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Voices

How do DEI initiatives impact STEM, and why do we still need them?

The number of diversity, equity, and inclusion (DEI) initiatives in science, technology, engineering, mathematics, and medicine (STEMM) have grown over the last few years. We asked several Black scientists what impact they have and why STEMM still needs them. They answer these questions and describe how DEI initiatives should evolve.



Ismail Ahmed
NYU School of Medicine

Image of success in academia

Reshaping the image of success in academia by highlighting the achievements of scientists from marginalized backgrounds is an essential step toward creating a more inclusive and diverse academic community. The current definition of success in academia is often narrow and does not fully capture the contributions of scientists from underrepresented groups, which perpetuates the systemic barriers that have excluded these groups from academic careers.

To address this issue, initiatives that increase the visibility and recognition of scientists from marginalized backgrounds are crucial and an area where diversity, equity, and inclusion (DEI) initiatives can potentially have a huge impact. By showcasing the excellent work and personal journeys of underrepresented researchers, these initiatives can help to inspire and motivate the next generation of diverse scientists and change the conversation around what merit and success look like in academia.

One such initiative I am working on is the BioDiverseStories seminar series at NYU Langone, supported by NYU's Neuroscience and Skirball Institutes. This series focuses on highlighting the phenomenal work of underrepresented researchers and their personal journeys to success in academia. It not only provides a platform for underrepresented minority scientists to share their work with the broader academic community but also serves as a model for other institutions to follow. Through this type of initiative, academia can work toward creating a more diverse and inclusive environment that truly values the contributions of scientists from all backgrounds.



Alissa Armstrong
University of South Carolina, Columbia

Freedom to focus on our research

As a Black woman in academia, impactful initiatives signify a true commitment from colleagues, administration, educational institutions, and funding bodies to support diversity, equity, and inclusion in science. When these programs really achieve what they intend—i.e., recruit, retain, support, and promote scientists of color—they create spaces where Black and Brown scientists are no longer the “only ones” or in a small minority. Having a research community in which you can see yourself in others and connect with colleagues through shared experiences removes the energy drain that comes from conscious and sub-conscious code-switching (alterations in language, behavior, and appearance to fit in with the majority).

When Black and Brown scientists can bring our authentic and full selves to their research, we are free to use our brainpower for more creative thinking. In turn, this allows for more innovative approaches to tackle complex biological questions. A wide range of DEI initiatives have been and are currently being implemented, including summer undergraduate research experiences, post-baccalaureate programs for graduate and medical school preparation, and bridges to independent research careers programs. The pace at which these initiatives have improved the current landscape, however, has not resulted in the above-mentioned research communities where scientists of color can thrive without social and cultural restrictions. We need brave leaders who develop, support, and champion new and/or revitalized programs that are bolder and more immediately impactful. Ultimately, this will create environments that attract and

keep Black and Brown scientists who are performing foundational and groundbreaking research.



Tameka A. Clemons
Tilman J. Fertitta Family College of Medicine at
University of Houston

Intentionality in DEI initiatives

Since 2020, universities have added more DEI initiatives with the hope of eventually reaching true diversity in science and medicine. DEI initiatives are still needed, but the initiatives must be intentional. A great example I can share is my own personal re-entry into science after a long hiatus because of many barriers that I faced. In 2014, after applying to and being rejected from the NIH re-entry program, Western Michigan University Homer Stryker M.D. School of Medicine (WMed) invited me for an interview and offered me a position as an assistant professor of biochemistry. At one of our schoolwide faculty meetings, my department chair spoke about the need to be intentional about diversity when reviewing applications. I am often reminded of that moment because it was WMed's intentionality that allowed me to re-enter a field that I love but one in which I had felt so unsupported for years. I have been able to mentor several African American students who are now in Ph.D. and M.D. programs. In the future, they will make an impact on the scientific and medical community. DEI initiatives specifically focused on African Americans are most needed because Blacks and African Americans have been lumped together in one category, but the communities in which African Americans live have a higher rate of health disparities. DEI initiatives with a focus on African Americans will bring African American scientists that are connected to the communities in which African Americans live and thereby improve health outcomes.



Catherine Clune-Taylor
Princeton University

The need for DEI is urgent

DEI initiatives impact science and medicine in at least two essential ways that not only positively reinforce each other but are also both issues of social justice. First, they increase diversity among the people involved in doing scientific research and practicing medicine in ways that bring different ideas, perspectives, and experiences to the table *and* address the historical and continued marginalization of certain groups over others. Second, this increase in diversity of approaches and backgrounds leads to better, more comprehensive science and medicine in ways that will likely benefit everyone but in particular those from marginalized communities. Science and medicine cannot and should not be isolated from the society in which they are created and function. One need only look to the history of scientific racism or contemporary differences in rates of Black gestational mortality and morbidity for evidence of this. And our society is not one which is, substantively, socially just. At a time that sees clinicians fleeing to other states due to the criminalization of essential medical care and families and trans people scrambling to relocate to trans-affirming states for the sake of their children and themselves, we must ask ourselves how the marginalization of women, trans folks, queer folks, and people of color from positions of authority—including within science and medicine—have contributed to the situation we find ourselves in today. Indeed, DEI initiatives are more urgent than ever.



Sharifa T. Love-Rutledge
The University of Alabama in Huntsville

The legacy of Congressman Stokes

The National Science Foundation (NSF)-funded initiative [Louis Stokes Alliances for Minority Participation](#) (LSAMP) is named after Congressman Louis Stokes, a champion of equity. It has broad and far-reaching impacts on the retention and placement of underrepresented minorities in STEMM careers. Without programs like this, so many talented scientists and their contributions to society would not exist. My career in STEMM is a small part of the large legacy of Congressman Stokes.

Congressman Stokes decried the inequitable systems within the US. However, he worked from within them to achieve equitable outcomes. His passion for equity inspired his 30-year career in the United States Congress. So impactful was his tenure in public office that the NSF named one of its grants after him. Like the Congressman, the program expands beyond the local and has a record of increasing the number of underrepresented scientists in STEMM. It uses evidence-based practices to provide hope, community, representation, and access that help level the STEMM playing field and retain many who might otherwise leak out of the pipeline. Daily, I see the LSAMP impact in

the successes of the scholars I work with, the scholars I have mentored who have STEM careers, and my peers who proudly claim the title of LSAMP Scholar. Congressman Stokes' legacy includes generations of scientists, doctors, and engineers; still, because inclusion and equity impact STEM retention and therefore scientific output, there remains a need for nationwide DEI initiatives like the LSAMP program.



Mark A. Phillips
Oregon State University

Science is a collective effort

Scientific progress has always been a collective effort bringing together individuals from different backgrounds, cultures, and generations to advance human knowledge. Fundamentally, this means that science is for everyone. We all have the right to contribute to it and have stakes in its outcomes. Science impacts almost every aspect of our lives and has improved the quality of life for people across the globe. However, certain groups have been and continue to be excluded from the process. The absence of these voices has led to research priorities that disproportionately center the wants of those with the most power at the expense of those with the most need. To address this, DEI initiatives in science and medicine are essential.

The impacts of DEI initiatives on biomedical research are clear. Cohorts of scientists recruited and supported by these efforts are increasingly shaping and altering the scientific landscape. Specifically, there has been a significant increase in research prioritizing conditions that disproportionately affect marginalized communities, coupled with growing willingness to ask difficult questions about what is driving the health disparities that plague them.

While these shifts provide hope for a future where science is truly for everyone, there are still many challenges to overcome. Underrepresentation, funding disparities, and retention issues are still evident. Without a sustained commitment to DEI, the progress achieved so far could be easily lost, and we must continue to recruit and support voices from marginalized groups.



Crystal D. Rogers
University of California, Davis, Department of Anatomy, Physiology, and Cell Biology

The caveat about DEI initiatives

In May 2020, George Floyd was murdered on camera, and much of the United States exploded with long-held resentment at its persistent inequities. Universities and others responded with statements of solidarity and efforts to recruit folks from diverse backgrounds. DEI initiatives have been ongoing for years in academia, but it is not clear whether mass recruitment leads to retention and, importantly, systemic change. People recruited into hostile environments often leave, perpetuating the illusion of progress without the acknowledgment of regress.

My personal experience has been one of growth—I have found a supportive community at UC Davis. Others have entered unchangeable and unhealthy environments. Yes, we still need DEI initiatives in academia and private industry, but it is imperative that as institutions explore recruitment to expand the diversity of their staff, faculty, and students, they ensure that they are bringing people into *inclusive* and *supportive* communities so that they can succeed.

To create environments where recruits can thrive and not simply survive, institutions must adjust tenure and merit assessments to account for the additional “hidden” service that individuals from historically excluded groups perform (i.e., the “minority tax”). Departments must ensure that senior faculty support changes to inequitable structures. Also, are the towns and cities in which the universities exist safe places for new recruits to live? Bringing people from diverse and historically excluded backgrounds to toxic and unsupportive or worse, dangerous environments will not lead to increased diversity. To improve the effectiveness of DEI initiatives, we should honestly assess why institutions and society are so resistant to change.



Michael J. Williams
Boston Electronics

Exposing the hypocrisy and inadequacy of past DEI efforts

During the summer of 2020, in response to the murder of George Floyd, the *Cell* editorial team published an editorial entitled “Science has a racism problem.” In this piece, the team wrote, “We are the editors of a science journal, committed to publishing and disseminating exciting work across the biological sciences. We are 13 scientists. Not one of us is Black. Underrepresentation of Black scientists goes beyond our team—to our authors, reviewers, and advisory board. And we are not alone.” It is a shame that it took the murders of George Floyd, Breonna Taylor, and Ahmaud Arbery in the same time frame to have scientific organizations do the considerable soul-searching necessary to address the pertinent issue of the inadequacy of efforts toward diversity, equity, and inclusion.

Dr. Brian Nord and Dr. Chanda Prescod-Weinstein [describe it](#) in these words: “Racism in science is enmeshed with the larger scheme of white supremacy in society. We need to rethink what scientific collaborations should look like. Black people need a seat at the table.” Science and medicine need to fulfill their claimed intentions of equal representation, because scientific institutions have met demands for justice with only gradualism and tokenism. Black scientists do not benefit from being the diversity hire for institutions to appear racially diverse, and Black students cannot benefit if they are treated as anomalies at science conferences. DEI initiatives are thus essential to provide the necessary resources for racially diverse scientific minds to reach their fullest potential.

DECLARATION OF INTERESTS

All authors declare no competing interests.