

# Identity Struggles of a Black STEM Academic

*Tyrone Porter*

Sylvester James “Jim” Gates, Jr. was the keynote speaker at the Acoustical Society of America (ASA) Acoustics in Focus meeting in May 2021, and he gave a riveting account of his academic and professional life as a Black STEM scholar (see <https://bit.ly/3CWG0ti>). Listening to the keynote speech, I thought about my own experiences as a Black STEM scholar and pondered on the identity struggles that I have faced through the years.

Like most people, I have multiple identities. I am an American, a Detroit native, a husband, a father, an engineer, and a sports enthusiast. I am also Black, and there are many people who have been conditioned to associate that identity with criminality or a lack of intelligence. These prejudices have established a racial hierarchy that exists throughout America and has contributed to the underrepresentation of Blacks and other ethnic minorities in STEM (Science, Technology, Engineering, and Mathematics). Based on these biases, bigots have questioned whether I deserved various opportunities academically or professionally. I became an activist to combat prejudice and systemic racism in society generally and in STEM specifically. While I have persevered through the years, there were pivotal moments in my past that caused me to question my academic and scientific identities and whether America was capable of change. In this essay, I share on these pivotal moments and how they have shaped my identities and my commitment to the fight for racial equity and inclusivity in STEM and in acoustics.

After completing my undergraduate degree in electrical engineering at Prairie View A&M University (see <https://www.pvamu.edu/>), a Historically Black College/University (HBCU) in Prairie View, Texas, I started my doctoral studies in bioengineering at the University of Washington (UW; Seattle). My doctoral adviser was Larry Crum, a former ASA president and a recipient of an ASA Gold Medal. This was my first extended experience at a Predominantly White Institution (PWI) and I was uncomfortable immediately.

One of the greatest attributes of an HBCU is the efforts made by virtually all staff, students, and faculty to connect with each other and create a supportive community. I didn’t see the same level of effort toward community building at the UW and found it difficult to connect with others.

Indeed, my time in graduate school coincided with the anti-affirmative action movement (for background, see [https://en.wikipedia.org/wiki/Affirmative\\_action](https://en.wikipedia.org/wiki/Affirmative_action)), which had gained momentum after the passing of Proposition 209 (Prop 209) in California as an amendment to the state constitution. Prop 209 prohibited the use of race, gender, ethnicity, or national origin in hiring, contracting, or admission decisions in state institutions, effectively ending affirmative action initiatives in California universities and colleges.

Inspired by Prop 209, citizens of Washington State were able to get an equally damaging bill on the ballot, known as Initiative 200 (I-200). There were numerous town hall meetings to discuss I-200 and its potential impact, and proponents argued that Black students like myself were admitted into the UW solely based on race. Although proponents never presented any evidence to support their narrative, the claims perpetuated the idea that students of color like myself were inferior academically. Persons of color have been fighting to change this perception for years, whereas those who have benefited from exclusionary practices have fought to maintain it.

At the UW, I usually was the only Black student in my classes, and I worried constantly that the other students or the professors believed I was admitted to the UW only because I was Black. This created undue stress that initially negatively affected my academic performance. I began to question whether I deserved to be at the UW and whether I had the capacity to succeed in the graduate program and assume the identity of a bioengineer. In fact, there were only two other Black students in the bioengineering graduate program at the time so I had trouble

finding other students with whom to discuss my feelings. Moreover, adjusting to the new environment was not a topic of discussion within the acoustics research group, so I had to find a solution on my own. I have heard similar stories from peers, some of whom decided to transfer to another university or terminate their degree early.

The fact is that studies have shown that one of the greatest barriers to persons of color thriving in STEM academic programs is establishing a scientific identity and connecting with others in the discipline. I was able to connect with other STEM students of color in the Minority Science and Engineering Program (MSEP) and the Graduate Opportunities and Minority Achievement Program (see <https://grad.uw.edu/gomap-is-now-gsee/>), and my academic performance improved over time. Additionally, I began to visit the Ethnic Cultural Center (ECC; see <http://depts.washington.edu/ecc/>) frequently because this was a safe space for students from underrepresented groups to discuss the challenges of simply existing at a PWI. We created a supportive community, which enabled most to excel instead of survive at the UW, and we worked collectively to push the university to expand access and support for underrepresented students.

Additionally, I cofounded the Minority Think Tank (MTT) with other students from the ECC. We organized seminars and launched programs that were designed to combat exclusivity and counter the false narrative presented by anti-affirmative action advocates. I assumed the identity of an activist during this period, and my involvement in these activities served as a stress release. However, it was difficult to balance my identities as a doctoral student and as an activist.

Fortunately, Larry Crum and the other bioengineering faculty and staff were understanding and extremely supportive. I worked on a collaborative project studying the impact of high-intensity focused ultrasound combined with pH-sensitive polymers on the permeability of cell membranes. There were many days where I split my time equally between the laboratory and meetings at the ECC. Throughout this period, Larry and other faculty in the department fueled my passion for science and occasionally attended events that my peers in MTT and I organized. I successfully managed my dual identities with the support of Larry and the other faculty, completing my doctoral studies in 2003 while also creating new

programs to recruit and support marginalized students that were adopted by the university.

When I started my faculty position at Boston University (BU; Boston, Massachusetts) I found myself once again in the all-too-familiar position of being “the only or one of the few.” I continued my commitment to increasing diversity, equity, and inclusion (DEI) in STEM programs but found it more difficult to balance my efforts with my obligations as a faculty member. I had more time available for extracurricular activities as a graduate student but starting a faculty career was *significantly* more demanding, and in a way, the expectations on me, as the only Black faculty member, were greater than for White colleagues. In addition to building a research program and teaching core undergraduate engineering courses, I agreed to serve as faculty advisor for the BU chapter of the National Society of Black Engineers and the Black Student Union.

By working with this group, I discovered that the students craved contact time with faculty of color so I attended meetings of the organizations as often as possible to increase interaction with the students. Additionally, I regularly met with the presidents of the chapters to discuss monthly events, membership recruitment, and leadership skills. By working cooperatively with the presidents, the chapters were operated more effectively, which led to an increase in membership enrollment and participation.

Although working with the students directly was gratifying, it also was draining and took time away from building my research program. This was a major risk given that scholarly output and teaching are more valued in promotion and tenure decisions than efforts to increase DEI in higher education.

The fact is that DEI efforts are commonly referred to as “invisible work” because there is no clear way to capture the impact of these efforts in a measurable way in faculty annual reports or promotion and tenure dossiers. Moreover, faculty who write evaluation letters for promotion and tenure cases are rarely if ever asked to comment on the efforts of the candidate to address underrepresentation of marginalized groups in their respective discipline. Knowing that my DEI efforts could go unnoticed created tremendous stress and anxiety because they were a reflection of my identity and core values. I felt like the system

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was forcing me to decide between my racial and scientific identities. Fortunately, the engineering senior leadership at BU valued my DEI efforts and honored me with a Faculty Service Award. I did successfully navigate the system to promotion with tenure while being true to both identities. But the academic system needs to evolve and embrace scholars who desire to expand access to higher education in addition to generating new knowledge. A system that values DEI efforts in addition to a scholar's h-index will attract more scholars of color to pursue careers as STEM faculty who can then serve as role models for students of color and help them establish STEM identities.

Moving forward, I plan to embrace both identities and infuse DEI in all aspects of my profession. Recently, I changed the name of my research group to the Diverse Engineering Applications Laboratory

(D.E.A.L.), signaling that we value diversity in personal background as well as in scholarly pursuits. The guiding principle for the laboratory is "Diversity drives innovation, creativity, and personal growth." I have also begun to pen more essays such as this one sharing my experiences balancing my identities as a scholar and as an activist. I hope that my efforts contribute to transforming higher education so that DEI work is no longer "invisible."

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