"No One Wants to Believe It": Manifestations of White Privilege in a STEM-Focused College

Kelly Grindstaff & Michael Mascarenhas

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Kelly Grindstaff
The College of Saint Rose

Michael Mascarenhas
University of California, Berkeley

The lagging behind of underrepresented minority (URM) students in higher education, and particularly in the STEM fields, is well documented. In this paper we draw on critical race theory in education to frame and present counter-narratives of URM students in STEM fields, to explicate the function of the interactions that occur between these students and their (mostly White) instructors and peers. Focus group interviews with URM students (and staff) at a STEM focused college identify three ways in which White privilege is enacted through these interactions: in group projects; in cheating accusations; and in the grading process. Our participants illuminate particular manifestations of White privilege in STEM classrooms and on campus, and we place these within the context of "colorblind" changes in higher education in the U.S.

Introduction

The lagging behind of underrepresented minority (URM) students in higher education is well documented (Abdul-Alim, 2015). Graduates in STEM (science, technology, engineering, and mathematics) fields are perhaps farthest from being representative of their population. For example, according to the National Science Foundation, in 2014 5.9% of STEM bachelor degrees in the United States were earned by African Americans (who made up 13.3% of the population) and 9% of STEM bachelor degrees were earned by Latinx persons (who made up 17.8% of the population) (National Science Foundation, 2017).

Explanations of the racial achievement gap that focus primarily on the inadequate skills and preparation of URM students, as well as differing cultural capital, ignore the mechanisms and practices with which White privilege is conferred in education, particularly at what Bonilla-Silva (2015) has labeled historically White colleges and universities (HWCUs).

In this article, using the voices and experiences of URM students and, to a lesser degree, staff, at Tech U, we present their narratives of the impact of manifestations of White privilege to explain the persistence, and in some cases widening,[1] of the achievement gap, particularly in the STEM disciplines. We employ critical race theory (CRT) to conduct and present research grounded in the experiences of URM students to explicate and theorize what Anderson (2015) has labeled "the White space" of STEM.

Through the stories our URM participants tell, we identify three ways in which White privilege is conferred in STEM education: a) in group projects, b) in cheating accusations, and c) in the grading process. Of particular relevance to this research are the ways in which these interactional practices, together with recent colorblind policies and mechanisms, contribute to a unique form of White privilege in STEM education. STEM departments and programs like the ones found at Tech U represent a particular type of isolation and discrimination for URM students. These

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Correspondence should be sent to Michael Mascarenhas, Associate Professor, Department of Environmental Science, Policy & Management, University of California, Berkeley, CA 94720-3114. E-mail: mascarenhas@berkeley.edu

[1]In 2010, 6.1% of STEM bachelor degrees were earned by African Americans. That percentage dropped slightly to 5.9% in 2014 (National Science Foundation, 2017).

institutions are not simply White in number; they are White in culture. We seek to elucidate how that culture operates.

Research Agenda and Design

In the spring of 2015 two students approached one of us, a male professor of color who had taught one of the students, describing concerns about various forms of racism on their campus (Tech U). Because the professor had shared in class that he had experienced similar struggles in his life and work these students felt they would be listened to. They described numerous ways in which they and other URM students were subjected to subtle and often invisible forms of discrimination on campus. They also talked about how difficult it was to voice their concerns and experiences in classrooms and on campus in this predominately White space.

Once the talking began, it was quickly decided that the emerging stories should be shared more widely—within Tech U as well as the broader higher education community. The lead author, a White woman working in STEM education, was invited to join the project.

Our research agenda was broad:

(1) Describe the experiences of URM students who were willing to participate in focus groups, with regards to how their racial/ethnic identity played a role (a) inside and outside classroom experiences on campus, including academic achievement and (b) in belonging to communities and using resources on campus. The students and the researchers developed discussion questions for focus groups. Together with the two students, we conducted five focus-group interviews over two semesters.
(2) Describe the sociocultural context of Tech U and higher education in the United States in general, within which these students' experiences take place.

The questions we explored came primarily out of what the participating URM students wanted to talk about. The quoted segments of interviews presented in this article are not a representative sample of the participants we interviewed. Rather, we relied heavily on the words of the most vocal and articulate students in describing their experiences. It is worth noting that there was a general shared group experience on campus among all participants, regardless of their passion to speak about it. Many students agreed and corroborated the experiences of the most vocal participants, and never once in the safe space of the focus groups was a contradicting experience described.

Participants

The two students became responsible for recruiting other student participants who would be willing to share their experiences. We interviewed 18 undergraduates (10 women: five seniors, two juniors, and three sophmores and eight men: three seniors, four juniors, and one freshman). One male and one female graduate student also participated. All participants came from urban communities and self-identified as ethnic and racial minorities (Jamaican American, Mexican American, Colombian, Dominican American, African American, Caribbean American, and biracial).

Almost all of the stories we tell in this article were voiced by women. This may be because females of color likely experience higher rates of discrimination in STEM fields, where women are greatly underrepresented. STEM is not only a White space but also a mostly male space. We will delve into this further in the conclusion. Not surprisingly, all the students who were willing to share were active in one or more cultural groups on campus, indicating that being a URM student was a significant aspect of their identity. Thus, we are not claiming that this group of students is representative of all URM students at Tech U, nor can we generalize to URM students on all campuses. What we aim to elucidate here is a rich narrative woven of students' experiences that are worth listening to with regards to contemplating how to increase college success, especially in the STEM fields, for students like them. In addition, with 3% of the URM population at Tech U participating, we believe that their stories need to be taken seriously and further explored. The two students who had the courage to come forward, recruit others, and initiate this process (involving much emotional work) deserve our gratitude, as do all of the participants for sharing their experiences.

Critical Race Theory

Critical race theory (CRT) comes out of critical legal studies and analyzes the effects of race and racism in US jurisprudence (DeCuir & Dixson, 2004; Ladson-Billings, 2005). The tenets or elements that inform CRT morph with the style and focus of scholarship employed by different disciplinary traditions, starting with law and growing to encompass

sociology, history, education, women's studies, and ethnic studies (Solórzano & Yosso, 2002). We draw on scholars who have used CRT as an analytical tool in education to "conduct and present research grounded in the experiences and knowledge of people of color" (Solórzano & Yosso, 2002, p. 23). We have combined the tenets of CRT used in analysis in education by DeCuir and Dixson (2004) and Solórzano and Yosso (2002):

(1) The permanence and intercentricity of race and racism with other forms of subordination. In other words, race matters in individual experiences with the law, education, the economy, and other facets of US society. Race is intertwined with other forms of subordination such as sexism.

(2) Whiteness as property. Connected to the continuing and significant effects of racism mentioned above, the notion of Whiteness operates as a right to possess, transfer, use, and enjoy the ramifications of Whiteness (Ladson-Billings & Tate, 1995). We interpret "Whiteness as property" to be operationalized in the social, cultural, and economic privileges that McIntosh (1988) delineated as White privilege.

(3) The centrality of experiential knowledge and counterstorytelling. We need the authentic voices of people of color to "cast doubt on the validity of accepted premises or myths" (Delgado & Stefanicic, 2001, p. 144).

(4) The challenge to dominant ideology and the critique of liberalism. For example, CRT disputes taken-for-granted notions of meritocracy, equal opportunity, and objectivity. Liberal legal ideology has promoted connected notions of neutrality of law, incremental change, and colorblindness, which CRT similarly challenges.

(5) The commitment to social justice and recognition of "interest convergence." Part of the research agenda is the goal of eliminating racism, sexism, and other forms of oppression. A necessary step toward doing so is understanding how oppressive structures, institutions, and practices operate and are experienced. "Interest convergence" refers to the fact that gains toward social justice for communities of color only happen when those gains also serve the interests of Whites and/or do not disrupt the normal way of life for Whites.

Thus, through the counterstories presented in this article, these URM students debunk the myth of meritocracy and illuminate the subtle (and often unconscious) ways that Whites enact their privilege in classrooms. The particular manifestations of White privilege in STEM education detailed in the article underscore the enduring effect of what W. E. B. Du Bois (1903/1999) has fittingly described as a system of deep Whiteness where Whites, in this case White students and instructors, assume superior roles in teaching and learning to the detriment of students of color. We place these counterstories in the context of enacting colorblind policies at Tech U and other institutions of higher education.

Counterstorytelling: Manifestations of White Privilege

After participating in the focus groups, transcribing the recordings, and reading through what the participants said, we identified three manifestations of White privilege common in classroom interactions. As relayed in the article, the URM students we interviewed felt that their contributions did not seem to matter as much as their White collaborators' in group projects; that they were more likely to be falsely accused of cheating; and that they did not feel they could challenge grades and receive the benefit of the doubt like their White peers did.

Group Projects and Student Biases

Project-based learning is increasingly a preferred pedagogy in STEM. In this learner-centered approach, students bring their experiences, perspectives, and ingenuity to work collaboratively in small groups to solve a specific problem or design a particular solution. For many students of color, however, collaborative projects represent an especially inhospitable learning environment where their own experiences are regularly challenged and their abilities underestimated. For example, Ariana, an African American student, described the following:

> With my group projects, I always see my group members looking at me or . . . talking down to me in a specific way. As if I'm not as smart as they are. . . . There is a group project where we are designing something. I'm the mechanical engineer [in the group]. I know my stuff, but they were asking the most basic questions like, "Do you even know what a free-body diagram is?" . . . [As] if I didn't know these freshman concepts. . . . You see a lot of people talking down to you. I think it's because I'm Black; maybe because I'm a female.

Likewise, Adrianne, a Mexican American, recalled,

[In my] freshman year, we had a cell bio project and you were supposed to get in a group, make a theme that you study, and then make a report. So we were trying to do the project and no one wants to hear what I have to say. But then if someone else [in the group] said something of similar caliber, it was like, "Oh, this is great; we should do this." And I'm like, "Excuse me, that was something that I came up with that we should do. Why am I not getting credit?" I'm like, okay, fine.

Similarly, Stephanie, who is also a Mexican American, experienced a frustrating encounter when she tried to take on a leadership role in writing a report.

But then when it comes time for me to like, organize them and tell them what to do, like, "Look, you are not doing your job; I need you to do this." It's like, "Oh, you know, I was just. . . ." [To which I would respond] "No, you weren't doing what you were supposed to do." But say someone else [a White student] in the room said, "Oh, you know, maybe you should take up this and do the spectrometer instead of sitting here making agar." I'm like, "Excuse me, I said this just five minutes ago. Why are you not taking what I'm saying into consideration?" And it was just more and more of the same.

Common across these experiences is the assumed deficit of these women of color and thus White students not listening to their contributions. White students take up the leadership roles. Moreover, the fact that many participants (including those cited above) who articulated these experiences were both racial minorities and females underscores the uniquely complex gendered discrimination that they face, especially in fields like engineering that are still dominated by White men. Research of science classrooms reveals that boys will most often take leadership roles and girls are often found in stereotypical roles, such as the secretary (Scantlebury & Baker, 1992). The experiences of our participants support the idea that women of color come up against resistance when they try to take on a leadership role in group work.

As a consequence, the opportunity to cultivate the broad competencies encouraged by collaborative learning—critical thinking, analytical reasoning, problem solving, creativity, and effective communication—is often made more challenging for URM students. "When I'm in teams," reflected Jamar, a young African American man, "I will just try and get the job done. . . . It's just . . . something

I've got to do. Just me, do whatever I need to do, and then be gone from there." The messages from White students that URM students often receive about the relative worth of their contributions are a source of frustration. Students like Jamar "get the job done . . . and then be gone from there" to try to limit that frustration.

Joanna, an African American, explained that in her "team groups . . . for different classes," she felt

very self-conscious about the things that I might say, [and] the way I express myself. [As a female student of color, you have to] be really careful with how you express yourself and really hide or omit things that might be natural to you. It's very natural [for me] to speak a certain way. . . . [But] I know I can't do that because I might make them [White classmates] feel uncomfortable; they might look at me funny. You don't want to feel judged; you don't want to feel like people think less of you because of something that is very natural to you. Because you start feeling that what is natural to you is wrong.

This is such a powerful counternarrative demonstrating the culture of the White space of STEM college classrooms. Joanna so clearly illuminates the permanence of race in her fear of being judged or making others uncomfortable, and she feels she must express herself differently so as not to feel "wrong."

"So it's rough," reflected Stephanie of her experience with group work in her classes:

It's hard enough for me to be in the class and be a minority and for everyone to try to overshadow me. But as my peers—it's even worse when *you* act in such a similar nature [as other racists]. You are supposed to be my peers. You are of my generation. You didn't grow up in the time where things like slavery . . . occurred. You shouldn't be treating me as if it still goes on. But racism is still alive, so [pause] it shows.

"No one wants to believe it," replied fellow Latina, Annalise, to Stephanie's comment. "It's hard to digest if you have never even thought of such a thing." For these students, it is the subtle nature with which they are written off, especially by their peers, and getting messages that they need to hide what is natural to them, that makes it so frustrating.

Cheating Accusations and Faculty Biases

The prejudice of White instructors, whether conscious or unconscious, as Natasha describes,

influences who gets blamed for academic dishonesty. This is a controversy that seems to be plaguing even the most prestigious schools (Perez-Pena, 2013). Reflecting on a recent experience where she had been falsely accused of cheating by a White classmate, Natasha, an African American sophomore, explained:

> There have been several instances where I submitted projects and other people have stolen my work. Instead . . . of accusing the other person, they sent me an email saying . . . we are going to give you an F for this course, [and] you can appeal it afterwards . . . I received the email during spring break but I was determined to look into this. After some "stalking" I found the dude . . . a White male, and I told him . . . "I'm not going to let this drop." When they [faculty] looked into it, they saw that the files and everything originated from my computer [that I had not cheated but this dude had cheated from me]. They were like, "Oh, my bad. We will give you your grade now." This [being accused of cheating] has happened a few times to me. Like, every semester I have been charged with academic dishonesty in some way or another. I feel like if I weren't Black, they wouldn't have come to me for that. But since I was Black, "Oh, it must have been her, she's not that smart."

Natasha's description reveals the bias held by some (likely many) White faculty that URM students are not as capable and got into the school or program because of affirmative action or similar policies. Unlike Natasha, many students of color who have been charged with academic dishonesty or labeled as a troublemaker in class simply "let it drop." Some of them who have been accused are deeply embarrassed because cheating reaffirms negative stereotypes; others feel intimidated; while still others feel that they would be accused of trying to politicize things by "playing the race card" if they complained. Thus, the negative messages that many URM students receive from these types of experiences with White students and faculty can be internalized, which leads to self-doubt, frustration, and, in some cases, pre-degree departure.

The Grading Process and Faculty Biases

Natasha described how her race and gender had affected her classroom experience:

> Well, it's been a theory that I started last semester. Over the course of my semesters, I was looking at my grades. . . . I know that I did better in the classes than the grades that they have given me.

And I know for other [White] students . . . there will be a professor who is like, "Oh, I'm going to give you an A– just because of this." Or, "I'm going to give you an A because of that." Well, I feel like it's because I'm a Black female that they have always rounded me down. Like, literally, taken off points so that I got a lesser grade.

Natasha's personal experiences at Tech U confirm other studies that consistently find racial and gender biases among university and college professors (Daniel Tatum, 1997; Feagin, 2010; Feagin, Vera, & Imana, 1996; Steele, 2008). Natasha's experience of being routinely "rounded down" while White students are given the benefit of the doubt and "rounded up" reveals the deep-seated and often unconscious bias of White instructors and also that White students felt more comfortable asking for re-evaluations or extensions.

Natasha told another particularly disturbing classroom experience:

> In my BME [biomedical engineering] concentration course, I was the only African American female in the class, in addition to one African American male [in a class of 50 students]. Approximately the first two classes I sat . . . on the side of the classroom closest to the front of the building exterior. At around the third or fourth class session I chose to sit with the African American male on the other side of the room because I felt more comfortable with him and our camaraderie would be good for collaboration purposes. One class session [after we began sitting together] I came in and the seat next to him was taken, so I sat on the same side, a couple rows ahead, in the front. While teaching the professor said to me, "I noticed you changed your seat. You should sit in the front from now on." He did not make this statement about seating to anyone else who moved seats during the first couple of classes. I then prompted him as to why I should sit in the front, to which he responded, "because I know that you'll talk back to me." I was quite perplexed and annoyed, but mostly concerned. I did not know why he would make that statement. That wasn't the last time I felt singled out by that professor.

As the grading and seating examples illustrate, these under-the-radar assumptions by faculty underscore the ways in which getting good grades means more than doing good work for URM students.

Annalise, a Dominican American, replied to the previous conversation this way:

> Just going along with achievement, I know in many classes [that] people have at some point in time

either brought something to the professor to either get [better] grades [for a particular assignment] or to get their final grade [changed]. And these people are mostly White males. And [these visits help in] getting more points back and getting their grades up. I never did it, personally, because I wouldn't necessarily feel that entitlement per se. And I don't know if that would work for me.

"I know of another instance," replied Stephanie, a Mexican American,

[In my] freshman year, physics, I barely pulled out a C. And a Caucasian woman—she was doing worse than I was—she probably had a D. But the next thing I know, her parents called the professor and she ended up with, I think, a B– in the class. This is after she did horribly on the final. She told me about it! So I don't know if I have those types of connections, and be able to pull those strings, but definitely it's something that I experienced here.

Negotiating for higher grades, at least from the observations of these students, is something that their White classmates, and in some cases those White classmates' parents, have come to consider part of the grading process. And in an era of grade inflation, rising numbers of adjunct faculty, and student course evaluations, many faculty—tenured and nontenured—can be willing to accommodate (Arum & Roksa, 2011). Arum and Roksa (2011, p. 4) have referred to this phenomenon as "the art of college management," in which college success is primarily achieved by schedule selection, taming professors, and limiting workloads. Annalise, Stephanie, and other students we interviewed observed that the use of cultural capital by their White classmates reproduced racial inequality on campus because White teachers devoted more time to and made more favorable assumptions about White students, allowing them "to get by with far less than maximum effort" (Kuh, 2003, p. 28).

Not surprisingly, our participants did not share this sense of entitlement to challenge their teachers' assessments. The benefit of lobbying the professor for a better grade was dwarfed by the risk that such an action would confirm the stereotype that they need special treatment in order to receive a good grade. These types of stereotype threats have been shown to contribute to consistent gaps in school achievement and retention rates between Whites and African Americans at all levels of schooling (Steele, 2008; Steele, Spencer, & Aronson, 2002).

For Delgado and Stefancic (2001) counterstory-telling "help[s] us understand what life is like for others, and invite[s] the reader into a new and unfamiliar world" (p. 41). The world of URM students is one in which the playing field is not level, where race matters to how they are treated by White peers and instructors, thereby enacting a legacy in a society that equates differences in students of color with deficit.

Context of Colorblindness

The context within which these interactions occur is significant, and we use the term "colorblindness."

In an age of colorblindness it is no longer socially permissible to use race, explicitly, as a justification for discrimination, exclusion, and social contempt. So we don't. Rather than rely on race, we use our criminal justice system to label people of color "criminals" and then engage in all the practices we supposedly left behind. (Alexander, 2012, p. 2)

Similarly, in an age of colorblindness, it is no longer acceptable to use race as a justification for special treatment, or programs to promote equity in education. Rather, since it has been several decades since the height of the civil rights movement, some institutions have decided that programs to promote diversity and equity such as affirmative action are no longer necessary. In higher education, affirmative action bans and the loss of diversity offices and programs (described in this article by staff at Tech U) exemplify colorblind policies.

In her analysis of public institutions barred by state law from considering race in admissions—California, Florida, Texas, and Washington—Garces (2015) found that the percentage of enrollees in graduate programs in engineering who were students of color declined from a pre-ban level of 6.2% to a post-ban level of 4.6%. There was a comparable decline in the natural sciences, from 7.8% to 6.3%. Racial diversity has also fallen at selective undergraduate institutions that are barred from considering race as a factor in admissions (Garces, 2015).

Colorblindness, Bonilla-Silva (2010, 2015) argued, has taken on a strong anti–government intervention stance where the cream, judged by merit alone, will rise to the top. Support for color-blind norms comes from its commitment to individualism, common sense, and the principle of equal (not equitable) opportunity (Alexander, 2012; Bonilla-Silva, 2010; Mascarenhas, 2012). This ideology has been supported by a neoliberal market-based logic in higher education that increasingly defines students as "consumers" and "clients,"

Table 1. 2015 Tech U Student Diversity Grouping

Racial or ethnic group	Undergraduates		Master's students		Doctoral students	
	Number	Percentage	Number	Percentage	Number	Percentage
Hispanic of any race	470	8%	6	3%	16	2%
African American	177	3%	4	2%	19	2%
White	3,413	59%	66	28%	323	41%
American Indian and Alaska Native	8	0%	0	0%	0	0%
Asian	585	10%	13	5%	33	4%
Native Hawaiian and other Pacific Islander	1	0%	0	0%	0	0%
Two or more races	402	7%	2	1%	16	2%
Race and ethnicity unknown	108	2%	0	0%	16	2%
Nonresident alien	614	11%	146	62%	360	46%

coveting choice in the educational marketplace (Arum & Roksa, 2011).

URM Student Populations, Policies, and Programs at Tech U

At the time of the study, the undergraduate student body at Tech U was 58% White (Table 1). However, due to a large percentage of Asian students, the numbers of URM students were quite low. Hispanics of any race only comprised about 8% of undergraduates in 2015 and African Americans constituted only 3%. In 2014 the undergraduate percentages were 8% and 4%, respectively. These student numbers are below national averages and far below being representative of their populations.

As part of the study, we conducted one focus-group interview with two staff, both African American men. No URM faculty agreed to participate. The interviewed staff members provided insight into the context of programs and services available for students at Tech U. They informed us that several staff of color who were committed to diversity on campus and had been a reassuring resource for many URM students had recently left Tech U. For example, the assistant director of student activities and multicultural programs, who was responsible for advising multicultural student organizations and providing support and advocacy for underrepresented and underserved student populations, left in 2014 after less than three years at the institution. The vice provost of institute diversity and the two staff we interviewed for this project also left Tech U.

The loss of such positions and staff are part of a trend to remove any institutional offices and people devoted to institute diversity. Gone are the Office of Minority Student Affairs (committed to the coordination, enhancement, and strengthening of cultural education and programs), the Office of Institute Diversity (committed to ensuring that Tech U reflected a diverse profile of students, faculty, and staff), and the Higher Education Opportunity Program, or HEOP (open to in-state residents who were academically and economically disadvantaged).

Universities and colleges like Tech U are currently in the midst of a building boom nationwide, as they invest tens and hundreds of millions of dollars to revitalize their student unions, performing arts centers, athletic facilities, dormitories, and dining halls—amenities, services, and programs that attract mainly White "clients" to their campuses. Yet these same schools, in the name of austerity and balancing budgets (in an age of colorblindness), are also cutting a variety of grant, scholarship, and fellowship programs designed to help low-income URM and first-generation students achieve a college education.

Dennis, an African American staff member, explained,

> The *idea* that we should *all* support minority students . . . is . . . good, everyone should be able to address them [minority student needs]. The thing is, everybody can't because everyone is not trained to do so, nor does everybody want to. In order to want to, you have to admit, number one, that there is an issue [of racism on campus]. And a lot of people at this institution are from here, born here, never left, raised their family here. You [they] are bred in the sort of [colorblind] culture.

This colorblind culture supports the idea of meritocracy. On this campus, like so many others, Whites prefer not to be reminded by people of color, either directly or indirectly, that race still matters and continues to have significant material consequences (Thornhill, 2015). Dennis continued,

> When we had an Institute of Diversity [faculty and staff assumed that] they were going to take care of it. [However,] with the removal of that [the Institute], [the school] was not ready to support . . . Black and Latino students, because they don't

know how to. So I could be in conversations where—and I do all the time—with faculty and administrators, and they ask me "How do we do this? How do we do that?" Or I'll ask them "Can we do this to support minority students?" And then there is crickets. No one—everyone is looking at everybody [else]. It's a lot of training, support services, and resources [that is required].

A prerequisite for such resources is acknowledging that race still matters in college achievement. Absent of programs specifically tasked with safeguarding student diversity and multiculturalism on campus, faculty and administrators can continue to operate within their own assumptions with no critique of the status quo. Dennis elucidated,

I think that's almost an out to be able to say, "Well, I don't have to address that. I don't see color so that absolves me of the responsibility to recognize [it]." We don't have an official charge [that would] force people to step up to the plate. It's been a little more difficult without specific resources on campus to address those and talk about those topics [racism on campus]. Even when I tried to put forth a minority mentoring program with faculty, staff, and students . . . I think actually I was doing it for Black students in particular, and I was told I would have to change it because it wouldn't go through if I kept it with that name [Minority Mentoring Program].

There has been a shift away from supportive services and programs that target the specific needs of URM students because they are being framed as unfair and biased against other (especially White) students. And the White faculty and staff's rhetoric of being colorblind at worst and uncertain what to do at best allows them to ignore their investment in White privilege. Colin, the other staff participant and also an African American, explained,

The reason why we have … a Greek life advisor … [is] because that is a population that needed support. The reason why you have [an] international student services person is because that is a [population] that needs support. The reason we have an assistant dean of disabilities services [is] because there are students with disabilities. Students with different demographics that have specific needs; different needs than others. You are not saying one is less capable than the other, but not having that support means you are ignoring the social inequalities that affect the experience [of those students].

Dennis recognized that URM students were dealing with racism on campus and likened the URM student experience to "a new trauma . . . that we don't necessarily know how to deal with." He explained,

The coping mechanisms differ for . . . different races and ethnicities, but . . . students of color [are] a traumatized group. For one, they don't know how to cope [and] don't have that structural support. [They] just have to deal with it. When you deal with it internally, and if you don't have the coping mechanisms or strategies or support system to deal with it, that internal frustration can manifest itself in unproductive ways.

"I don't want to use the word 'depressing,'" reflected Joanna, "but it's—it's like a reality check because I'm literally the only African American or the only ethnic person in class. I will turn around, [and] I am not going to see anyone that looks like me." It is in these extremely White learning environments where the risk of isolation, subordination, and negative stereotyping are most acute (Anderson, 2015).

STEM college classrooms, at least at Tech U, where URM students are a superminority are the exact environments where URM students need targeted support. However, in an era of colorblindness, supports are being weakened rather than strengthened. The result for colleges like Tech U is to move away from striving for equity, and not surprisingly achievement gaps remain.

Discussion and Implications

Attempting to employ all the tenets of CRT, we took seriously the notion of counterstorytelling and listening to the experiences of URM students at Tech U. Their stories clearly pinpointed how their racial and often gender identities mattered in how they were treated by and interacted with White students and instructors. We interpret these interactions as manifestations of White privilege.

Peggy McIntosh (1988) defined White privilege as unearned race advantage and conferred dominance. Institutional racism is predicated on preserving White privilege (Anderson, 2011; Anderson, 2015; Pulido, 2000). White privilege on college campuses is manifested in the subtle and potentially unconscious bias of White students and faculty interpreting the difference of URM students as deficit, what Bonilla-Silva has mockingly described as "affirmative action babies." In this scenario, White students and faculty do not intend to hurt students of color but rather constantly remake the social relations and practices that fit the dominant racial

regime (Bonilla-Silva, 2010, 2015). As a result, White students are able to accrue unintended benefits—capitalizing on their Whiteness like property—while URM students are left with much to prove before gaining real acceptance (Anderson, 2011, 2015; DeCuir & Dixson, 2004).

As mentioned earlier in the article most of the URM students who shed light on the interactions elucidated here are women. Perhaps these young women were more likely to pick up on the subtle ways in which racial oppression occurs because, especially in STEM, it is rooted in the fact that their identity is at the intersection of being a URM student and a female. The fact that these young women had the most to say is a good indication that their experiences reflect both White privilege and male privilege. The unconscious bias of faculty and peers resulting in less leadership in group work, assumptions of cheating, or being "rounded down" in grading is also likely due to the fact that many of our participants are women. Their experiences have left us wondering how many women of color in STEM did not have Natasha's determination to "not let it drop" and instead got out of STEM or were not as successful as they could have been in STEM fields and careers. This intersection is worth further investigation.

The experiences of URM students detailed in the article are predicated on the (unconscious) bias of White privilege (and in many cases male privilege) enacted by White students and White instructors, together with the fear of URM students to reinforce stereotypes. The psychological toll extracted from URM students in such White learning environments undermines not only their academic achievement but also their sense of self-worth (Daniel Tatum, 1997).

Scholars argue that it is in these White spaces where the need for physical spaces on campus for minority cultural groups and culturally relevant teaching in classrooms is critical to the mental health and academic achievement of minority students (Daniel Tatum, 1997; Gay, 2010; Ladson-Billings, 1995). However, such spaces and practices can only be precipitated by listening to the experiences of students of color in order to uncover the ingrained disparities that undergird White privilege and in order to debunk myths of meritocracy. More listening does not seem to be on the horizon in an era of colorblind schooling, but we must push for opportunities for URM students to tell their stories.

Whereas the described interactions and contexts are not exclusive to STEM higher education, we believe they are particularly salient in STEM classrooms and institutions. Project-based learning and collaborative or group work are mainstays of education but are particularly touted in the STEM disciplines because students problem solve together in mathematics classrooms, are encouraged to collaborate as scientists do, or brainstorm in the engineering design process together. We are proponents of this pedagogy in our own teaching. However, the results of this study have caused us to rethink how we use group work and pay attention to group dynamics to do our best to safeguard against group work becoming a negative experience for our URM students. We need to draw attention to biases and assumptions students might hold and employ practices such as having predefined and rotating roles for group members.

We also conclude that it is essential to educate students, faculty, and staff to these dynamics in the classroom. This takes time and commitment and expertise on the part of the institution. In short, we must recognize the prejudices, practices, and policies playing out as a result of White (and male) privilege in order to debunk the myth of meritocracy. This requires avenues for listening to URM students, especially female ones (as we try to do in this research); opportunities for awareness and training for instructors; the reinstitution of programs to meet the needs of URM students; and efforts to make campuses not colorblind but rather open to the stories of URM students who eloquently illuminate the permanence of race and White privilege in their lived experience. If institutions can really listen to these counterstories, they can enable learning, conversation, and new understandings of systemic and institutional racism, White privilege, and male privilege.

For example, a report based on these focus groups was presented to a group of administrators at Tech U in the summer of 2016. We don't know what role conveying these students' experiences played, but we do know that in the spring of 2018 Tech U advertised for a director of multicultural programs. It looks as though one of our suggestions above—the reinstitution of programs to meet the needs of URM students—could have been taken seriously at Tech U. We hope that the counterstory presented here can be a step toward working for social justice on college campuses, especially in STEM.

References

Abdul-Alim, J. (2015). Efforts to close gender, race gaps in STEM not working. *Diverse Issues in Higher Education*. Retrieved from https://diverseeducation.com/article/75927/.

Alexander, M. (2012). *The New JIM CROW. Mass incarceration in the age of colorblindness.* (Revised ed.). New York, NY: The New Press.

Anderson, E. (2011). *The cosmopolitan canopy: Race and civility in everyday life.* New York, NY: W.W. Norton.

Anderson, E. (2015). The white space. *Sociology of Race and Ethncity, 1*(1), 10–21. doi:10.1177/2332649214561306

Arum, R., & Roksa, J. (2011). *Academically adrift. limited learning on college campuses.* Chicago, IL: The University of Chicago Press.

Bonilla-Silva, E. (2010). *Racism without racists: Color-blind racism and racial inequality in contemporary America.* (3rd ed.), New York, NY: Rowman and Littlefield Publishers, Inc.

Bonilla-Silva, E. (2015). More than prejudice: Restatement, reflections, and new directions in critical race theory. *Sociology of Race and Ethncity, 1*(1), 73–87.

Daniel Tatum, B. (1997). *Why are all the black kids sitting together in the cafeteria?* New York, NY: Basic Books.

Decuir, J., & Dixson, A. (2004). So when it comes out, they aren't that surprised that it is there: Using critical race theory as a tool of analysis of race and racism in education. *Educational Researcher, 33*(5), 26–31. doi:10.3102/0013189X033005026

Delgado, R., & Stefancic, J. (2001). *Critical race theory: An introduction.* New York, NY: New York University Press.

Du Bois, W. E. B. (1999). *The souls of black folk: Authoritative text, contexts, criticism.* New York, NY: W. W. Norton. (Original work published 1903)

Feagin, J. R. (2010). *The white racial frame. centuries of racial framing and counter-framing.* New York, NY: Routledge.

Feagin, J. R., Vera, H., & Imana, N. (1996). *The agony of education. black students at white colleges and universities.* New York, NY: Routledge.

Garces, L. M. (2015). The University of Texas at Austin's defense of affirmative action in Fisher v. University of Texas: Lessons for institutional policies and practices. *Association of Mexican American Educators Journal, 9*(1), 73–88.

Gay, G. (2010). *Culturally responsive teaching. Theory, research, and practice.* New York, NY: Teachers College Press.

Kuh, G. D. (2003). What we are learning about student engagement. *Change, 35*(2), 24–32. doi:10.1080/00091380309604090

Ladson-Billings, G. (1995). But that's just good teaching! the case for culturally relevant pedagogy. *Theory into Practice, 34*, 159–165.

Ladson-Billings, G. (2005). The evolving role of critical race theory in educational scholarship. *Race Ethnicity and Education, 8*(1), 115–119.

Ladson-Billings, G., & Tate, W. (1995). Toward a critical race theory of education. *Teachers College Record, 97*(1), 47–68.

Mascarenhas, M. (2012). *Where the waters divide neoliberalism, white privilege, and environmental racism in Canada.* Lanham, MD: Lexington Books.

McIntosh, P. (1988). White privilege: Unpacking the invisible knapsack. In *Working Paper #189: White privilege and male privilege: A personal account of coming to see correspondence through work in women's studies.* Wellesley, MA: Wellesley College Center for Research on Women.

National Science Foundation. (2017). *Women, minorities, and persons with disabilities in science and engineering.* Retrieved from https://www.nsf.gov/statistics/2017/nsf17310/

Perez-Pena, R. (2013, Sept. 16). Students accused of cheating return awkwardly to a changed Harvard. *New York Times.* Retrieved from http://www.nytimes.com/2013/09/17/education/students-accused-of-cheating-return-awkwardly-to-a-changed-harvard.html

Pulido, L. (2000). Rethinking environmental racism: White privilege and urban development in Southern California. *Annals of the Association of American Geographers, 90*(1), 12–40. doi:10.1111/0004-5608.00182

Scantlebury, K., & Baker, D. (1992). Achieving a gender equitable classroom. In F. Lawrenz, K., Cochran, J. Krajcik & P. Simpson (Eds.), *Research matters to the science teacher* (Vol 5, pp. 93–100). Manhattan KS: National Association for Research in Science Teaching.

Solórzano, D. G., & Yosso, T. J. (2002). Critical race methodology: Counter-storytelling as an analytical framework for education research. *Qualitative Inquiry, 8*(1), 23–44. doi:10.1177/107780040200800103

Steele, C. (2008). Stereotype threat and african american student achievement. In D. B. Grusky (Ed.), *Social stratification. class, race, and gender in sociological perspective* (pp. 678–682). Boulder, CO: Westview Press.

Steele, C. M., Steven, J. S., & Joshua, A. (2002). Contending with group image: The psychology of stereotype and social identity threat. *Advances in Experimental Social Psychology, 34*, 379–440.

Thornhill, T. (2015). Racial salience and the consequences of making white people uncomfortable: Intra-racial discrimination, racial screening, and the maintenance of white supremacy. *Sociology Compass, 9*(8), 694–703. doi:10.1111/soc4.12287