




We exist. We are your peers.

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We must all ask ourselves critical questions about our role in the persistence of racism in academia, its effects on our colleagues and intentional actions to improve equity for all.

Hidden Figures, a 2016 American film, is the true story about three Black women, Katherine Johnson, Mary Jackson and Dorothy Vaughan, who made key contributions to the mathematics, engineering and computational power that helped NASA and its astronauts get to space and return safely. When watching the film, I was surprised by the emotions that overcame me; the story reinforced that my struggle as a Black nerd was not new. In 2020, the conversation about racial discrimination and prejudice has been re-kindled after the eruption of large-scale protests in response to the murders of George Floyd, Breonna Taylor, Ahmaud Arbery, Rayshard Brooks, Elijah McClain and Tony McDade by the police. These acts carried out by the same police we are told are sworn to protect and serve us.

Finally, it seemed, Americans believed that elevated police brutality against Black Americans existed. Presidents, Deans, Chairs and other leaders in academia released statements that racism exists, and emphasized that there was no place for it in their own departments and research institutes. But the numbers tell a different story. We, the Black nerds, have been living under the oppression of both of these systems: elevated risk of police brutality as Black Americans and racism in academia. Although we have been on the frontlines, battling racial discrimination in the secret world of America's ivory towers, many do not believe that we exist. We are like the *Moby Dicks*; you have heard of one or two during Black History Month. Oh, and Neil deGrasse Tyson.

We are commonly told that there are none of us, or that we are hard to find, owing to the 'pipeline'¹. I have always known there to be a number of Black nerds and highly intelligent, driven Black people engaged in science and engineering. Perhaps, this is because I am an alumnus of Morehouse College, a Historically Black College and University (HBCU), where Black excellence was all around. Compared with primarily white institutions, HBCUs disproportionately educate scholars at the bachelor's degree level, who go on to become Black STEM professors^{2,3}. I have even been able to start a high school research program bringing in Black future scientists and engineers to work on cutting edge projects⁴. Even though the *Hidden Figures* film featured only three Black female mathematicians, there was in fact an entire room full of Black female human computers — in the

1960s! With all of this clear evidence, the mental games one must play to say that qualified Black scientists, mathematicians and engineers do not exist are befuddling. It is almost disrespectful to these brilliant, brave and courageous women, who walked into rooms full of white men 60 years ago, facing continuous and dogged doubting of their abilities, although NASA hired these Black women for their excellent mathematical skills. These women fought to be seen as peers and to be provided with equal opportunities and access to the coolest science and cutting edge technologies — like true Black nerds. Decades later, I would be walking into laboratories facing similar doubts from researchers at NASA, Centers for Disease Control and Prevention (CDC), Georgia Institute of Technology, Emory University, National Institutes of Health (NIH), Massachusetts Institute of Technology (MIT), and many more.

I may have earned my PhD 14 years ago, but I have been Black in America for over 40 years. I am a Black man, who lives in a Black body. I think it is important for my professor and research colleagues to understand that I am not different from other Black people. All the things that you say about Black people, you are saying about me. What happens in the world to Black people is happening to me. It happens to my family. Fears that other Black people take on are the same fears that I hold. The joy that I see when justice is surprisingly carried out, is also my joy. I am not different. My mother is Black. My father is Black. My brothers are Black. My grandmothers were Black. My grandfathers are Black. My cousins are Black. I am Black. I am aware of it, I know it, and I love being Black. I am the second oldest of six boys; I have five brothers and thus, when I worry about Black men, it is not just about me, it is about my brothers as well. My youngest brother was born in the same year as Tamir Rice; they would be the same age if Tamir were allowed to live past the age of 12 and were he not killed by police while playing. I have been harassed by police with guns drawn — I have fit 'the description'. And I certainly have been doubted for being who I am in professional settings.

There have been Black professors before me. There are Black professors now. We exist. However, we do not exist at the numbers we represent of the US population. Black tenure-track faculty in engineering is 2.5%⁵, but Black people make up 13% of the US population.

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We are less likely to be funded at federal agencies and not by just a little bit. Studies have indicated that Black professors are 50% as likely to be funded with all other qualifications being equal⁶. Bias in the system has been studied and published. One bottleneck for the funding of NIH grants of Black professors is low preliminary scoring and therefore, their proposals are significantly less likely to be brought up for discussion in the review panel⁷. Let us be cautious here not to disembody the reviewers from the process. This is a peer-review process. The reviewers are professors. Thus, other professors are the ones who score Black professors lower.

It is said that science is a meritocracy; however, that only holds true if Black professors' existence is accepted, and if we are considered to be worthy peers asking scientific questions and applying the scientific method to our work, even if the research topics are not mainstream^{7,8}.

My suggestion for every person who wants to do something immediately is this: be intentional. Score Black professors high in your grant reviews. This sounds taboo, but I have served as an observant standing member on a study section, and I suspect that reviewers find reasons to score their buddies high, to score well-known professors high although the proposal is poorly written, or to score someone high because of a particular research area. Subjectivity exists in the system. Score Black professors high. If there is no place for racism at your institution, your department or in your grant review panel, as stated in many publicly released statements, then who is unfairly disadvantaging Black professors? If this mystery cannot be solved, then perhaps it should just be made a policy to fund the proposals of Black professors at some percentage. We followed this strategy to promote early-stage and new investigators, because it was understood that helping professors establish a funding track record early in their career would be better for the entire scientific enterprise⁹.

Is the same not true for Black investigators?

Be careful with responding, because one answer is racist and the other is not.

In Academia, we stopped talking about racism, and rather focused on discussing diversity, equity and inclusion. It is a huge problem if someone is more offended when being accused of racism than for racist actions to continue to occur with impunity. When people say, "I don't know their heart," to know if a person is racist, I reply that I do not need to. Actions have always spoken louder than words. Noted Black author and civil rights activist James Baldwin captured this magnificently:

"I don't know what every white person in this country feels, but I can only conclude what they feel from the state of their institutions... I don't know whether the labor

unions and their bosses really hate me. That doesn't matter but I know I'm not in their unions. I don't know if the real estate lobby has anything against Black people, but I know the real estate lobbyists keep me in the ghetto. I don't know if the Board of Education hates Black people, but I know the textbooks they give my children to read and the schools that we have to go to. Now, this is the evidence. You want me to make an act of faith risking myself, my life, my woman, my sister, my children on some idealism, which you assume exists in America, which I have never seen."

To follow, I would add,

I don't know if NIH reviewers have anything against Black professors, but I know they fund us at 50% the rate of other professors.

I don't know if universities don't think Black professors are smart, but I know that for the last 40 years, only 2–2.5% of STEM professors have been Black⁵.

I don't know if the Nobel Committee believes that there are not any excellent Black scientists; I just know that a Black person has never won the Nobel Prize for science.

I don't know if Alex is a racist, but I know Alex has gotten comfortable wimming in a racist system.

I don't know if Sam is a racist, but I have heard Sam say racist things.

I don't know if any of these people are racist, but it is too dangerous for me to truly believe that they are not.

See colour. Be intentional with diversifying your programs, your departments and your faculty. Be anti-racist. Call out racist statements in closed-door meetings and bias in review panels. Address racist actions in public settings. Believe Black people. Believe Black graduate students. Believe Black professors. We walk among you. We exist and we are your peers.

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Competing interests

There is no competing interest.