

Combating Systemic Racism in Higher Education: An Open Letter to STEM from Faculty of Color

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Abstract: (2-4 sentences)

The annals of science are marked by advances so transformative that their impacts transcend generations. The printing press, antibiotics, the polymerase chain reaction, among others, revolutionized science and catapulted human society into a future with better health, longer life and a deeper understanding of the world around us. What is remarkable about many of these advances is that, at the time, they addressed problems viewed as intractable, but in retrospect, the solutions were relatively straight-forward.

It is through this lens that we examine current events. We are facing a global pandemic that disproportionately impacts Black, Latinx/a/o, Native American, Pacific Islanders and other culturally rich but vulnerable populations in the United States (1). We continue to witness systemic racism in its many forms, be it bias against resumes with “Black sounding” names in the hiring process (2) or school funding patterns that disadvantage minoritized populations (3) or the killing of Black people by an increasingly militarized police force. Protestors fill the streets, accepting the potential health risks of gathering during a pandemic because, day to day, they live the costs of inaction.

The saying goes, “If you’re not outraged, you’re not paying attention.” Throughout higher education, particularly in STEM, Black students and other students of color are outraged. They see a faculty that is not a reflection of society—a pattern in many disciplines that has not meaningfully changed in decades (4), despite major increases in the number of students of color entering college. When they do not feel invisible, these students feel marginalized and tokenized and victimized by a campus climate of microaggressions and overt racism from faculty, staff and students. Across academia these students have written letters expressing their outrage and demanding change, and faculty sign these letters to show their support and to amplify student demands. The students leading these movements have likely been at their institutions for only a

few years, yet many of the faculty signing these letters have often been there for decades. Why are students leading the demands for change? Why have more faculty not been outraged prior to now? Simple. Most have not been paying attention.

Diversity in STEM is not just an issue of equity or social justice. Diversity results in better and more impactful science (5) that is often more innovative, and yet less recognized, resulting in the diversity paradox (6). Not only is diversity essential if we are to understand the challenges facing marginalized communities (e.g. environmentally driven health disparities) (7), but it is also essential to understand challenges facing non-marginalized communities (8) [MOU1] and envision novel solutions. Students are correct to demand more diversity and inclusivity in higher education. However, achieving this goal will not come from demanding that university administrators fix the problem. It is time to acknowledge the role that *the faculty*, broadly, play in perpetuating the culture of exclusion in STEM.

For decades, many faculty have blamed lack of diversity on “The Pipeline”, yet *the faculty are the pipeline* (9), and it was built to leak. For example, to maximize student funding, faculty on graduate admissions committees nominate students of color for “diversity fellowships” rather than “merit-based fellowships”, but these students are then penalized later in the pipeline for not having prestigious awards on their CVs. Faculty in leadership positions assign women and faculty of color to more, often less influential, committees than their White male counterparts (8), but then faculty peers penalize them, criticize them and fail to reward them in the tenure and promotion process if their higher service load reduces their research productivity. Institutions highlight mentoring and education programs run by faculty of color to demonstrate “institutional commitment” to diversity, yet rarely are these efforts meaningfully acknowledged in the tenure and promotion process by their faculty peers. It is even more rare for institutions to fund these programs directly, relying instead on faculty of color to obtain extramural funding, grants that are typically not viewed as equal to “research grants” in the tenure and promotion process by their faculty peers.

We are heartened to see so many of our colleagues signing letters in support of our Black students specifically, and students of color, broadly; however, changing a culture of exclusion to one of inclusion will take more than an email petition or performative pity. Change will not come by demanding that others fix the problems, but instead by seeing where we each have leverage and then committing *personally* to being a faculty agent of change (10). *We teach* our increasingly diverse undergraduate students, and there are many impactful pedagogical models that improve student success, particularly for students from diverse backgrounds (e.g. 11, 12). Use them. *We recruit* graduate students into our labs. Organizations like the Society for the Advancement of Chicanos and Native Americans in Science, the *Annual Biomedical Research Conference for Minority Students*, the *Tapia Conference*, the campuses of Historically Black

Colleges and Universities, Hispanic Serving Institutions, and top-notch community colleges are all teeming with incredible talent, ready to make the most of an opportunity. Recruit them and admit them. Learn to be mentors and advocates of these students. Support them intentionally and commit to their success. *We mentor* postdoctoral scholars, and more postdocs from groups underrepresented in STEM would stay in academics if they saw a viable path forward. Encourage them and invest in them. If they want faculty jobs, advocate for them so that they are hired at the same rate as their white counterparts (13). *We hire* faculty into our departments, and there are many talented aspiring faculty of color who have both a commitment to their science and to making science more inclusive. Value their skills and hire them with competitive salaries and startup packages that position them to succeed. Finally, *we define* what it means to be a successful scientist through the tenure and promotion process. Making science more inclusive through socially and ethically impactful research, teaching, mentoring and outreach efforts should be an expectation of all faculty—not just faculty of color.

As faculty of color who have dedicated their careers to increasing diversity and inclusion in science, we share the exasperation of our students who demand change. For decades, we have experienced and heard about the challenges and obstacles in diversifying STEM. However, the solutions are more straight-forward than many claim. If all in academia are willing to engage, if we are all willing to acknowledge that we have the power to change the structural racism that limits diversity in academia, particularly in STEM, we can change the system.

We stand at a unique and pivotal moment in history. We can decry the injustices and return to the same behaviors, structures and processes that led us here. Alternatively, we can commit ourselves to transformational change by doing the following:

- 1) Accept, *as fact*, that universities—faculty, staff and students—play a role in perpetuating structural racism, particularly in STEM where students of color face an unwelcoming academic culture (14).
- 2) Accept, *as fact*, that universities are not “level playing fields” or “merit-based” systems where all students have the same opportunity to succeed (15). Black, Latinx/a/o, American Indians, Alaska Natives, and Pacific Islanders are more likely to be first-generation college students (16,17), have difficulty transitioning to college (18, 19) and struggle in the large, impersonal, didactic lecture courses frequently used in STEM (20, 21). Additionally, universities misuse standardized tests like the GRE that have little predictive value, excluding students who could have otherwise succeeded, with a disproportionate impact on students of color (22). Until we approach higher education with a true focus on equity, we will perpetuate the adverse impacts of structural racism.
- 3) Stop deflecting blame. Yes, there are failures and inequities throughout our K-12 educational system. Nonetheless, there are innovative pedagogical models (11, 23) and programs (12, 24) that allow students to transcend these challenges at the collegiate level. We just have to move beyond

viewing student ability as fixed (25). Yes, there are problems with the tenure/promotion policies in our institutions (26). We just have to prioritize fixing them.

4) Apply the same rigor, creativity, and resourcefulness that you employ in your science to achieving equity and inclusion in your laboratory, classroom, department, institution, and field of study. It is a rare scientist that walks away from challenging science problems in their field, saying “there’s nothing I can do”—yet this is done on a regular basis across academia when confronting issues of diversity and equity.

5) Stop expecting faculty from marginalized populations to be the agents of change in your institution. Those who are not marginalized are the most empowered to make change. All faculty, not just faculty of color, should be active in recruiting, supporting and championing diverse students. We are not inherently better at it—we just care enough to prioritize it.

6) Be transparent. Research shows that scoring processes (27) and research area (28) systemically disadvantage Black applicants for federal funding. In the tenure and promotion process, research areas pursued by minoritized faculty are also often devalued (29) and “diversity work” is frequently dismissed as desirable, but ancillary to the core faculty mission (30). Such specific processes that disadvantage minoritized faculty are almost certainly not codified in grant review or tenure and promotion guidelines as they would likely be viewed as discriminatory. Yet, such standards are routinely applied.

7) Accept that being “not racist” or “not biased” is not enough. Changing university culture and making our institutions, and science at large, more equitable and inclusive will require being actively anti-racist and actively combating bias. If you see something, say something. Allowing others to engage in discriminatory behavior without reproach can be worse than the behavior itself as it normalizes these behaviors.

8) Hold yourself accountable. Examine whether your courses have performance disparities between males and females, or between minoritized and non-minoritized students. Ask whether the gender and racial/ethnic composition of students training in your lab is reflective of student demographics or society as a whole. If there are disparities, take actions to remedy them to achieve parity across all demographics.

9) Hold others accountable. Tenure should demand excellence in research, teaching and service—not just research. Tenure should require meaningful contributions towards equity and inclusion. On average, women (31) and minoritized (32) faculty proceed more slowly through the tenure and promotion process than their White male peers, not because they are less capable, but because of cultural taxation resulting in unequal service and mentoring demands (33) and structural barriers that devalue their work and disadvantage them in the tenure process (34). These processes were developed by those in the majority; those in the majority must be agents of change in dismantling them.

10) End the false dichotomy of “excellence or diversity” because diversity is excellence. Academia has become so competitive that we resort to counterproductive shortcuts focused on quantity and perceived journal quality (35). In this environment, any small difference between applicants can be viewed as a “compromise on excellence”. In reality, in many fields today job applicants must publish twice as much to secure a faculty position than 20-30 years ago (36). As such, the CVs of many job applicants today are far superior than the CVs of the faculty reviewing them when they were at the same career stage.

We thank our colleagues for adding their voices to demand change, but signatures and petitions are not enough. It is time for action. Breaking down the barriers of systemic racism and achieving the promise of real diversity, equity, and inclusion within STEM will require an unwavering commitment and real work. Join us in being a committed agent of change.

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