Talking about Race in Earth and Space Science

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This is an in-progress document. Please let me know your questions or feedback here. This document does not specifically address anti-Blackness. I link readers to other resources written by Black people that more thoroughly address this at the end of this document. In the meantime, please donate to Black Lives Matter or other organizations fighting systemic racism. Please do not use parts of this document without proper attribution.

Earth and space scientists, especially in the U.S., need to be talking more about Race. Here's a couple (more) reasons why White folks in particular should engage:

1. **Inclusivity.** Earth and space scientists aren't diverse or inclusive with respect to race (Baber et al 2010; O'Connell, 2011; Kloek et al., 2017; Callahan et al, 2017; Guitard, 2018; Gates et al., 2019; Wilson, 2019). We were called out by Dutt (2020) in Nature and the New York Times. We haven't improved for 40+ years (Bernard and Cooperdock, 2018). Frankly, this is embarrassing. If you are feeling embarrassment or guilt also, please use that energy towards creating solutions.

2. **Environmental Justice.** Many of us study the Earth and our environment. As the effects of climate change, waste disposal, and resource extraction compound, we can see they disproportionately affect those who are marginalized, particularly People of Color (Colquette and Robertson, 1991; Fisher, 1994; Bullard, 1999; Pellow, 2004; Schlosberg and Collins, 2014; Banzhaf et al., 2019). Even the effects of COVID-19 are exacerbated by environmental injustices. We should keep this in mind when we concentrate our scientific endeavors to have optimal and just societal impacts.

3. **Support**. One thing we (as an Earth and space science community, as participants in higher education) should be doing to mitigate these disproportionate effects is supporting People of Color in our education system and to promote their views and ideas in STEM (Sieghart and Ganapin, 2011; Tanner et al., 2015; Mcdaris et al., 2017).

4. **Self-Interest (for the skeptical)**. Diverse teams have the potential to do "better" science, but problems still linger when it comes to race in the U.S. (Hong and Page, 2004, Campbell et al., 2013; Freeman et al., 2014; Lerback et al., 2020).

5. **Representation**. Highlighting and empowering scientists that are traditionally underrepresented provides a way for students to see themselves and their future careers (Schinske et al., 2016; Rice and Alfred, 2014; Wolfe and Riggs, 2017; Cano 2018; Nuñez et al., 2019).

6. **Mentorship**. If you shy away from talking about these subjects, you are being a sub-optimal mentor, especially for People of Color (Thomas, 2001; Jolly et al., 2004; Williams et al., 2014; Rainey et al., 2018; Starks and Matthaeus, 2018; National Academies of Science, Engineering and Medicine, 2019).

SO LET'S TALK ABOUT IT.

Are you excited? Maybe nervous? This is normal, and important ([Sue, 2013](#)).
Note: normalizing discomfort is one of many strategies for curating these discussions presented by [Harin et al., 2019](#).

I made this document to go over some concepts that I'm hoping will make these discussions a bit less awkward. I hope this will help to avoid or alleviate any anxiety that the subjects can produce, as well as maximize your learning benefits.

Please note that I'm presenting strategies and best practices I've assembled from literature and other resources (which are listed at the end of this document) that I believe will make discussing these topics easier.

AGREEMENTS

Often groups establish some "foundational agreements" before jumping into these potentially difficult conversations.

These may or may not be intuitive to you, but I believe that keeping these in mind will help the discussion go smoothly.

1. This is a learning environment

Keep in mind that we are cultivating a **learning environment.** In this sort of space, we should encourage ourselves and others to both share and learn.

If you **share** something, you'll need to let others know where you're coming from (because we don't all know you!). In light of this, you'll want to be self-aware:
- Be careful not to generalize your experiences or your anecdotal knowledge to a more broad population.
- Be honest with yourself about where you're coming from and where you're at.

You don't necessarily need to share your past experience, but at times that might help others contextualize what you're trying to convey.

We are here to learn and can't be expected to know everything already or else we wouldn't be here.

This might feel a bit vulnerable, but practicing **humility** is important to alleviate some of that. If you accidentally say something "wrong" (that hurts someone else), be humble and try to learn from the experience. We'll go over strategies for this later.

On the other side of that, it's helpful to recognize that alone we know a little, and together we know a lot. It is unreasonable to expect just one person to be an expert on being *perfectly*

respectful in *every* situation. That's why we're having this class discussion.

Frustration is also valid. Frustration with the state of race and privilege in the U.S. and all the things that go along with these constructs is very real and very valid. It's almost inevitable when people come from different backgrounds and try to communicate about something that is not often discussed. It might be helpful to verbalize what you're frustrated about to avoid it turning to anger in this learning environment.

2. Accountability

There's a part of frustration that comes with these subjects that can be directly addressed in this classroom. It is when someone uses a word or phrase in a way that is hurtful (whether this was intentional or not).

Every participant should be accountable to call out when a word, phrase or other form of communication is disrespectful. If you call this out, you would then need to explain how you perceive that word or phrase and why it might be problematic.

If you don't feel comfortable publicly having this clarifying conversation, please write it in an email to the instructors. We should then as a class be able to come to an agreement on what a respectful, inclusive, alternative vocabulary can be.

3. Share Speaking Time

Keep in mind: Often, those from culturally dominant groups can be unaware that they talk more than those from non-dominant groups (see Muted Group Theory in West and Turner, 2013). If you feel you are part of a privileged group in some way, consider talking less and listening more. If you feel you are part of a marginalized group, consider speaking up more than you might otherwise.

During the class discussion, you might ask yourself... "WAIT" (Why Am I Talking) or "WAINT" (Why Am I Not Talking)? This might help you notice conversational dynamics that connect to the themes of identity, privilege, and dominance.

4. Privacy

These discussions can be quite vulnerable and sensitive. People might share personal information in this environment. Please don't share this sort of personal information about others outside of this environment (you're more than welcome to talk about yourself).
By doing this, we will ensure the respect and privacy people engaging in these hard conversations deserve.

VOCABULARY

Now we're going to talk about some vocabulary that will be useful to have a common understanding of while talking about race and privilege.

Sometimes you might be nervous to say the wrong thing…this is normal! As we discussed earlier, this is a learning environment, so I encourage you to not let this stop you from making your contribution to the discussion.

If you're unsure of a word, try to use adjective descriptors of a person or a community. Be as precise as you can.

Again, the classroom is a *learning environment.* Ask for the help you need, for validation of your vocabulary, or for a better word that can be used.

I'll go through a couple of word pairs that I've decided are particularly useful to have a common understanding of. I hope this context will be useful, and it might help you figure out how to use more precise descriptions when you are needing help.

RACE ~ ETHNICITY

Let's use both of these words as adjectives, not nouns. They describe a facet of someone's identity but do not describe the fullness of any one, real person. For instance, I might describe a group by saying "White people" rather than "Whites", or "Black people" rather than "Blacks". Additionally, both of these adjectives could be replaced with something more precise, depending on the situation and context. Using adjectives rather than nouns leaves room to describe people as more than just one "thing", as people are generally quite complicated. Under this logic, I now also get to be a "nerdy, chronically late, cat-preferring, outdoorsy person", rather than simply demographic (usually noun) boxes.

It's helpful to think of "race" and "ethnicity" as a way to talk about **Perception vs. Identity.** In this way we can think about these as related but different words in the class setting.
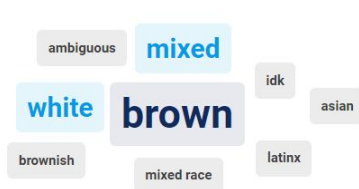
We can use the word "**race**" to talk about how one is perceived based on looks (phenotypes and presentation). One's race is largely dependent on how one is treated socially.

Race categorization is dependent on cultural reference points that vary geographically. For example, race categories in the U.S. often do not apply outside the U.S., which have different formational histories. So be mindful of your own cultural delinations versus your audience's.

One's race might often be described as able to be "divided into parts". This is because of the historical rhetoric related to genetics (and eugenics).

We can use the word "**ethnicity**" to talk about cultural identity. One can have multiple ethnic affiliations, but ethnicity is usually not divided into parts. Ethnic affiliation is often maintained and expanded in different cultural contexts rather than lost or divided.

What are you?

ambiguous · mixed · idk · white · brown · asian · brownish · mixed race · latinx

What am I?

brown ish · southern california · asian · mixed · white · mixed race · hapa · hawai i · multi ethnic · filipino/pinay

Who am I?

cat · nerd · organized · warm · non competitive · lady · social justice · art · travel · sister · scientist · team · run · smiles · outdoors · late · swim · daughter

<u>*MARGINALIZED ~ MINORITIZED*</u>

The words "marginalized" and "minoritized" in this context refer to social groups.

I see the term "**marginalized**" as talking about power structures; marginalized groups could be a majority group (maybe like peasants in feudal society), but they are a group that doesn't have power or maybe even autonomy.

Let's compare this idea to the second word, "**minoritized**". This is referring to numbers! Numbers can be played with...it depends on how you categorize people. For example, if you are a white, cisgender man in a diversity conference in the U.S., you might well be a minority if you look around the room. But, in this case, recognize that the *temporary* minority status does not make you a disadvantaged group or marginalized community. Here is where power constructs and social context must be recognized.

One last note: I use these two words as verbs as opposed to nouns like "minority" or adjectives like "marginal" groups because it implies actors and action- as the process of creating majority or privileged identities requires actors and is often (on a structural level) intentional.

STEREOTYPES ~ STATISTICS

These are less about definitions and more about understanding relationships.

Some of these ideas I'm presenting have been discussed in <u>Testosterone Rex</u> by Cordelia Fine and <u>X+Y</u> by Eugenia Cheng, but with respect to gender. I think these apply to race and other marginalized groups as well.

Stereotypes are not real. These do not represent real people. People are complicated and you do not know them. Figure out where stereotypes are influencing your actions and thoughts, and do not treat people in any way that is informed by stereotypes.

Statistics of groups of people sometimes inform stereotypes. Statistical correlations are not stereotypes but similarly do not represent real people. I find it helpful to think about statistics as illustrating and illuminating structural problems, and are useful for marginalized folks to navigate those structures (such as <u>hidden curricula</u>). On the other hand, statistics should not be applied to individuals, as no person is (or can be) as 1-dimensional as an "average". Statistics show distributions (of people by race, for example) that often overlap as seen on the image below.

Statistics can be useful in anticipating barriers to success, such as realizing that People of Color are more likely to have family or friends that have been impacted by health and economic crises. This anticipation can help design support programs to offer resources combatting those barriers. However, these statistics should not dictate that those resources should be offered specifically to an individual (such as a student of color), unless they ask or make it clear that that assistance is needed. If you offer that resource to a student of color who doesn't need it, because you associated them with the statistics, you are making simple assumptions about their complex reality, which can be hurtful.
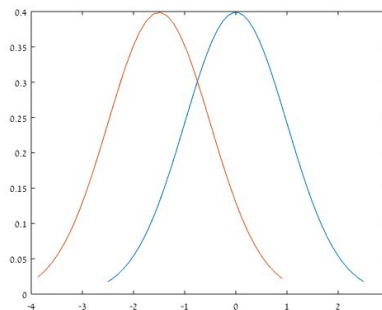
INTENT ~ IMPACT

Everyone makes mistakes! Your **intent** while talking to someone may be to connect or oblivious to historical social contexts, but you might accidentally (hopefully not intentionally) make them feel like they somehow don't belong or are otherwise insulted. The negative feelings are the **impact** of [microaggressions](#) (small insults or invalidating communications that have cumulative effects over time).

Try to treat mental and emotional well-being similarly to physical well-being. If you realize you have hurt someone, you'll want to:
1. Recognize how the microaggression happened (whose stereotypes or social histories are involved?),
2. research the history of why what you said could be taken as problematic, and
3. apologize (but not excessively). This might include asking that person (or group) what they would want you to do next.

Take care of the hurt person first.

EXERCISE 1: What do you need from others when you are hurt?

Write below or on a separate document:
What do I want if I am hurt (physically, mentally, emotionally)?
(Don't worry, you won't need to share these with anyone!)

If this was a bit challenging, and you need a little bit of inspiration, I'll go ahead and share some of my own answers...

If I realize that I'm the target of a microaggression, I want space, time, and/or distractions. You might need something different.

This exercise is useful to answer the following question:
How can we best help the impacted person?

I hope reframing this question will help you, should you make a mistake and make someone else in the discussion feel hurt, understand how best to manage the situation.

FRAMEWORKS

To think more broadly about how race and privilege are related... you may want to go over the idea of "frameworks". We can think about "theoretical frameworks" as they set up variable types, possible relationships, and are broadly transferable. The theoretical framework that we will relate to race and privilege is a "bias" framework.

Here's a definition of "bias" from the Oxford dictionary (2019):

A prejudice, inclination or preference, especially one that interferes with impartial judgment.

We can break bias into two main types: *explicit* and *implicit* bias. Explicit bias refers to attitudes and beliefs about a person or group on a conscious level, whereas implicit, or unconscious, biases often do not align with conscious values.

Below, I've set up a simple framework for us to start thinking about bias.

THEORETICAL FRAMEWORK: BIAS		
SCALE	**EXPLICIT**	**IMPLICIT**
MICRO		
MESO		
MACRO		

Our *variables* are implicit and explicit systems, and we can think of them *across scales*.

EXERCISE 2: MAKING A CONCEPTUAL MODEL

Now we'll transition this system to a conceptual model of racism.

The conceptual model is more specific than a theoretical framework.
So, you might imagine that this *broadly transferable theoretical framework* can work for different sorts of "-isms" too.

The conceptual model is a tentative or abstracted representation of observed phenomena. It defines variables and their relationships as were structured in the theoretical framework. You could think of a conceptual model as more of a "filled in" version of the theoretical framework.

Stop here and fill in each box with example phenomena, and define the relationships between the boxes (What causes what? Which boxes are most related?). I've started you off with an example in the first row. You can add to it as you see fit!

CONCEPTUAL MODEL: RACISM		
SCALE	**EXPLICIT**	**IMPLICIT**
MICRO (individual)	using racial epithets ← *validates*→	microaggressions
MESO (group)		
MACRO (structural)		

If that made you a bit unhappy, we can flip this model to something more constructive!

Try this:

CONCEPTUAL MODEL: ANTI-RACISM		
SCALE	**EXPLICIT**	**IMPLICIT**
MICRO (individual)	Bystander intervention ← *validates*→	Building genuine connections with someone different than yourself
MESO (group)		
MACRO (structural)		

TRANSFORMATION

Transformative capacities allow marginalized groups to design solutions to the underlying causes, such as explicit and implicit bias. Transformative capacity within the context of diversity refers to the ability of marginalized folks to design large-scale institutional or management changes in response to bias and stressors. This form of resilience still prioritizes and centers marginalized communities but also includes the larger academic structures and community.

It is the responsibility of people and organizations in power to VALUE transformational ideas and put them into action. Otherwise it is simply more free labor by those who are already under-resourced.

EXERCISE 3: POLICY DEVELOPMENT

1. First, Consider early-career scientists as a disadvantaged group, as these academically "young" scientists *might* lack the technical skills and social networks to immediately be a highly valued individual in academia.

2. Now, think of all the ways in which institutions foster young scientists' success.

Please write these down

(Maybe you think about new student orientations? Travel grants? Advisors? Internships?)

3. Use this perspective to spark ideas of how to foster resilience in other minoritized groups. How could these fit into a transferable framework?

Please write these ideas down, or Tweet them!

Of course, age is a part of one's identity that invariably changes with time, so it isn't a perfect comparison to other forms of identity which are impossible (or quite difficult) to change. However, I do hope this is a valuable way to reframe our collective mindset. and to practice designing supportive environments for marginalized folks.

Wishing you all the best!

I hope this has been useful to you. Please let me know your questions or feedback here. If the link doesn't work, please copy/paste the url below.

https://docs.google.com/forms/d/e/1FAIpQLSfy1LaXO1f3HaKPNAp3hRGBhXHNIX2uiX3f-YeXm AF_WW-MNg/viewform?usp=sf_link

MORE RESOURCES

- Self-Evaluation
    - Project Implicit Tests
    - McIntosh, P., 1988. White privilege: Unpacking the invisible knapsack.
- Campus Resources
    - Beginning Environmental Justice curricula - a webinar from NAGT
    - Office for Inclusive Excellence
    - REPORT A BIAS INCIDENT: RespectU.Utah.Edu
        - Anonymous
        - Can advise or take actions
    - Email respectu@utah.edu for self-reflective consultations
- Readings and Viewings:
    - Oluo, Ijeoma. So you want to talk about race. Seal Press, 2019.
    - Savoy, Lauret. Trace: Memory, history, race, and the American landscape. Counterpoint, 2015.
    - DiAngelo, Robin. White fragility: Why it's so hard for white people to talk about racism. Beacon Press, 2018.
    - Code Switch- Hold Up! Time For An Explanatory Comma
    - Sue, Derald Wing. Race talk and the conspiracy of silence: Understanding and facilitating difficult dialogues on race. John Wiley & Sons, 2016.
    - Instagram (just a few examples)
        - Rachel Elizabeth Cargle
        - Andre Henry
        - IndigenousWomenHike
        - Unlikely Hikers™
        - Mari Copeny
        - Allen
        - Pattie Gonia
        - James Edward Mills
    - USC- Diversity Workshop

- ○ [Teaching Tolerance- Let's Talk!](#)
  - ○ [Vanderbilt- Teaching Race](#)
  - ○ [The Cornerstone for Teachers- For White Teachers Teaching Race](#)
  - ○ [Teaching Channel- Talking About Race](#)
- [Anti-racism Resource Guide](#)
- [Anti-racism Resources for White People](#)
- [Resources for POC in STEAM](#)
- [Anti-racism resources for all ages](#)

ACKNOWLEDGEMENTS

I wrote this so that both leaders and learners may have some guidance for entering and getting the most out of these discussions.