

# From Racial Resistance to Racial Consciousness: Engaging White STEM Faculty in Pedagogical Transformation

Journal of Cases in Educational Leadership  
1–14

© 2019 The University Council  
for Educational Administration

Article reuse guidelines:

[sagepub.com/journals-permissions](http://sagepub.com/journals-permissions)

DOI: 10.1177/1555458919829845

[journals.sagepub.com/home/jel](http://journals.sagepub.com/home/jel)



Chayla Haynes<sup>1</sup>  and Lori D. Patton<sup>2</sup>

## Abstract

Professor Arnie Copper is among the many science, technology, engineering, and mathematics (STEM) faculty who view the learning of STEM curriculum as an intellectual exercise that is race-neutral. In this case, the authors use the White Racial Consciousness and Faculty Behavior model to illustrate how racially minoritized students can experience the classrooms of White STEM faculty who fail to see connections between their teaching, course content, and racial justice. Institutional leaders and faculty developers can use this case to generate a timely critique of the enduring racism shaping higher education and fostering hostile learning conditions on college campuses.

## Keywords

STEM, whiteness, faculty, critical race theory, college teaching

## Case Narrative

Teaching is what Arnie enjoys most about the professoriate. “I like having a captive audience,” he says in jest. Prior to the professoriate, Arnie conducted research for NASA and IBM. He continued saying, I found myself surrounded by “a lot of arrogant White men.” It was an atmosphere that fostered “competition,” where “proving that you are right and better” than the next guy mattered. When a faculty position at

---

<sup>1</sup>Texas A&M University, College Station, USA

<sup>2</sup>Indiana University, Indianapolis, USA

## Corresponding Author:

Chayla Haynes, Texas A&M University, College Station, 4226 TAMU, College Station, TX 77843-4226, USA.

Email: [chayla.haynes@tamu.edu](mailto:chayla.haynes@tamu.edu)

Flagship State University, a predominately White, public institution, became available, Arnie did not hesitate to apply. He accepted an assistant professor position. Arnie also decided that he would have students call him “Arnie” because he wanted his future classroom to feel less contentious than his prior workplace. That was nearly 20 years ago. Arnie is now a full professor at Flagship State University.

Professor Arnie Cooper recently established an undergraduate concentration in Game Development in the Computer Science department. One of the first gaming projects he assigned in a course on multiplayer gaming was funded in part by GameCo Inc. about migrant farm workers. The user would manipulate an avatar that represented the migrant farm worker. “Migrant farm workers are by and large Latinx, so the game had a huge cultural component,” says Arnie. This fact had little bearing on Arnie’s choices about the homework he assigned students prior to the class, where he introduced this particular gaming project. During a discussion about how the avatar should be depicted, Arnie recalled looking out into the class and thinking to himself, “How do I go about making sure the class conversation remains productive?” The majority of the students in the class, like him, were White. But, there were also a few Latinx students. While Arnie thinks analysis of story and narrative are valuable, he does not believe that a focus on them is a good use of his limited time with students.

This spring, Arnie is teaching the Scripting for Games course to 15 upper class students, most of whom are White. To help students make sense of the material covered in the readings, Arnie placed students into groups of three for a class activity. Each group was tasked with adding an element of luck and economy to the game of checkers to alter the way the game is played. One group appeared to struggle. While observing the group in progress, Arnie overheard Chad, a White student, say “Our goal is to improve the game, so why should we be concerned with whether a game move is too powerful?” Shana, a student of Asian descent rebutted saying, “It just depends on what it is we are incentivizing. We should come to some sort of agreement about what type of game strategy has value or draws currency. What are your thoughts, Liz?” Liz, a White woman, appeared disenchanted with the activity. With hesitation, Arnie turned to the struggling group and said, “How are you all coming along?”

## **Introduction**

Arnie’s case narrative was inspired by findings from a constructivist grounded theory study that used a critical race theory lens to examine how racial consciousness contributes to the ability among White faculty to disrupt the enduring racism inherent in college teaching. Rather than presenting an extreme, Arnie’s fictional classroom places emphasis on ostensibly mundane faculty–student interactions to illustrate how some White science, technology, engineering, and mathematics (STEM) faculty engage in racial resistance. The literature is replete with examples that detail the challenges racially minoritized students’ experience while pursuing a STEM degree at predominately White institutions (PWIs; Thomas & Drake, 2016). Feelings of isolation, negative interactions with faculty, and encounters with racial microaggressions represent a few of the many barriers that make it difficult

for racially diverse college students to thrive in White institutional spaces, like STEM classrooms (Haynes & Joseph, 2016).

With support from funding agencies, like the National Science Foundation (NSF), higher education institutions are investing in programmatic initiatives geared toward supporting racially minoritized students enrolled in STEM disciplines. Yet dismal persistence rates mean that few racially minoritized students will complete advanced STEM degrees (Poirier et al., 2009) and even fewer will join the STEM faculty workforce. As of 2013, about 8% of underrepresented STEM faculty held senior positions (associate/full professorships) (National Science Foundation & National Center for Science and Engineering Statistics, 2015). Faculty demographics with regard to racial diversity are also grim. In Fall 2013, 78% of full-time faculty were White, indicating an incredibly low number of racially minoritized populations comprising the professoriate (U.S. Department of Education & National Center for Education Statistics, 2016). Consequently, racially minoritized students rarely, if ever, have opportunities to enroll in courses with faculty whom share their racial or cultural backgrounds (Kaplan et al., 2018; Kelly, Gayles, & Williams, 2017; Stout, Archie, Cross, & Carman, 2018; Tuit, Haynes & Stewart, 2018; Walker, 2016). This predicament remains a matter of concern for institutional leaders in general and STEM academic departments in particular, as racially minoritized students continue to report that Faculty of Color contribute exponentially to their sense of belonging and well-being (Fairlie, Hoffmann, & Oreopoulos, 2014).

Interactions with same-race faculty members have emerged as a major factor influencing satisfaction among racially minoritized students at PWIs (Price, 2010). Presumably these students experience greater validation because some Faculty of Color are more adept at transitioning a seemingly race-neutral curriculum to one that is culturally relevant. Even as PWIs work to diversify their faculty, student activists, such as those aligned with *Concerned Student 1950* at Mizzou, are demanding that institutional leaders improve campus learning conditions for their racially minoritized students through teaching and curricula reform. In this article, we consider the profound challenge facing institutional leaders and all educators of racially diverse college students, but particularly those within STEM education; that is, *how do we engage White faculty who fail to see a connection between their teaching, course content, and racial justice?* By using Haynes' White Racial Consciousness and Faculty Behavior (WRC/FB) model (Haynes, 2013, 2017), we can evaluate the influence that racial consciousness has on the pedagogical decisions of White STEM faculty, as illustrated through our exemplar Arnie Cooper. An overview of the WRC/FB model is provided in the next section. The article concludes with teaching notes to assist White faculty in moving from racial resistance to racial consciousness in STEM classrooms and prompts for continued discussion.

## **WRC/FB Model**

Haynes' WRC/FB model (see Figure 1.) provides a theoretical explanation of how levels of racial consciousness influence White faculty's ability to promote equitable

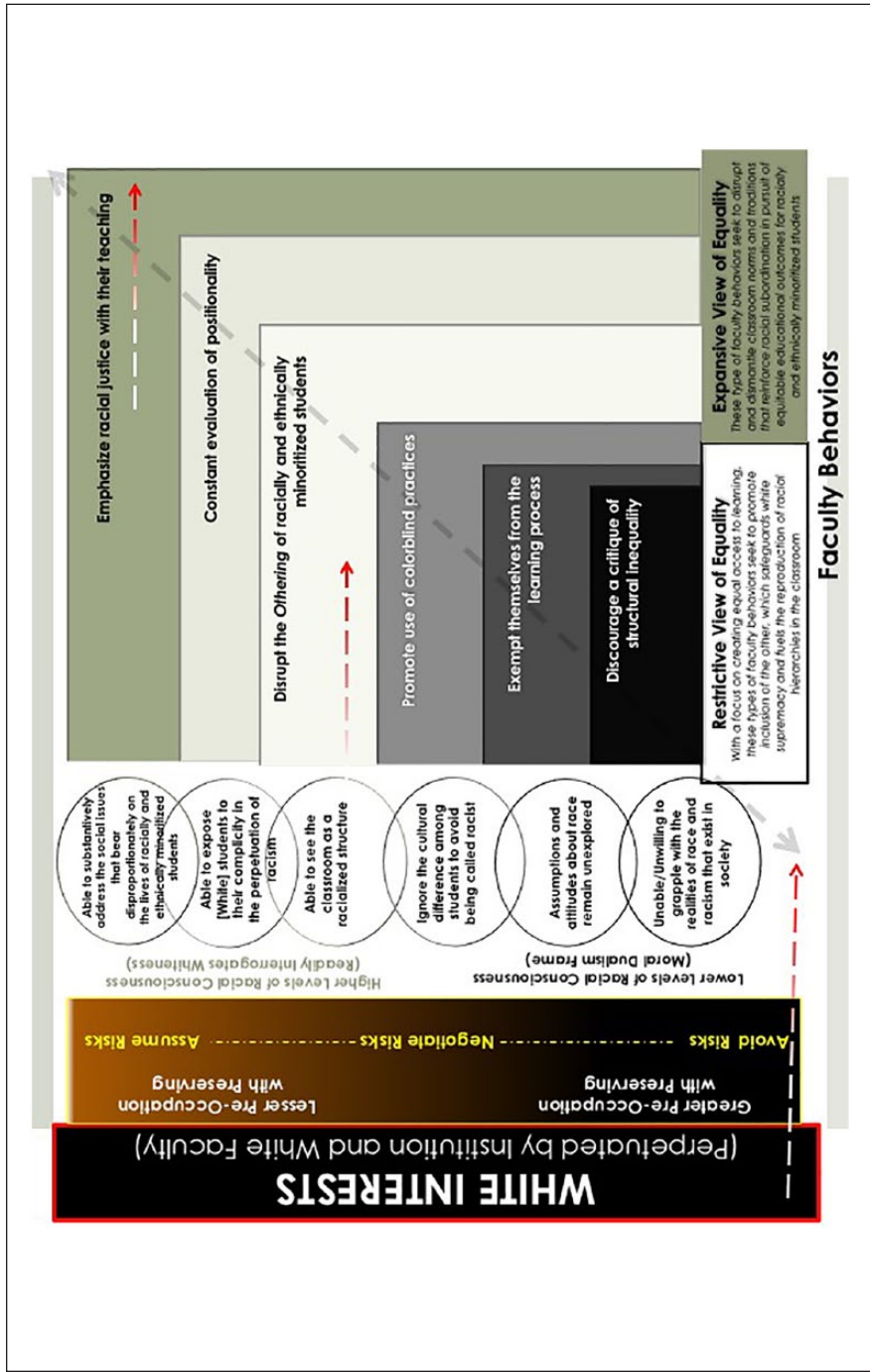


Figure 1. White racial consciousness and faculty behavior model.

educational outcomes for racially minoritized students. Emerging from constructivist grounded theory research, the WRC/FB model is informed by critical race theory and extends Crenshaw's (1988) framework of restrictive and expansive views of equality in antidiscrimination law. According to Crenshaw, an expansive view of equality emphasizes equality as the end goal, in the establishment of racial equity. A restrictive view of equality is more concerned with the prevention of future wrongdoings, and race-based prejudice, discrimination, and violence are treated as isolated incidents. Furthermore, the legal redress of wrongdoing serves the interests (e.g., psychological or material benefits) of White people (Crenshaw, 1988). Haynes' WRC/FB model adapts Crenshaw's work to postsecondary educational settings and enables a critique of the racial disparities created by and filtered through higher education.

Participants in Haynes' study self-identified as White and taught full-time at the college-level, regardless of discipline. Consistent with the procedures for grounded theory, multiple modes of data (i.e., survey data, participant interviews, classroom observations) were collected and analyzed using the constant comparative method (see Haynes, 2017). The WRC/FB model has three complex and interdependent dimensions: racial consciousness, faculty behavior, and White interests. Racial consciousness is characterized as a complex understanding about the racialized nature of the world, requiring critical reflection on how assumptions, privilege, and biases about race shape a White person's worldview. Study findings suggest that White identity formation and racial consciousness are not mutually exclusive. Participants described themselves as White, even if, they could not articulate how whiteness shapes their life or did not prefer to be described as White. Thus, the WRC/FB model posits that interrogating whiteness aids in the development of racial consciousness among White faculty. Faculty behavior captures the influence of racial consciousness on pedagogical decisions related to curriculum and course design that participants made knowingly and unknowingly. According to the model, White faculty with higher levels of racial consciousness tend to employ behaviors in their classroom reflective of an expansive view of equality that disrupts classroom norms and traditions that reinforce racial subordination and instead benefits all students. Faculty behaviors reflective of a restrictive view of equality tended to be employed by White faculty with lower levels of racial consciousness. The model illustrates how behaviors reflecting a restrictive view safeguard White supremacy and fuel the reproduction of racial hierarchies in the classroom.

The WRC/FB model also asserts that the link between White racial consciousness and faculty behavior also makes their faculty behavior susceptible to White interests. In situating the model, Haynes argues, racially minoritized students' interests in equitable educational outcomes will be accommodated only when, and as long as, those interests converge (Bell, 1995) with the interests of White faculty.

### *Expansive Views of Equality in the Classroom*

The WRC/FB model posits that White faculty members, who interrogate how whiteness has shaped their worldview, exhibit higher levels of racial consciousness. Such

interrogation and critique of whiteness allows White faculty to gain greater sensitivity to race and racism not only in their lives, but also in their classrooms. For example, White faculty whose behaviors reflect an expansive view understand the classroom as a racialized structure and thus take the necessary steps to shift the pedagogical culture from one where sole expertise is rooted in White ways of knowing to one where minoritized (and all) students' perspectives are valued. Moreover, the curriculum is designed to center students and teach them how their own development of racial consciousness is linked to mastery of professional competence in their intended industry/discipline.

According to the WRC/FB model, these faculty seemingly are less preoccupied with preserving White interests. White interest is a concept that derives from critical race scholarship on *interest convergence* by Derrick Bell (1995). Bell explained the interests of Black people in achieving racial justice are only accommodated when their interests converge with the political and economic interests of White people. Bell's notion of interest convergence, coupled with Crenshaw's framework, suggests that educational gains for racially minoritized students will be pursued when they serve White interests. White interests are both material and psychological in composition and revolve around the ability of White people to maintain primary political, social, and economic positioning (Harris, 1993).

That White interests are served through educational norms and traditions that cultivate White supremacy, such as academic freedom, faculty rank/status, and the academy's reliance on student course evaluations, would also suggest that White faculty are afforded choices with regard to the preservation of such interests, which are ultimately self-serving (Haynes, 2013, 2017). For White faculty with higher levels of racial consciousness, their lesser preoccupation with White interests means that they are more willing to assume the sacrifices associated with prioritizing racial justice over the benefits they accrue as White people. In other words, they are less concerned with White people (themselves included) maintaining primary political, social, and economic positioning and more committed to racial equity.

### *Restrictive Views of Equality in the Classroom*

When racial consciousness is underdeveloped, White faculty tend to evaluate race and its effects through a moral dualism frame. As such, these faculty are more likely to associate racism with the actions of White people who hold racist beliefs, rather than with a White power structure that enables White people to maintain racial group superiority in all facets of American life (DiAngelo, 2018, 2016; Leonardo, 2009; Milner, 2008). Likewise, as the WRC/FB model points out, these faculty also tend to maintain greater preoccupations with preserving White interests. For example, White faculty concerned with preserving White interests may readily decide against using course material that critiques Eurocentric perspectives or incorporates indigenous knowledges because their White colleagues and/or students believe that explorations of race and racism are not scholarly and have no basis in their discipline's curriculum. Behaviors that reflect a restrictive view of equality allow White faculty to remain loyal

to racist educational practices that reinforce racial oppression. To further illustrate how faculty behavior is balanced against the self-interests of White faculty, we revisit the fictional classroom of Arnie Cooper in the next section.

## Teaching Notes

Professor Arnie Copper is among the many STEM educators who view the learning of STEM curriculum as an intellectual exercise that is race-neutral (Martin-Hasen, 2016). We use the WRC/FB model to illustrate how racially minoritized college students can experience the classrooms of White STEM faculty who fail to see connections between their teaching, course content, and racial justice. Institutional leaders (e.g., department heads, provosts and academic deans) and faculty developers (directors of university centers for teaching and graduate preparation faculty) can use this case to generate a timely critique of the enduring racism shaping higher education in the United States and fostering hostile learning conditions on college campuses for racially minoritized students.

### *Racial Resistance in STEM Classrooms: The Restrictive View*

There are two occasions in our exemplar case where Arnie employs behaviors reflective of a restrictive view of equality. Arnie's class discussion about the avatar in the computer game about migrant farmers presented a prime opportunity for him to at least briefly, if not in a more substantive manner, discuss the experiences of migrant farm workers in the United States. He could have assigned readings beforehand to give students a context about migrant farmers to help them understand the racial and socio-economic implications of their status in the United States. Arnie might have also simply asked students in the class about their knowledge of migrant workers or had students conduct their own research to learn more about the population to inform how they later depict the avatar. Arnie realizes that such subject matter introduces a cultural component central to the game's design, but rather than address it, he chooses to forego the conversation altogether. On one hand, Arnie's decision is reflective of White faculty who believe that devoting time to discuss narrative and story is a poor use of time with students. On the other hand, Arnie's discomfort and in effect pedagogical resistance toward discussing race likely exist because of assumptions and/or attitudes he has about race that remain unexplored.

Faculty, like Arnie, who exhibit lower racial consciousness often exempt themselves from the learning processes and make pedagogical decisions that re-center whiteness. When this happens, White faculty maintain their position as expert. If Arnie, as expert fails to confront race and racism, his silence communicates the minimization of race and racism. Whether his students realize it or not, they have been taught that ignoring race is acceptable, given Arnie's inaction. Because Arnie did not think more deeply about how he could introduce more culturally rich material, he did not prompt his students to evaluate how their design decisions could reinforce widely held racist attitudes and/or assumptions about Latinx populations.

Instead of introducing more critical information, Arnie's restrictive view would have likely kept the classroom discourse "productive" by limiting the discussion about the avatar to game mechanics, instead of exposing students to the interplay between race, design, and story. If his efforts exposed the Latinx students to deficit depictions of themselves, he also permitted racial hierarchies to be reproduced in the classroom.

This case provides an additional opportunity to examine the influence that lower levels of racial consciousness has on the behaviors of White STEM faculty. Arnie introduced an activity in his Scripting for Games course without a discussion of how economy is understood by the authors of the readings he assigned or the students in the class. This, in turn, established Eurocentric concepts of economy as the default. This may also explain why Chad was not concerned with whether game moves made a player "too powerful," as in Western cultures the person who dominates is presumed to hold the power. As a White man in the United States, Chad represents a certain level of power and privilege that he is rarely prompted to think about. If Arnie had a higher level of racial consciousness, he would have responded differently upon hearing Chad's comment to Shana. Arnie could have interjected and used Chad's comments about improving the game, which associated winning with power and domination, as a learning moment to help him understand that in some cultures, power exists in community and kinship, rather than accumulation of wealth. Arnie would have also validated Shana's idea for the group to reach consensus about what is incentivized and ultimately valued in the game. Arnie would have noticed Liz and encouraged her to share her thoughts with the group, especially given research about the isolation that women and Students of Color often feel in STEM learning environments. Perhaps most important, Arnie would have rethought the decision to have the students reconceptualize the game of checkers based on *luck* and *economy*. Notions of luck and chance are rarely beneficial to marginalized groups because systemically, the odds are almost always stacked against them no matter how hard they work. Similarly, the idea of economy is commonly linked to money, wealth, and resources, to which racially minoritized populations tend to have less access.

White faculty who rarely, if at all, interrogate their whiteness are less equipped to support White students to do the same. Whether done deliberately or not, White faculty place racially minoritized students in vulnerable positions, when they as instructors exempt themselves from the learning process. When Arnie introduced a course assignment like this one without the adequate scaffolding, racially minoritized students, like Shana, are saddled with the responsibility of educating White students on how game strategy is influence by concepts of economy that vary by culture. Overall, Arnie's faculty behaviors reflect a restrictive view of equality and represent the actions of many White faculty in STEM who unconsciously, unknowingly, or willingly foster oppressive STEM classroom environments that maintain racism and White privilege. Arnie illustrates how White STEM faculty members resist racial consciousness by minimizing race and racism and ignoring the racial implications embedded in STEM teaching and learning.



## *Racial Consciousness in STEM Classrooms: Embracing More Expansive Views*

The need for more racially conscious faculty in STEM is both critical and complex. As noted earlier, many STEM faculty view diversity as an issue for other disciplines and may not readily see connections to their area of study. As Gay (2002) states, “Too many teachers and teacher educators think that their subjects (particularly math and science) and cultural diversity are incompatible or that combining them is too much of a conceptual and substantive stretch for their subjects to maintain disciplinary integrity” (p. 107). In addition, most STEM faculty members are never trained to approach their teaching and scholarship through a racially conscious framework. Therefore, they lack the necessary knowledge and skills to teach from a critical perspective. Furthermore, this type of approach is neither valued nor rewarded, particularly in comparison to the accumulation of grant funding to support research. The time, effort, and energy required to revamp STEM teaching is also an endeavor that requires significant time and resources to engage in restructuring one’s teaching philosophy to reflect racial consciousness. These are only a few of the many challenges that affect teaching in STEM and broadly across the postsecondary landscape.

Despite these challenges, there are strategies STEM faculty can implement to move from racial resistance to racial consciousness. Harper and Quaye (2007) explained,

It takes honesty and self-reflection to admit that one’s courses do not currently incorporate non-mainstream perspectives. Similarly, facilitating opportunities for students to learn through different views, content, and pedagogy will fail unless faculty members examine their own assumption, biases, and knowledge insufficiencies and assume responsibility for learning how to infuse diversity throughout the curriculum. (n.p.)

First, it is important to engage in reflection for self-awareness. Awareness of self requires a willingness to take risks, examine preconceived ideas and beliefs, and commit to change (Pope & Reynolds, 1997). Ortiz and Patton (2012) suggest that “Self-awareness is a cumulative process, one that ensures and expects that learning about oneself is a daily task” (p. 13). This would involve asking questions such as “Who am I?” “What are my beliefs and assumptions about race and racism?” “How does my understanding of race and racism filter into my teaching?” “How does my understanding of race and racism benefit or harm others?” Asking these types of questions allows individuals to think deeply about ideas they had previously given minimal or no attention at all.

Another strategy is for White faculty to explore these questions with a colleague or friend who is knowledgeable or one who is simply willing to listen and engage in the conversation in a thoughtful and critical way. White faculty with restrictive views of equality should also set aside time to immerse themselves in readings about race and racism, particularly those that illuminate whiteness and White privilege while grappling with the experiences of minoritized groups. For example, DiAngelo’s (2011) *White Fragility* and Gusa’s (2010) *White Institutional Presence* are informative scholarly

works that explain racial resistance and how such resistance filters into educational environments. The goal is for faculty who wish to promote and practice expansive views of equality through racial consciousness to learn more about themselves and to explore societal differences between groups promulgated by racial inequities (Berlak & Moyenda, 2001).

Faculty members committed to disrupting racial inequities in the classroom should also attend professional development workshops and seek other educational avenues that focus on culturally relevant pedagogical strategies that can inform their teaching in STEM classrooms. Beyond situating STEM course content within a larger socio/cultural/historic context, faculty members should focus on fostering learning environments where students feel like they matter (Abrams, Taylor, & Guo, 2013; Espinosa, 2011; Jett, 2013). This would mean relinquishing racist ideologies embedded in “weed-out” courses or the emphasis on competition. Instead, faculty should demonstrate an ethic of care that values collaboration and acknowledgment of the role racism plays in promoting STEM inequities. Students should be viewed as contributors to the learning process, and their experiences should be validated as one way to engage them in scaffolding knowledge.

Faculty members should read studies about “women and underrepresented minorities” in STEM to learn more about their experiences and the recommendations offered by scholars conducting this line of research (e.g., Chang et al., 2014; Fouad et al., 2017; Johnson, 2012). Similarly, in terms of in-class strategies, faculty should assign readings that not only focus on course topics, but also readings across disciplines that help students contextualize course content and situate it within real-world contexts shaped by privilege, power, and oppression. Classroom activities should be designed to help students gain an understanding of how to approach their studies from a more diverse and critically conscious lens. There is a wealth of information that can be used to promote inclusivity and racial consciousness, but faculty must be willing to seek out the information, particularly in an academic culture that does not value these ideals. “There is no shortage of quality information available about multicultural education. It just has to be located, learned and woven into the . . . classroom” (Gay, 2002, pp. 107-108)

For STEM faculty, particularly White STEM faculty to become more racially conscious, it is important to realize that disrupting the status quo will be unpopular and met with criticism. Such recognition is characteristic among faculty who are developing or who have developed more expansive views of equality in the classroom. For example, Moses Rifkin, a physics teacher in Seattle blogged about his experience of incorporating social justice into a physics course. Although supported by school leadership, Rifkin was met with outrage by *Fox News* and other conservative websites because he set aside time in his course to deal with racism and White privilege. The reality is that moving from a standpoint of racial resistance to racial consciousness requires thoughtful, uncomfortable, and hard work. However, it is a necessity to ensure the creation of STEM environments that reflect more expansive views of equality.

## Discussion Questions

1. A dominant narrative persists in STEM education that suggests its curriculum is race-neutral. As a result, an ideological script is transmitted in the classroom to restrict racially minoritized students' access to STEM degrees and careers. How might institutional leaders (e.g., department heads, provosts and academic deans) and faculty developers (directors of university centers for teaching and graduate preparation faculty) debunk this myth for STEM faculty and expose the connection between teaching, curriculum, and racial justice?
2. In what ways does this case depict racial climate issues that exist in your program, department, and/or college (i.e., micro and meso levels)? Discuss how these types of classroom interactions contribute to the hostile learning conditions that student protestors, such as those aligned with *Concerned Student 1950* at Mizzou, are demanding that institutional leaders address. What strategies might you employ to improve racial climate at the micro/meso levels and the overall campus learning conditions (macro level)?
3. Imagine that you observed Professor Arnie in the classroom and concluded that his teaching is reflective of a restrictive view of equality. How might you broach that conversation with him? How might you begin to help your faculty colleague understand how racially minoritized students might be experiencing his classroom?
4. According to Haynes' WRC/FB model, interrogating whiteness contributes to higher level of racial consciousness among White faculty. How would you advise a White faculty colleague to go about interrogating their whiteness? Specifically, what steps might your White faculty colleague take to have perpetual encounters with the "Self," a fundamental aspect of the self-work involved in interrogating whiteness.
5. How might the curriculum in a college teaching course be (re)designed to help White students with faculty aspirations to evaluate how whiteness has shaped their lives and teaching?
6. According to the WRC/FB model, some White faculty will do the work of developing their racial consciousness when, and for so long as, pursuing equitable educational outcomes for racially minoritized students serve their interests. What can institutional leaders do to signal to their faculty that developing high racial consciousness is an institutional priority? In your response, please identify the key people at the institution who you believe are ultimately responsible for teaching White faculty how to become more racially conscious.

## Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

## Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

## Note

1. Our use of racially minoritized includes Students of Color, particularly African American, Latinx/Hispanic, and Native American students. By racially minoritized we mean that people are not born minorities, but instead rendered as minorities in certain contexts and institutional settings maintained with an overwhelming and overrepresentation of whiteness.

## ORCID iD

Chayla Haynes  <https://orcid.org/0000-0002-4256-8628>

## References

- Abrams, E., Taylor, P. C., & Guo, C. J. (2013). Contextualizing culturally relevant science and mathematics teaching for indigenous learning. *International Journal of Science and Mathematics Education, 11*, 1-21.
- Bell, D. (1995). Brown v. Board of Education and the interest convergence dilemma. In K. Crenshaw, N. Gotanda, G. Peller, & K. Thomas (Eds.), *Critical race theory: Key writings that formed the movement* (pp. 20-29). New York: The New Press.
- Berlak, A., & Moyenda, S. (2001). *Taking it personally: Racism in the classroom from kindergarten to college* (Vol. 8). Philadelphia, PA: Temple University Press.
- Chang, M. J., Sharkness, J., Hurtado, S., & Newman, C. B. (2014). What matters in college for retaining aspiring scientists and engineers from underrepresented racial groups. *Journal of Research in Science Teaching, 51*(5), 555-580.
- Crenshaw, K. W. (1988). Race, reform, and retrenchment: Transformation and legitimation in antidiscrimination law. *Harvard Law Review, 133*1-1387.
- DiAngelo, R. (2011). White fragility. *International Journal of Critical Pedagogy, 3*, 54-70.
- DiAngelo, R. (2018). *White fragility: Why it's so hard for White people to talk about racism*. Boston, MA: Beacon Press.
- DiAngelo, R. J. (2016). *What does it mean to be white? Developing white racial literacy*. New York, NY: Peter Lang.
- Espinosa, L. (2011). Pipelines and pathways: Women of color in undergraduate STEM majors and the college experiences that contribute to persistence. *Harvard Educational Review, 81*, 209-241.
- Fairlie, R. W., Hoffmann, F., & Oreopoulos, P. (2014). A community college instructor like me: Race and ethnicity interactions in the classroom. *The American Economic Review, 104*, 2567-2591.
- Fouad, N. A., Chang, W. H., Wan, M., & Singh, R. (2017). Women's reasons for leaving the engineering field. *Frontiers in psychology, 8*, 875.
- Gay, G. (2002). Preparing for culturally responsive teaching. *Journal of Teacher Education, 53*, 106-116.
- Gusa, D. L. (2010). White institutional presence: The impact of whiteness on campus climate. *Harvard Educational Review, 80*, 464-489.
- Harper, S. R., & Quaye, S. J. (2007). Faculty accountability for culturally inclusive pedagogy and curricula. *Liberal Education, 93*(3). Retrieved from <https://www.aacu.org/publications-research/periodicals/faculty-accountability-culturally-inclusive-pedagogy-and-curricula>
- Harris, C. (1993). Whiteness as property. *Harvard Law Review, 106*, 1707-1791.
- Haynes, C., (2013). *Restrictive and expansive views of equality: A grounded theory study that explores the influence of racial consciousness on the behaviors of White faculty in the classroom*. Unpublished doctoral dissertation, University of Denver, Denver, CO.

- Haynes, C. & Joseph, N. (2016). Transforming the STEM system: Teaching that disrupts White institutional space. In N. M. Joseph, C. Haynes, & F. Cobb (Eds.), *Interrogating whiteness and relinquishing power: White faculty's commitment to racial consciousness in the classroom* (pp. 1-12). New York, NY: Peter Lang Publishing.
- Haynes, C. (2017). Dismantling the White supremacy embedded in our classrooms: White faculty in pursuit of more equitable educational outcomes. *International Journal of Teaching and Learning in Higher Education*, 29(1), 87-107.
- Jett, C. C. (2013). Culturally responsive collegiate mathematics education: Implications for African American students. *Interdisciplinary Journal of Teaching and Learning*, 3, 102-116.
- Johnson, D. R. (2012). Campus racial climate perceptions and overall sense of belonging among racially diverse women in STEM majors. *Journal of College Student Development*, 53, 336-346.
- Kaplan, S. E., Gunn, C. M., Kulukulalani, A. K., Raj, A., Freund, K. M., & Carr, P. L. (2018). Challenges in recruiting, retaining and promoting racially and ethnically diverse faculty. *Journal of the National Medical Association*, 110, 58-64.
- Kelly, B. T., Gayles, J. G., & Williams, C. D. (2017). Recruitment without retention: A critical case of Black faculty unrest. *The Journal of Negro Education*, 86, 305-317.
- Leonardo, Z. (2009). *Race, whiteness, and education*. New York, NY: Routledge.
- Martin-Hasen, L. (2016). Interrogating whiteness: The intersection of race, ethnicity, and science education. In Tuitt, F., Haynes, C., & Stewart, S. (Eds.), *Race, Equity, and the Learning Environment: The Global Relevance of Critical and Inclusive Pedagogies in Higher Education* (pp. 113-130). Sterling, Virginia: Stylus.
- Milner, H. R., IV. (2008). Critical race theory and interest convergence as analytic tools in teacher education policies and practices. *Journal of Teacher Education*, 59, 332-346.
- National Science Foundation & National Center for Science and Engineering Statistics. (2015). *Women, minorities, and persons with disabilities in science and engineering* (NSF 15-311). Arlington, VA: Academic Employment.
- Ortiz, A., & Patton, L. D. (2012). Awareness of self. In J. Arminio, V. Torres, & R. L. Pope (Eds.), *Why aren't we there yet: Taking personal responsibility for creating an inclusive campus* (pp. 9-32). Sterling, VA: Stylus Publishing.
- Poirier, J. M., Tanenbaum, C., Storey, C., Kirshstein, R., & Rodriguez, C. (2009). *The road to the STEM professoriate for underrepresented minorities: A review of the literature*. Washington, DC: American Institutes for Research.
- Pope, R. L., & Reynolds, A. L. (1997). Student affairs core competencies: Integrating multicultural awareness, knowledge, and skills. *Journal of College Student Development*, 38, 266-277.
- Price, J. (2010). The effect of instructor race and gender on student persistence in STEM fields. *Economics of Education Review*, 29, 901-910. doi:10.1016/j.econedurev.2010.07.009
- Stout, R., Archie, C., Cross, D., & Carman, C. A. (2018). The relationship between faculty diversity and graduation rates in higher education. *Intercultural Education*, 29, 399-417.
- Thomas, U., & Drake, J. (Eds.). (2016). *Critical research on sexism and racism in STEM Fields*. Hershey, PA: Information Science Reference.
- Tuitt, F., Haynes, C., & Stewart, S. (2018). Transforming the classroom at traditionally White institutions to make Black lives matter. *To Improve the Academy: A Journal of Educational Development*, 37(1), 63-76. doi:10.1002/tia2.20071
- U.S. Department of Education & National Center for Education Statistics. (2016). *The Condition of Education 2016* (NCES 2016-144). Washington, DC: Characteristics of Postsecondary Faculty.

Walker, R. (2016). *The next step in diversifying the faculty*. The Chronicle of Higher Education. Retrieved from <https://www.chronicle.com/article/The-Next-Step-in-Diversifying/238138#comments-anchor>

### Author Biographies

**Chayla Haynes** is an assistant professor of higher education administration in the Educational Administration and Human Resource Development Department at Texas A&M University, College Station. She is a critical qualitative researcher with research interests and expertise in critical and inclusive pedagogies, Black women in higher education, and critical race and intersectionality scholarship. Haynes is co-editor of *Interrogating Whiteness and Relinquishing Power: White Faculty's Commitment to Racial Consciousness in STEM Classrooms* (Peter Lang Publishing) and *Race, Equity and the Learning Environment: The Global Relevance of Critical and Inclusive Pedagogies in Higher Education* (Stylus Publishing).

**Lori D. Patton** is professor of higher education and student affairs in the School of Education at Indiana University. Her research agenda focuses on African Americans in postsecondary contexts, Critical Race Theory applied to higher education, college student development theory, and the influence of campus environments on student experiences.