

## Q&A- unanswered questions

Can you elaborate on the reasoning behind using the term "black bodies" instead of "black people"? Using 'bodies' instead of 'people' seems objectifying and dehumanizing.

Great comment. When I use the term bodies, it is not as a juxtaposition to the concept of people. It is, however, to point out how racial identity, in particular, are projected onto individuals given the physical bodies that they maintain. Sara Ahmed (2002) uses the term “racialized bodies” to emphasize this point of race being a social construct that extends beyond biological (e.g., morphology and skin tone) concepts.

Ahmed S. (2002) Racialized Bodies. In: Evans M., Lee E. (eds) Real Bodies. Palgrave, London. [https://doi.org/10.1007/978-0-230-62974-5\\_4](https://doi.org/10.1007/978-0-230-62974-5_4)

thanks for this talk, Dr. Morton. I’m curious.. is there a need to distinguish between whether science culture is objective versus scientific findings more generally, or should both be understood as subjective? I’m thinking about the current climate that allows this administration to discount “science” and to suggest that many of the concerns around covid might be subjective.

Thank you! I appreciate this critical point that you brought up. This question and example that you provided has several layers that I will attempt to tease out and respond to given both this talk and other research and work.

Regarding your point about whether or not science culture vs. science findings should be seen as objective or subjective is inadvertently linked; however, what I believe you might be asking is whether or not this presentation is arguing for us to “not believe in” science because of its convoluted history. If I am correct in this surmising then I will share that as a scientist, I believe in the science. But I also believe that what we currently accept and recognize as science content and practice is but one way of doing and understanding science as there are other indigenous and ancestral ways of knowing, doing, and being that have been rooted out from conversations and teachings of science given the culture of whiteness embedded within and manifesting through science research, teaching, and practices. By taking a very hard stance surrounding this idea of it being one universal truth, we have discounted and rejected histories, perspectives, and practices that represent the pluralistic nature of human life and existence. And it is this same perspective of a universal truth and objectivity that the current administration relies on to advance its political agenda (i.e., the belief that they know the truth combined with them having the power that comes from maintaining dominant ideologies in expecting all others to fall in line with their idea). To this end, the question is no longer about whether or not the science is factual or not. The question, instead, is about power and ideologies, and how, philosophically, we as a society have reached this particular perspective in which power is hoarded.

Regarding COVID-19, there are hard facts regarding what we understand as scientific outcomes; however, these hard facts stem from practices and perspectives that are socially, culturally, historically, and politically rooted. To this end, given the circumstances in which we currently exist (where we are with the scientific knowledge generation process) there are facts regarding COVID-19 and how it impacts the body (scientifically), and there are facts regarding COVID-19 and how it affects society (public health wise). To choose not to accept those facts is a political decision, not a scientific one.

How can we best convey your message from white male colleagues who might not be conscious of all that you've talked about?

This is a great question. In my experience, there is a difference between the willingly ignorant and the unknowingly ignorant. Those who are unknowingly ignorant are such because their dominant identities afford them the privilege of not having to know about the experiences of those minoritized in order to successfully operate within this world. Those who are willingly ignorant are such because they have been exposed or had the chance to be exposed and have chosen not to listen or make changes. How you approach the two groups vary. For those that may be unknowingly ignorant, I suggest that you pass along resources, readings, movies, and other resources that communicate these experiences, and then invite them into conversations with others about this content. You specifically do not have to be the person to hold the conversations, but, it could be a matter of identifying experts on your campus or nearby to host seminars, workshops, etc. where they too can engage in critical conversations to help advance their understanding. I would suggest not engaging those who are willingly ignorant unless you are in a position of power to prompt conversations, or have the resources to demonstrate the connection between these ideas and concepts/practices that they value. My suggestion for not engaging the willingly ignorant without the proper insight and support is so that you can ultimately protect your peace of mind and safety. Recall, they have already been exposed. How can you tell the difference between the two? Watch how people act and respond to discussions of DEI in other spaces.

Any thoughts on how we can help our students effectively become social justice advocates? (without using master's tools?)

Ohhh, I love the Audre Lorde reference here! I have actually had several conversations with friends about what exactly are the "master's tools." Regarding thoughts on helping students become social justice advocates, in some of the classes and other educational spaces where I engage students, when talking about social justice, I focus on power, voice, and platform. We work on developing a critical consciousness around those three concepts so that they can be aware of how systems of oppression operate. From there, we then focus on strategies for enacting and using our voice to foster change. Such strategies range as I am a firm believer that a multipronged approach, converged under a clear distinct, shared goal drives change. In these spaces, while I maintain insight and knowledge on the topic, I do not position myself as the expert. Instead, I position myself as a facilitator and co-learner. As the facilitator, I attempt to disrupt deficit oriented, or in the box type thinking and perspectives, and challenge the

students to radically dream and work towards making that a reality. This process involves several creative activities and endeavors, as well as physical activity, to get the blood in the brain moving.

Awesome presentation!

Thank you so much!

You mentioned that one of the values of science currently communicated is that of grit/resilience. What of embracing failure? When talking to STEM faculty (and scientists in industry), they mention that their experiences around failure were most formative for their progress as scientists and basically developing their scientific epistemologies. But that doesn't get communicated in these large intro science courses. Could being explicit about the role failure plays in science help students? And how could we present failure's role in a way that embraces the multiple identities of students and shows them that they are part of solution to the structural injustices of science?

Great question and idea. I have colleagues who are discussing this idea of normalizing failure in science inquiry and practice. I believe that this perspective can be beneficial in helping students depending on how the concept of "failure" is introduced. I put failure in quotations marks because to some degree, the idea of failing is directly equated to not succeeding or meeting one's desired goal and outcome. From this perspective, people talk about failure as a negative thing and encourage individuals to continually work towards success (if at first you don't succeed, get up and try again). This perspective assumes that the individual has the power and agency to make the success happen within their environment, and in essence, it is only their effort or strategy that needs to change. In breaking "failure" down from this perspective, we see how this same concept becomes connected to meritocracy and the bootstrap mentality of liberalism that for Black students, can facilitate social-psychological trauma. "Failure" from the perspective that there is no specified end point that one must reach, but instead the various processes that one conducts provides newfound thoughts, insights, and perspectives that raise different questions and concepts to explore, provides a different take. This take on "failure" in essence is not failure at all, but rather continual growth, development, and exploration. If we normalize this perspective, then we are in fact disputing a universal truth (because there is not set targeted goal to reach) and instead are using the tools and resources provided to gain a perspective of the natural world and its possibilities. This would require embracing the students' ideas, perspectives, and engagements, and honoring them in the same way that we as a community currently honor existing scientific practices and content.

How can neuroscience help individuals understand racism's promotion and persistence?

Great question. In some ways, neuroscience can help us examine how people learn (e.g., thinking about the connection between the senses, understanding/interpretation, and memory) that could be used to develop teaching tools and strategies that can be used to help people recognize structural racism and then combat it. For example, despite having all five

senses, most educational materials rely on sight and hearing to convey instruction unless there are specific accommodations developed for those who have differential abilities. Research and work in neuroscience can help dream and create new processes for teaching and communicating that support the standardization of practices that benefit individuals no matter their differing abilities.

As my work is designing chemistry curricula, I have a lot of research on how to support students' knowledge-in-use. Other than eliminating merit-based grading and the weed-out culture (a huge undertaking), is there a set of practices I can embed within the curriculum to support this work? Examples of how chemistry contributes to racist science?

Great question. I am glad that you are looking to advance this work within your curriculum and class. Besides the points you've made, other examples could include project-based learning where as groups, your students engage activities that directly connects Chemistry to social justice/community-based endeavors such as how to enhance the drinking water of local communities, addressing soil contamination, air quality, etc. I also thinking providing a history of science lesson as well, as you pointed out, helps to explain that vast array of scientific knowledge that has been eliminated from curriculum. You could reach out have community experts from different backgrounds come and give presentations or even run sample lessons.

Do you have any suggestions about how to deal with the phenomenon of an institution not believing that structural racism exists within unless it can be demonstrated? Demonstrations are often impossible due to lack of data accessibility or confidentiality.

Great question. I believe that during this particular time, there are several institutions who are taking this approach of racism being individual actions had by people who hold hate or disdain from another group of people. And the lack of access to data is another way in which institutions engage acts of structural racism is look at that practice as a form of whiteness as property (Right to use/ right to status). Depending on the caliber of your institution (Public vs private) there should be some data that is readily available. If it is a public institution, I would say gather data on enrollment percentages, test-score averages, locations from where students who enroll come from, juxtaposing that data against the local communities surrounding the institution and who is present in the community but may not be getting access to the university. Other ways to demonstrate structural racism could be to look at the faculty composition and note difference in the number of Tenured (full or associate), tenure track, and NTT faculty. Recognizing how power works, inequities in these numbers (it being inequitable because it does not mirror that of national population demographic levels) would demonstrate the cultural differences at the university and how it perpetuates structural racism. These numbers could also be compared to the professional staff and administrators, their demographic representation discussing differences in power here. If none of that information is readily available, then I would suggest using your power to create a space to host a forum where these conversations can be brought up. Or, supporting a space where conversations like these more than likely happen (e.g., cultural centers). Bringing about awareness and raising concerns and conversation is a way to bring about these perspectives.

How do faculty make their curriculums culturally relevant? (resources, programs, trainings...)

Great question. There are three core components to culturally relevant pedagogy based on the initial work from Gloria Ladson-Billings, Academic achievement, cultural competence, and sociopolitical consciousness. If faculty are looking to stay within these conceptualized bounds, then academic achievement involves creating learning spaces where student learning and understanding is fostered through a process that treats students as learners and growers, and not competitors. This requires different engaging modalities of instruction and assessment aside from traditional lectures and tests. Cultural competence is knowing, understanding, and engaging the culture of those they are teaching (culture from an anthropological/ sociological and psychological point of view) within their learning space. Sociopolitical consciousness involves knowing, incorporating, and accounting for the larger context and how it attempts to regulate and dictate the livelihoods and experiences of those involved within the learning space. Recognizing that none of these ideas are static, or can be addressed within on specific solution, faculty must participate and engage spaces that facilitate their understanding and application of these processes. Attending professional developments, reading CRP materials, engaging conversations and collaborations with education faculty, hosting seminars, etc. One cannot ever know “too much” about culturally relevant processes.

What are your thoughts about the protests vs the rioting and looting? People care more about protecting their property than protecting Black people.

Great point! I saw on twitter an activist say, “[stop asking me about looting. We learned looting from you!](#)” In this same mindset, I believe that protest are a necessary form of advocacy and activism, particularly given the fact that there are systems in place that attempt to silence and render invisible the voices and experiences of minoritized individuals. To call protestors looters and rioters are attempts to quash and silence their voice. And in the case of “looting” I ask what are the social conditions of those living within and around those spaces? Do they have access to and the ability to retain all things necessary for a high-quality life? If not, then why are we allowing people to go without? The challenge, in my opinion, is for those who are choosing this form of advocacy, is for them to be strategic in their decision, ensuring that they do not inadvertently lead to further setbacks in collective movements.

As a white faculty member, are there any ideas of how I can support my BIPOC & other marginalized students during the upcoming election results?

The election season is going to be real challenging, in my opinion. I believe that no matter the outcome, there is going to be some outward backlash by white supremacist groups as we are seeing and hearing the rhetoric of “stand back and stand by.” My suggestions for you are to let these individuals know ahead of time your concern for the social, emotional, and physical safety, as well as ways in which you can offer them direct and indirect support (e.g., extensions on assignments, asynchronous or no instruction for the week of and week after elections, helping coordinate access to necessary resources like food, counseling, etc. without them

having to subject themselves to targeted places and locations). I would also add that when you resume classes, that you offer grace and time for everyone to process the sociopolitical contexts without creating a hostile space such as giving them time at the beginning of class to center themselves before expecting them to enter into an academic mindset.

Now realistically how do we (black scientists) engage white peers without losing my job (to state it plainly)? Also, how do we explain to our students how African Americans have been over looked (even in this new age of “diversity” & “inclusion”)?

This is a very real question and statement. My suggestion for engaging your white peers is based on the power you have in this space to ensure your physical safety. If you are not in a space where you can bring up conversations about your well-being, racism in science, etc., without the threat or fear of retaliation, then I do not suggest that you do so. If you are in a space where you can bring up these conversations, but you are uncertain as to how others will receive it, then a strategy that I would suggest is helping organize a seminar series where external speakers could come and give presentations related to these things as a way to jump start conversations. I would also suggest looking to see if there are some colleagues who may be more conscious that could serve as a gateway point to help you start these conversations (them leveraging their capital to help raise questions and comments without it being directly connected to you). Regarding the second question, I believe that bringing access to the information that is being published about experiences (e.g., shows on Netflix like 13<sup>th</sup> and When they See Us, HBO show like Lovecraft Country, books and readings about the current condition, etc.). There is a plethora of resources out there that point to the continued acts of oppression that are happening even in this new age of “diversity” and “inclusion.”

I just read this article last night. Phenomonal presentation and paper.

Thank you so much!

We have a similar educational trajectory of attending an HBCU for undergraduate (Howard, Chemistry) and earning M.S. and PhD. at PWIs. My dissertation work is in chemistry education research. I am curious if your experiences earning your M.S. changed your trajectory to move towards the education space?

How interesting. Yes, there were lots of things happening during my master’s experience that led me to think differently about by educational and professional trajectories.

After acknowledgement of the issue existing, how do DEI programs then promote minority student engagement with STEM? How do we dismantle possibly underlying/hidden policies that cause the stress to students while still encouraging them to engage?

Great question. First, we have to be mindful of the perspective we are taking when creating and implementing DEI programs. For example, having the perspective of “minority” versus minoritized is already taking a perspective that their social stance is pathological. In thinking

about this, programs should focus not only on providing resources and capital for minoritized students given systems of oppression but preventing said capital and resources from having gatekeeping structures in front of them. For example, removing barriers to access research experiences so that more minoritized students can access these spaces is a way to dismantle hidden policies and encourage their support. Hiring more diverse faculty across ranks so that students can see and engage research spaces with leaders who look like them and study topics that directly relate to their interests. Those are two examples that remove policies that oppress while also supporting and encouraging minoritized students' engagement.

I think you just partially answered my question

Great!

What do you think about the mobilization to COVID by higher ed changing "the way things are done" & policies in response vs mobilization or lack thereof in (talk, but possibly little action) in response to the harm of being in STEM classrooms or even in response to #GeorgeFloyd #BreonnaTaylor - how do we move forward, seeing evidence that change CAN be done in higher ed.

Thanks for this question and comment. I too have noticed how quickly colleges and universities have mobilized around Covid-19, enacting changes to ensure the safety and well-being of people juxtaposed to lackluster efforts around the anti-Black racism that is continuing to happen. I think moving forward requires holding these systems and structures accountable for their lack of action, advocating for change, and proposing suggestions to be adopted. Aside from making demands on the system, we should also change our individual practices, and make policy changes at levels where we have power and control. One example could be to have racialized and minoritized students in spaces where decisions are being made and give them both voice and power to help promote change.

Passing on from chat (because I'd love to hear this too): Can you recommend readings or other places to look for more information on non-western, Eurocentric perspectives of "what is science"?

Here are some links and scholars to check out:

- <https://wisn.org>
- [Paula Price Groves](#)  
(<https://multiplex.videohall.com/presentations/1835?search=321293bbc0da6fc7c3492ff549e6ce2619b77ab6>)
- [Megan Bang](#)

Any specific advice on what would make the biggest impact on Day 1 of a STEM course to say/do as an anti-racist educator?



Great question. Several 1<sup>st</sup> day things that I attempt to establish that I believe would help are the following:

- Honor and validate the lived realities of everyone present within the room, noting that their perspectives and experiences are real and true.
- Invite them into conversations about recognizing differences in perspective from others, preventing the use of deficit language for their self and others, and also having a mindset of the classroom space being a learning community where everyone's education and growth is contingent upon each other and not just themselves.
- Provide some classroom norms for communication, respect, and engagement (your stance of how to treat people) but also invite them to help establish other norms that brings about the communal feeling of the learning space (this includes writing an attendance policy, establishment of accountability groups, expectations for group work, etc upfront where there is buy-in from them).
- Maintain a grading and assignment turn in policy that is conscious of the systemic forms of oppression that exist that lead people to having very different lived experiences. Hard core timelines for submission with points associated with it only privilege and favor some (with the main benefit being for us as instructors) and causing detriment and harm to others.

What is your take on the term "BIPOC"?

I've recently learned that this term is not new, however is just now being picked up by several communities. Without knowing the full history behind the term, I believe that its purpose is to be specific with talking about "people of color" recognizing that according to the rules of art, white is also a color, though white people are not considered "a person of color" for political reasons. I also think that the idea of specificity in terminology is present given how the term "people of color" have been operationalized and weaponized in ways to still lead to the rejection of Black people and the ignoring of Indigenous people. Personally, I use the term Black and Brown, or I specifically name the group that I am mentioning because names having meaning and power.

I see a lot of "white saviors" in the K-12 system that hinder true transformative progress. Do you have some advice on how to work with these "allies?"

Thanks for the question. Yes, there are a lot of people who maintain the "savior" mindset when it comes to working your racialized and minoritized groups. For those who may not know what that means, it's this idea that people are entering into these spaces trying to "save" these individuals from their conditions, a deficit-oriented mindset that presumes that Black and Brown equate to poor, destitute, and inhuman. My strategy for engaging "white saviors" is to have hard conversations with them about why they are engaging in this work and what they truly wish to accomplish. I do so by providing facts, experiences, and readings that talk about the detriment they bring given the savior-mindset they maintain and provide alternative ways in which they can leverage their capital and resources to make change. Bettina Love's book, "We want to do more than survive" brings about a strong conversation regarding the difference



between Allies and Co-conspirators. I tell them that you can be an ally by just talking about supporting without changing structures, which ultimately maintains or reinforces or re-centers you over the people you are claiming to support. To be a co-conspirator requires you putting your own livelihood at risk to push for change. I challenge them to be co-conspirators, working towards advancing true change.

Can you recommend readings or other places to look for more information on non-western, Eurocentric perspectives of "what is science"?

Here are some links and scholars to check out:

- <https://wisn.org>
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- [Megan Bang](#)

Often meritocracy is positioned as a way to overcome systemic inequalities. How can the academy walk back its emphasis on meritocracy without signalling a lower standard for excellence?

Great question. My first thought is “whose standard of excellence are we using?” Who gets to define what is excellent and who does not? In answering those questions, we can begin to see and walk away from the concept of meritocracy. We have created a space where words like excellence, success, achievement, etc. are all coded to favor and protect existing systems of oppression.

Thanks for a really fantastic talk! I feel some discouragement about how to change culture at mid-west mostly white institutions like my own in Nebraska... it is very difficult to increase our numbers of BIPOC faculty (because the culture isn't as welcoming as it should be, it's isolating, etc.). It feels like a chicken and egg scenario. Your talk gives some ideas about how to begin to change culture. Any ideas about how to do so in places where culture is so wrapped into identity, and our identity is sooooo white? Where do we start?

Great question. I am experiencing a very similar space here in Missouri. Some of the strategies that were initially implemented here that made it seem like a promising space were:

- Cluster hires across ranks and departments and colleges.
- A Diversity Postdoc to Faculty pipeline program
- Community-focused events and programs that allow Black and Brown faculty to connect with one another for personal and professional networking.
- Connections made between the university and local community to provide spaces outside of work (e.g., Hair salon, Barbershops, Churches, night clubs, gyms, etc.) for Black and Brown people to convene.

In essence, it is going to require a continued commitment, resources, and changes to power structures regarding retention. Otherwise, the efforts will not be successful.

What immediate steps can a department take to reduce the pressure to code switch?

Great question. The best solutions are not easy. The first is hire Black and Brown faculty across ranks who have navigational strategies that reflect their authentic experiences. This means recognizing that there is not “one way” to be Black or Brown and bringing in diversity within Blackness and Brownness. Second is to demonstrate an active commitment to the Black and Brown faculty present by providing resources and opportunities for their continued development and growth, as well as cultural celebrations and engagements. Have all of the faculty and staff participate in a series of cultural competency trainings so that there can be a raised awareness of the plights of others. Make changes to tenure and promotion policies that inadvertently push out Black and Brown faculty over subjective interpretations of “objective” policies.

In Biology, what would be the best way to explain that race is not scientific, but continuously acknowledge that racism is real, but race is “not”???

Great question. Though race is not biology, because of racism it has become very real in how we exist and experience life. But, to your point, I think it is a matter of providing resources and readings that detail the social construction of race that have real implications given racism.

Could you talk about the intersection of the pandemic and CRT? How has it helped or hurt movement in this area?

I’m certain that there are many things that could be discussed regarding COVID-19 and anti-Black racism. A CRT lens on COVID-19 alone would help bring out how and why we have vast inequities in experience with the pandemic (e.g., wages, ability to quarantine vs not given the need for physical resources, politicizing of resource allocation and spending, challenges with vaccination and where they are tested, schooling processes and what public K-12 education afforded different groups beyond just content knowledge, the challenges with virtual learning given resources, content, etc.). CRT provides a lot of assistance unpacking the systems of oppression manifesting through the pandemic and pandemic responses.

As a young STEM graduate student, it can occasionally feel like the decisions, conversations, and interactions that make a difference are above what we can influence; what are some ways to make our voices heard by closed ears to truly make a difference? AEA

AEA! Students actually have way more power to drive change. History has shown that those who have led demonstrations and protests that brought about change on campuses were in fact students. My first suggestion would be to coalesce and establish collective goals. Afterwards, decide on various strategies to have your voice heard and to access rooms where decisions are being made, and enact them. If you continuously “wait for permission” to share

your voice, then you will find yourself more often than not in a space where your voice will never be heard.

Do you know specific STEM courses that have incorporated anti-racism strategies in their syllabi? Any ideas on how to do it?

I do not know of any directly off the top of my head, but I am certain that there are some attempting strategies. Some examples, that I provided in an earlier question were:

- Honor and validate the lived realities of everyone present within the room, noting that their perspectives and experiences are real and true.
- Invite them into conversations about recognizing differences in perspective from others, preventing the use of deficit language for their self and others, and also having a mindset of the classroom space being a learning community where everyone's education and growth is contingent upon each other and not just themselves.
- Provide some classroom norms for communication, respect, and engagement (your stance of how to treat people) but also invite them to help establish other norms that brings about the communal feeling of the learning space (this includes writing an attendance policy, establishment of accountability groups, expectations for group work, etc upfront where there is buy-in from them).
- Maintain a grading and assignment turn in policy that is conscious of the systemic forms of oppression that exist that lead people to having very different lived experiences. Hard core timelines for submission with points associated with it only privilege and favor some (with the main benefit being for us as instructors) and causing detriment and harm to others.

I have begun to critically engage with the topics of race, sex, gender, and structural white supremacy in society/science/academia with my students, but I struggle with the idea of doing so as a white cis male. What suggestions do you have for a white person to engage thoughtfully on these topics when I don't have any lived experiences of my own which allow me to truly-grasp how these topics make folks feel?

Great question. I am glad that you are both engaging with these materials and "struggling" with what to do. My first thought is for you to begin to work with and teach other white cis males about the knowledge and information that you have learned, while also challenging them to engage in these readings and conversations. As an ally to the movement, you can learn for yourself. As a co-conspirator to the movement, you can leverage your privilege to push the boundaries of understanding and change. Some DEI trainers will share that having both a white person and a Black or Brown person working together in these spaces helps "translate" the critical nature of these conversations to all audiences.

QUESTION: I'm a White PI from North America, working in South America, and I mentor people who struggle to find 'belonging' in science (as women, Latinx, POC, non-academics). I'm wondering how I might use CRT to improve the experience of these students and colleagues in my lab. One thing I recently started doing was picking papers to discuss that are written by

authors from minority groups (e.g. latinx women). Wondering if this is along the right kind of lines and what else you'd suggest.

Great question. Exposure to a diversity of scholarship and thought is important for the growth and development of everyone. I know that some scientist do activities such as “scientist spotlighting” where they talk about the lived experiences of the various scientist they are featuring and are intentional to include representatives from different social identities. This perspective is not so much a CRT informed perspective, but it is one that helps bring about exposure and awareness. To take a CRT informed approach would require very upfront, difficult conversations about the presence of structural racism that is operating within Science, the lab, and all of society. It would be taking the opportunity to critique existing power structures that are present and attempts to then dismantle those structures in efforts to bring about structural change. Reading diverse work may bring about the exposure to the knowledge, but dialogic action will be necessary to foster change.

Does rejecting "universal truth" reject the realist perspective of atoms, molecules, and other constructs? Does it mean accepting homeopathy?

Great question. Rejecting the universal truth does not mean that you reject the acknowledgement of atoms, molecule, and other constructs. It means rejecting that there is only one way to know what exists and how it operates. I am not familiar enough with homeopathy to speak on it and its applications.

We know that diversity in science is not just about numbers but changes in systems. But also there is the potential of changing science itself, as science-as-we-know-it has a very specific Western historical context. We know that archaeology and developmental biology changed with more women entering the field, who noticed and reinterpreted the things that the male scientists missed. Indigenous knowledge systems are also getting more recognition. What do you imagine a future truly diverse science might look like?

Great question. A truly diverse science is one where the ideas, dreams, and possibilities of everyone is integrated into what we know and recognize as science practice, scientific knowledge, and scientific outcomes. These are spaces that center joy, love, care, and nurturing while also cognizant of and redressing the oppression that has led to this space.

If we reject the idea of "universal truth", then what are we left with? Is there still objective truth? If we don't have objective truths in some contexts, how will we ever solve problems like climate change, where science is so crucial for objectively documenting what is happening, what hurts, and what helps?

Great question. We are left with the idea that what we know to be “true” and what we believe are all subjective, and rooted in social, cultural, political, and historical conceptions. We accept and embrace differences in perspective and practice, recognizing that there are multiple lived realities operating at the exact same moment. It is noting that previous experiences and

perspectives have created very hard, factual experiences and truths regarding the presence of structural racism and its impact. And it opens the door for greater possibilities and the operationalizing of dreams and imaginations to exist. What we are using today was once someone's dream. We must ensure the dreams, possibilities, and hopes of all are justly recognized and embraced.