Combating Racism in the Geosciences: Reflections From a Black Professor

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Abstract  Racism is part of my lived experience as a Black person in America. Similarly, microaggressions and systemic racism form part of the common experience for BIPOC+ Geoscientists. This commentary is not intended to be fodder for the oppression-porn industry that stokes the passions of the “recently woke.” I speak with a unique perspective on the geoscience community and provide concrete recommendations for systemic change. It is time that we faced the realities of structural racism and invested in the real work necessary to make the geosciences diverse, equitable, and inclusive. Geoscientists need the entire community to work together to become anti-racist.

Plain Language Summary  The geoscience community struggles to achieve its vision of a diverse, equitable, open, and welcoming field of study. It is time that we faced the realities of structural racism and invested in the real work necessary to realize that vision for everyone. Geoscientists need the entire community to work together to become anti-racist. This commentary provides some perspectives from a 25-year career dedicated to producing science and increasing access for members of racialized groups to advanced training and careers in geosciences.

1. Introduction/Background

The recent wave of calls for equity and social justice in geoscience are long past due and amplifying due to the frustrations within the community—especially from its racialized and minoritized members. The geoscience community remains one of the most staunchly segregated fields of study with respect to leadership, membership in the academy, and full participation in its professional societies (Morris & Washington, 2017). Social justice in larger society requires the extinction of the practices, policies, and possibilities of future racial violence. Similarly, ideological changes are required within the geoscience to remove racialized barriers and the psychological violence that prevents access and opportunities for full participation of BIPOC+ in the academy and other careers.

The United States is currently reverberating from a national response to the naked brutality and injustice that BIPOC+ experience daily. By BIPOC+, I mean Black, Indigenous, People of Color, fully inclusive of queer and nonheteronormative members of these communities. The current historical moment has been referred to as America’s race-awakening. I think it is more accurate to say that it is America’s privilege-awakening. America has always been race-conscious. What tends to stay invisible is the privilege of White Americans, who are presumed as having no race. The current confluence of five identifiable public crises have also amplified the visibility of racialized disparities in our country. The global pandemic has combined with the blights of the wealth gap, environmental injustice, miseducation, and withering of civil and human rights. The latter includes the exhausting onslaught of voter suppression, state-sanctioned violence, and criminalization of BIPOC+ bodies. As privilege and structural racism have come into sharper focus for White (and other non-Black) Americans public outrage has grown into sustained national protest in conjunction with longstanding Black activism. Why are basic civil rights still elusive for Black Americans half a century beyond the Civil Rights Act?

2. Personal Experiences and Pathway

My privilege as a PhD-holding Black geoscientist does not provide immunity to nor insulation from racial injustices. I can easily recall the heat from the flood of white lights blanketing my skin while my internal temperature rose with anger in the midst of the intentional cacophony of loud and confusing orders, curses,
and spittle-laced invectives as several police officers surrounded and jostled me with their guns and batons drawn menacingly. I have been that figure sitting on the curb with my hands bound behind my back, slowly drifting into a split consciousness. One part of my brain wondered if these were my last moments on earth and another wondered whether this nightmarish scene just the opening act in a much longer macabre sequence of nightmares. I have been struck so hard with the butt of a police flashlight that the manufacturer label could be deciphered from the imprint on my chest days later. Make no mistake, in none of these instances had I committed any crimes nor was I charged with committing any crimes. I was simply a student, a postdoctoral scholar, a professor at a university who happened to also be Black.

As a child looking at reproductions of lynching postcards, I would wonder how this type of atrocity was ever normalized in America. How could people who looked so familiar be willing spectators and participants in such evil? Why is the word nigger so deeply ingrained in this country from the most remote places to the most urbane? How are people who are new to the United States introduced to the social hierarchy and systems of denigration? Over time, I came to accept this as uniquely American phenomena.

I have seen the same blankness, fear, and hatred that I saw in the eyes on those postcards and in the eyes of those police officers in the eyes of students, faculty, and fellow scientists, numerous times over my career. Are these the only things that I see? Of course not. But do they sear to the memory? Yes. Through these and many other experiences I have come to recognize and understand lynching by the white gaze. It is in the detached rage in the eyes of those that are looking but unable to see me. It is in the voices that vapidly offer callous sarcasm in place of thoughtful repose in response to discussions on racism. It is in the vacuous expressions of the equivalence of merit to time-honored traditions offered to negate or resist changes policies and procedures that are racially discriminatory. It is in the empty assumptions that equity and inclusion are purely issues of fairness at the expense of quality or added value. It is in the tokenism of being held up as a model minority.

As a Black academic geoscientist, I have seen firsthand how the academic environment can be unwelcoming, unfair and inequitable simply because an individual does not fit into an acceptable gender or racial schema. I can recall the many instances while in graduate school, during my postdoctoral fellowships, and even during my time at NASA where I was made to feel invisible, mistaken for the janitorial staff, or criminalized. Unfortunately, these are still common experiences for BIPOC+ students and faculty. One simply needs to look up #BlackintheIvory to read scores of personal anecdotes. Many would make you wonder whether this was 1921 or 2021.

I have likened my experiences at early professional meetings at which I was presenting papers to the experience of someone entering a busy street from a manhole cover. As a teen-aged Black student walking into a predominantly white professional space and suddenly feeling very self-aware that my appearance was more important than my mind. People were literally swerving to avoid making physical contact with me, overwhelmingly avoided eye contact, and at the same time were hyper-observant from a distance. I cannot recall a single experience in the 40 foreign countries that I have visited where I have felt as isolated. These experiences were ultimately the inspiration behind the creation of the Colour of Weather (CoWx) networking receptions, which are now in their 25th year and a regular element of the American Meteorological Society meetings (Joseph et al., 2008). The CoWx receptions seek to foster a greater sense of belonging for attendees from racialized identities. In each event, champions and allies of social justice, diversity, and inclusion within the AMS and other Geoscience communities are recognized and participants engage in activities that broaden socio-professional networks and break down barriers to cross-cultural conversations.

3. Persistent Challenges

I often wonder whether the public murders of Black citizens on social media are the modern version of the casual lynching postcards of the Gilded era. Despite our more beautiful mythologies of an American melting pot, there remains an ugliness in America that because we refuse to face or eliminate it continues to resurface, to surge like a vile reminder of a sickness that lurks beneath our skins. Racism must be actively managed, not ignored. Moreover, it is a we problem, not a they problem, and it requires a we solution. It is time for all of us to recognize, to call out, to actively dismantle the racism in our collective presences.
The geosciences are just a microcosm of larger society but with a more extreme level of segregation than most STEM disciplines. Racism in geoscience is most often innocuously presented. Rather than palpable hatred or physical aggression, it is the impersonal enforcement of a social order based on well-worn practices of exclusion and decision-making that concentrates power away from non-whites. This is what makes it so insidious. Social theory reveals that groups in power tend to develop a shared ideology that justifies their privilege and rationalizes the persistence of social inequality. This is perhaps nowhere more manifest than in the STEM community. Scientific culture, perhaps, in geoscience more than other areas of STEM has historically been defined by who it excludes, rather than who it includes. The prevailing imagery of idealized professionals, lack of diversity in the academic faculty ranks, and hostile racial environments are major impediments to attracting and retaining BIPOC+ scholars.

Changing systems and institutions that afford privilege to those who accept the status quo (or find comfort and acceptance within the current systems) is a radical and daunting concept. Consequently, many progressive-minded people alternatively seek prescriptive individual solutions. And the market has responded by churning out a blinding supply of entertaining and highly readable solutions for racism; “Ten steps to a better racial relationship,” “Three guarantees to racial nirvana,” “Anti-racism for Dummies.” The specificity of the platitudes in these hastily constructed offerings provide some solid footing on the shaky ground of race relations. Unfortunately, none of these individual solutions will solve the complexity of systemic racism. Teaching tolerance has value but tolerance is neither respect nor equity. Are these small steps in the right direction meaningful? Sure. Are commitments for critical self-reflection necessary? Absolutely. But when individual goodness becomes the focus, rather than the hard work of achieving the goals of equity and social justice, then we will never dismantle the system of privilege that perpetuates racism throughout society.

We have to accept the presence of privilege and that it will persist. We do not have to accept the use of privilege to: i) exacerbate inequity and buttress systems of oppression, ii) maintain practices that maintain an imbalance of in access or inclusiveness, or iii) silence the marginalized. Instead, privilege can be used to challenge the imbalances of low expectations and deficit model thinking, create opportunities for inclusion, and reduce the adherence to exceptionalism as a defensive posture in discussions of structural racism. This is where academic leadership can make the greatest impact.

It is often said that you cannot solve a problem that you cannot see. True to form, many an initial response to the absence of racial diversity in the tenure-track faculty ranks takes the form of “I never thought about that.” or “I never noticed before.” Well, people of color notice. It is strange to have such rampant obliviousness of one’s environment in a field so staked in observation. Academic geoscientists have proven to be quite deft in “unseeing” the race problem for several decades. We must note that this ability is not unique to geoscientists (indeed, it is prevalent across STEM) but it is endemic to geoscience departments. Consider atmospheric sciences for which there are fewer than 10 Black atmospheric scientists in the tenure-track lines in all atmospheric science PhD-granting programs in this nation. That equates to less than 1% of the total number atmospheric science faculty lines in these US academic institutions. Yet, until very recently, few have asked “How does that happen?” Why? Because we have normalized their exclusion.

I recently led the development of a public statement that challenged the geoscience community to take decisive action to address systemic racism; the No Time for Silence Call to Action (https://notimeforsilence.org). This effort was borne out of the built-up frustration with inaction at the organizational and institutional levels that could bring about systemic change. There are many high-impact programs that have been implemented at the unit level. However, we were concerned with the lack of leadership in addressing the persistence of racism and inequity in the sciences. The call was issued to motivate decisive actions by leaders in the academy, industry, government, professional societies, and the nonprofit sector to develop and implement substantive and multi-pronged strategies to remove systemic racism in our community. BIPOC+ voices that speak from Black Feminist and oppositional perspectives that are often omitted from discussions of solutions. We sought to elevate those voices. Recently, No Time for Silence and the Call for a Robust Anti-Racism Plan for the Geosciences were recognized with the 2020 AGU Presidential citation for Science and Society. We have held significant discussions with NOAA, NASA, USGS, and the NSF-funded National Center for Atmospheric Research (NCAR) leadership regarding programmatic developments in response to the Call to Action. Moreover, our team is engaged in transformative changes within two of the premier professional societies for atmospheric sciences; AGU and AMS.
4. Getting Results

So, how do we make significant advancements in equity for racialized groups? Certainly not by “re-inventing the wheel.” The geoscience community should learn from and collaborate with existing programs that are making national impact. Historically Black Colleges and Universities (HBCUs) and Minority-Serving Institutions (MSIs) have a proven record of recruiting, educating, and cultivating the unique talents of BIPOC+ scholars. Moreover, HBCUs and MSIs produce outsized numbers of BIPOC+ scholars—all with far less resources than the R1 institutions who receive millions of research dollars to provide equitable opportunities to all students, yet remain largely segregated.

I designed and led the implementation of an interdisciplinary program in atmospheric sciences at Howard University; the first graduate program of its type at any Historically Black College or University (HBCU) (Morris, Joseph, et al., 2012). Launched in 1998, this academic program has since become a national leader in the education of African American and Latina PhDs in Atmospheric Sciences and the nation’s leading producer of African American PhDs in Atmospheric Sciences. From 2006 to 2018 the program produced over 50% of the African American PhDs and 30% of the Latina PhDs in Atmospheric Sciences in the United States. The program was highly diverse with the average enrollment being about 50% African American, 25% Latinx, and 25% international, Caucasian, or other. It may have been the most racially diverse ATMS program in the country during this time. However, the program was diverse in more ways than its racial make-up. Over 15% of the students were first-generation students and 75% came from economically disadvantaged backgrounds. This program made a significant impact on the national statistics for atmospheric sciences and it had a significant impact on the social mobility of the students. Ninety-eight percent of the graduates of this program are working as professional geoscientists.

Commit to developing a robust system of educational pathways: Our success at training and placing minority scientists into STEM careers was not simply a result of being housed in a HBCU. Rather, it has to do with a commitment to developing a robust system of educational pathways designed to reduce barriers to STEM careers from “K to gray.” One element was the CAREERS weather camp network that I began in summer 2002 (Morris et al., 2012). This outreach program consisted of a network of annually conducted free summer camps for high school and junior high students at locations across the continental US and Puerto Rico. Over its 17-year lifetime, this program enrolled nearly 800 high school students in immersive, on-campus experiences designed to excite them about careers in the atmospheric and environmental sciences. Over 75% of the campers came from racialized groups—predominantly Latinx and African American populations. From our initial polling of alumni, nearly 65% of the total number of our former campers majored in STEM fields in college and the first PhDs have begun to graduate in recent years. This program was coupled to a network of MSIs that served as feeder programs into a system of undergraduate research programs that promoted graduate opportunities at Howard as one of the career pathways options. This end-to-end system of programs was sustained over a multidecadal period and fostered a pipeline of students into the Howard and other graduate programs nationally (Morris et al., 2007).

Sustainable and equitable collaborations among HBCUs, MSIs, and predominantly white institutions. Another type of solution would invest in sustainable and equitable collaborations between HBCUs and MSIs and institutions that have majority white STEM programs Institutions (Morris et al., 2007; Robinson et al., 2008). Too many times HBCUs and Majority Institutions have entered into what are no more than sharecropper arrangements. Partnerships where the HBCUs serve only to invest resources in developing talented students and then send them off like raw materials for processing (training) and packaging (credentialization) elsewhere. This commodification of students and the inherent discontinuity in support and mentoring has not proven to produce sustainable results. We need a new model.

Equitable alliances should involve truly collaborative engagements between faculty such as shared courses, co-mentoring of the graduate students, and collaborative research among faculty at the partnering institutions. Distinct from many past efforts, the partnerships should not rely on presumed power or knowledge hierarchies between institutions. The faculty from the majority institutions and from the MSIs should enter into each endeavor as equal partners. The scientific expertise of all parties should be acknowledged and valued in the partnership. This requires co-development of courses and co-development of research projects and efforts. It is not simply a matter of “forced assimilation” of students into the majority culture. It is not
a simple matter of “pipelining” students from one place to another. Partnerships could develop MS-PhD programs, BS-MS programs, and, if so, joint faculty appointments should be part of the arrangement.

**Fearless leadership.** A third solution is for academic institutions to undergo a transformation in leadership that enables fearless commitments to hiring and supporting the development and success of BIPOC+ faculty. This is the solution. So how do we implement this solution? These scholars exist and have existed for decades. To be clear, over 1,100 BIPOC+ scholars have acquired their PhDs since 1973. This is not an insignificant number. It is enough that if a significant intention to hire BIPOC+ scholars into the faculty ranks had been present over the last 40 years, the current conversation would be very different. Our academic leaders in geoscience must be brave and ethical enough to proceed aggressively without being cowed by the red herrings of reverse discrimination, a reduction in quality, and the library of excuses that have been used to forestall any movement toward equity in the faculty ranks. Let us not forget our history. These are some of the same excuses that were used to exclude women from academic careers just a few generations ago. These gendered forms of exclusion are less prevalent today but it is wrong for gender and it is wrong for racialized scholars. BIPOC+ faculty and administrative leaders committed to equity must be hired and supported especially at but not limited to majority institutions.

Martin Luther King, Jr. gave his life for social equity and an end to racism but during his life only 28% of Americans held a favorable opinion of him (Theoharris, 2018). This is not a popularity contest and the champions and allies of this quest should be prepared for that. But it is the right thing to do. My career has been characterized by a strong personal commitment to inclusion in its broadest sense and education as a means for transformative social change. I have sought to develop organizations and environments that braid together individuals who reflect the rich intellectual, ethnic, and cultural diversity of the STEM community. I have striven to ensure that students who may be marginalized in majority settings are not only given opportunities to excel in their scholarly activities but also made to feel welcome in their identities. My aim has been to provide students and early career professionals with access to the broadest perspectives and expertise available that nurtures their intellectual engagement as they pursue the advancement of knowledge. This approach and the recommendations above are scalable and, while not simple, are proven to be successful. Cross-institutional collaborations that center these types of commitments will bring about equity in geoscience.

**Author’s Note**

The focus of this commentary is on racialized groups. The low participation numbers for racialized groups are not a result of the absence of individual or group agency as much as it is an outcome of policies and practices of decision-makers and institutions designed to entrench and protect power in certain groups. The language that we use to describe these groups and the results of racism matters. In this vein, I do not use the terms underrepresented groups or underrepresented minorities and, in its place, I use the terms racialized, marginalized, minoritized, and/or excluded groups. Marginalized or minoritized groups can generally apply to any of the identities that suffer from discrimination due to the multiple identities of race, ethnicity, sexual orientation, gender, religion, or ability, among others. This choice of terminology offers a more accurate description. It removes the yoke of the problem from those individuals for whom damage is being done. Simply put, deficit language problematizes the victim. It is also important to note that every individual may have multiple identities that come into play in social situations in a myriad of ways. Identities are not binary distinctions they are the multiplex dimensionality of individuals. Recognizing this is a first step towards both allyship and justice.

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**Data Availability Statement**

Data were not used nor created for this research.

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**Erratum**

In the original Commentary, I used the term, “sexual preference.” Subsequent to publication, I was apprised that this term has negative connotations and is currently considered toxic in some parts of the LGBTQ+ community. The terms “preference,” “choice,” and “lifestyle” have a history of being weaponized and used in hateful rhetoric against “queer and nonheteronormative” people throughout the years. They are currently being employed by various campaigns that seek to deny equal rights to LGBTQ+ people. Language matters. I apologize to the LGBTQ+ community for this misstep and thank my friends for bringing this swiftly to my attention. We are all in a growing process and I welcome the opportunity to advance in solidarity.