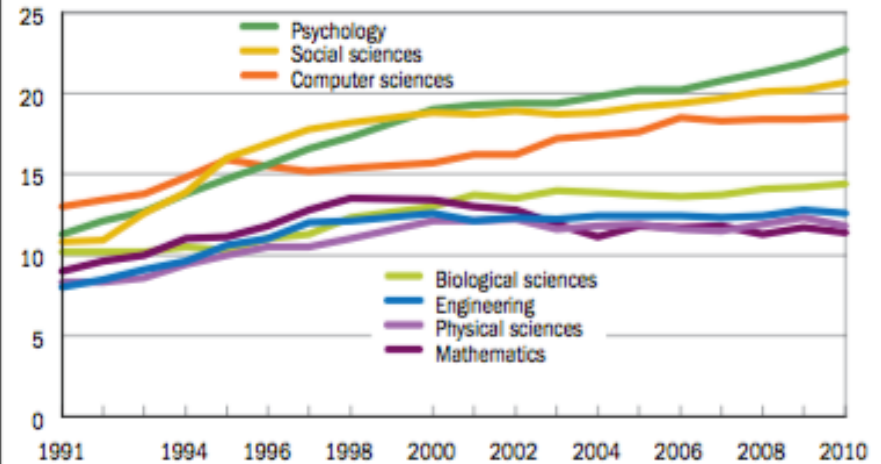
Under-representation of women in STEM



NOTE: Data not available for 1999.

SOURCE: *Women, Minorities, and Persons with Disabilities in Science and Engineering*: www.nsf.gov/statistics/wmpd/.

Under-representation of minorities in STEM



NOTE: Data not available for 1999.

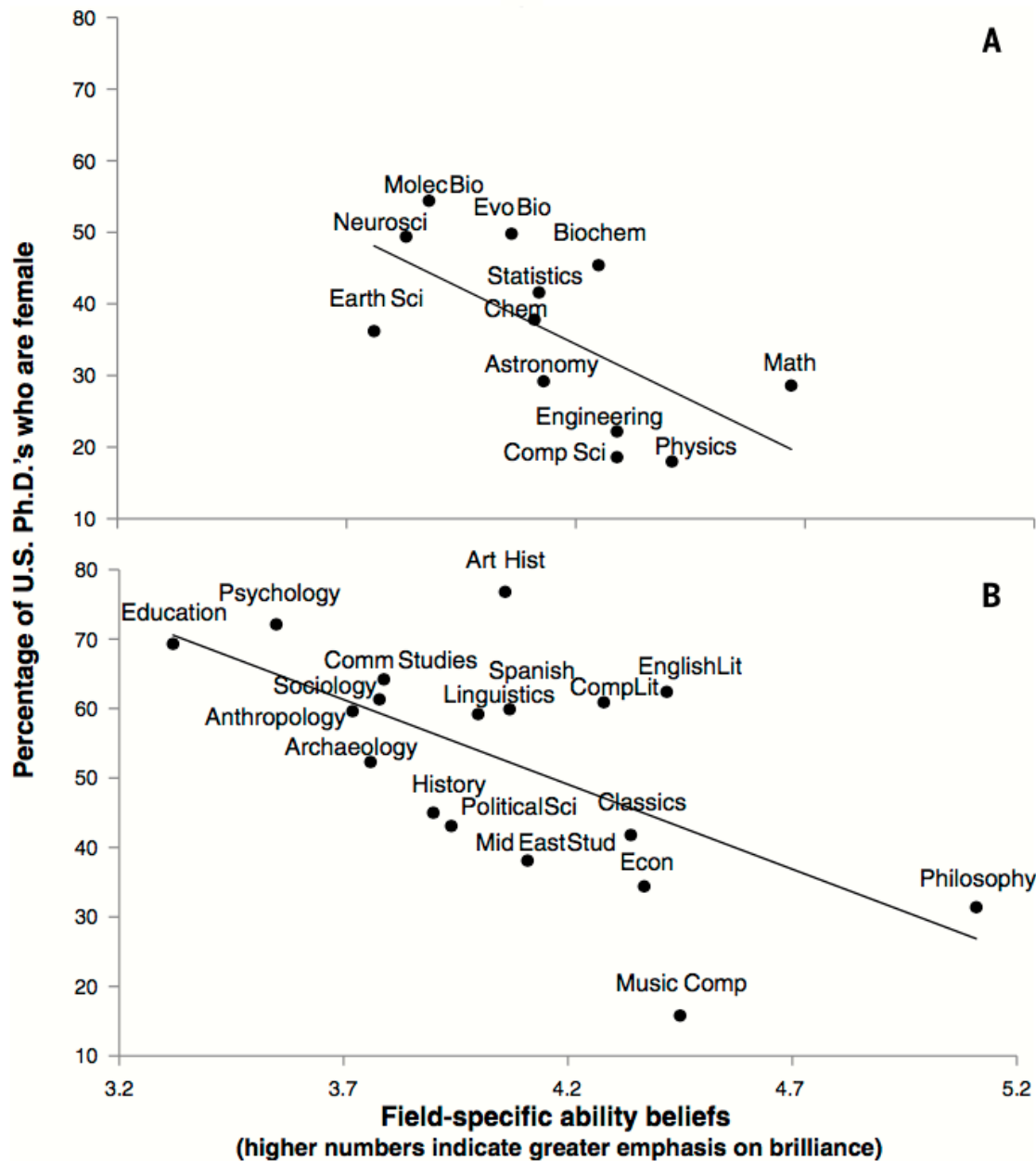
SOURCE: *Women, Minorities, and Persons with Disabilities in Science and Engineering*: www.nsf.gov/statistics/wmpd/.

CULTURAL NARRATIVES AROUND INTELLIGENCE

Table 2.

Discursive Alignment of Race and of Mathematics Learning in the United States

Dominant Discourse of Race	Foundational Concepts	Dominant Discourse of Mathematics Learning
Some racial groups are superior to others. Race provides an indicator of intellectual capacity. Race is a genetic trait that people are born with.	Hierarchy Intelligence Innateness	Some people do better at math than other people. Being good at math shows that you are smart. Math ability is something you are born with.



Leslie, S. J., Cimpian, A., Meyer, M., & Freeland, E. (2015). Expectations of brilliance underlie gender distributions across academic disciplines. *Science*, 347(6219), 262-265.

Fig. 1. Field-specific ability beliefs and the percentage of female 2011 U.S. Ph.D.'s in (A) STEM and (B) Social Science and Humanities.

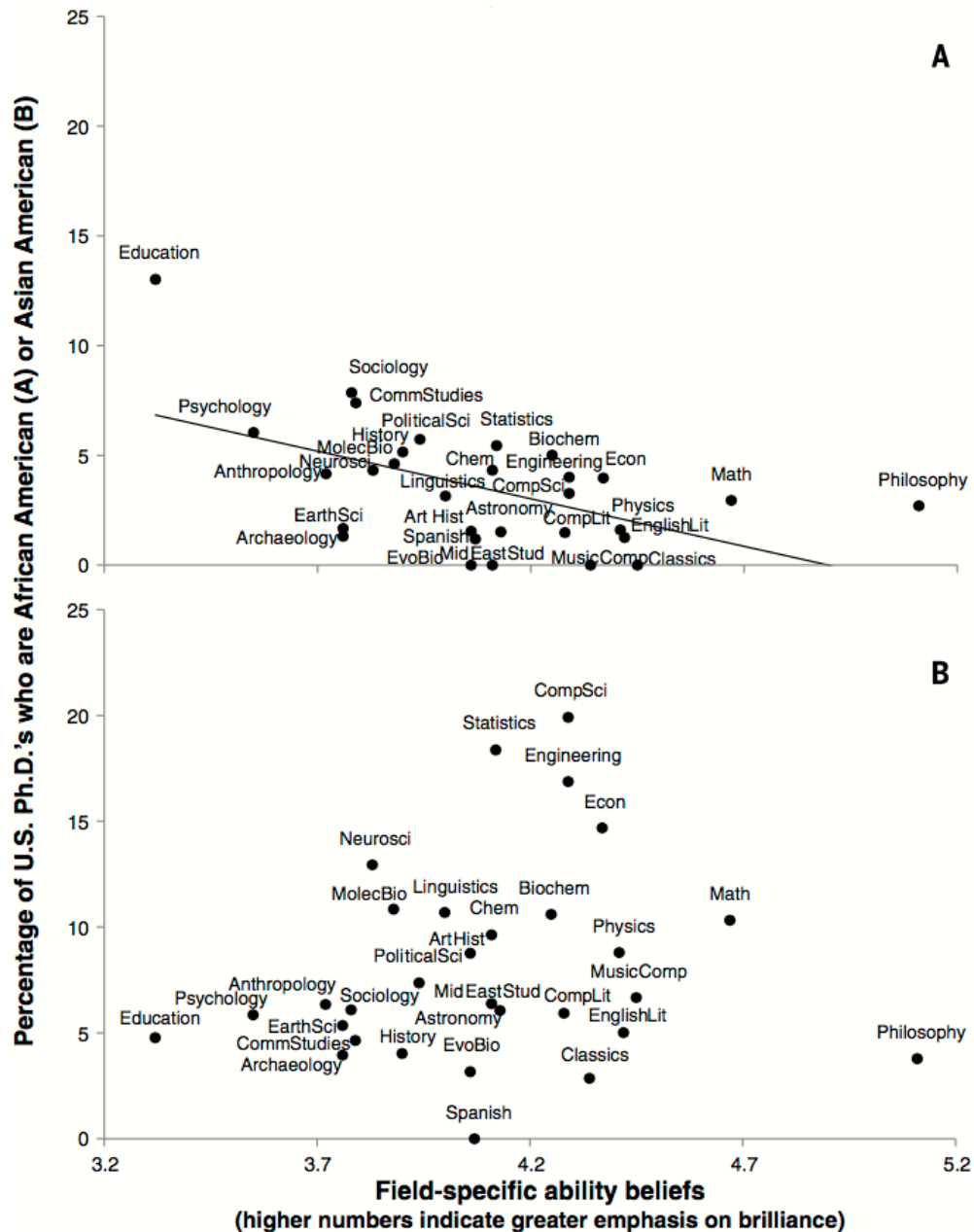


Fig. 2. Field-specific ability beliefs and the percentage of 2011 U.S. Ph.D.'s who are (A) African American and (B) Asian American.

Leslie, S. J., Cimpian, A., Meyer, M., & Freeland, E. (2015). Expectations of brilliance underlie gender distributions across academic disciplines. *Science*, 347(6219), 262-265.