

Race and physics teaching, and the fair: A call to all physics educators for manuscripts on a rarely discussed topic

Gary White

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Race and physics teaching, and the fair

A call to all physics educators for manuscripts on a rarely discussed topic

I love the fair! The mix of people, the thrilling rides, the fun and games, the comfort food, the prizes, the shows, and the exhibits—they all beckon and glow in my memory. Oh, and the smells! Breathe deeply; rarely does one get to experience such a vast range of olfactory stimulation as at a fair!

In my youth, though, the very best part was traveling to the state fair in Shreveport, and living in a trailer on the fairgrounds for a week with my cousins. Our job was to take care of the pigs and cows while our parents continued with their workaday lives back home. Imagine if you will... adolescent boys being excused from school for a whole week, subjected to very little grown-up supervision, and let loose in the carnival atmosphere that was the Louisiana State Fair. The days and nights were filled with sloppin' the hogs, cruisin' the midway, waterin' the heifers, checkin' out the two-headed calf, grooming and showing our animals, ring-tossin' to win that giant stuffed Snoopy dog (and many tiny plastic ones en route), tending to our family's preserving jars, artwork, insect collections and other 4-H exhibits, and, of course, eatin'—eatin' fried funnel cakes, fried corncobs-on-a-stick, fried turkey-legs, and cotton candy (unfried), and when we ran out of money, pork 'n beans and Vienna sausages from a can. I think we had some sense of how fortunate we were—we were pretty careful to keep up with our chores and lucky enough to stay out of trouble so that we were allowed to return year after year. Even so, I must say that it never occurred to me that I was basking in the glow of white male privilege, redneck-style.¹

Standing out amidst this mostly welcome flood of nostalgia is one particularly telling memory, however. I vividly remember the four bathrooms (count them, four!) in the entranceway to the exhibit hall at the Ouachita Parish Fair, the local event that led up to the state fair. Four seemed a bit much to me initially, even though hundreds of people would file through that building during the fair to see the homemade quilts, prize-winning produce, and forestry posters. Upon closer inspection, I remember noting that while the lettering on the door was painted over, it was still easy to read the messages beneath the whitewash—"White Men," "Colored Men," "White Women," and "Colored Women"—but I should admit that it had no real impact on me at the time. To me, it just seemed like a part of the landscape, a curious but largely irrelevant vestige of the past.²

This was in the late '60s and early '70s, just after my own Sterlington High School and all of the public schools in that part of the country were "integrated."³ What kind of people would have painted over the door lettering but made sure that everyone could still see who should go where? Prejudiced, ignorant, bigoted, racist and/or scared white people like me and my relatives and our neighbors, that's who... certainly I don't recall anyone I knew complaining about it (or, perhaps even more revealing, even mentioning it!).

What does this little narrow slice of a trip down memory lane have to do with physics education, you ask? Well, mostly I'll confess that it serves to give a little context for the rest of what I want to say. And it also serves as an example of the way in which

the white majority in power tends to overlook, misremember, and whitewash the impact of past unfairness (even at the fair). Perhaps, in some cases, this tendency can be attributed to the misguided notion that not talking about race, and past (and current) race-based inequities, will make the current world more "colorblind,"⁴ more fair, or even more productive. But generally I think I tend toward this behavior because in my mind, being reminded of my privileges diminishes my own sense of accomplishment, and the more that my advantages are displayed, the less others will value my achievements, I fear. I'm working on that, by the way. This example also shows how the structural features of sanctioned racism are often retained and continue to operate as intended, even after lip service is paid to the elimination of said racism, leaving a pernicious residue of less visible, but more difficult to remove, systemic problems. Finally, I will add that I am hopeful that perhaps traveling down this nostalgic path will help make the case for more explicit treatment of a subject that many physics educators have worried about for decades with few successes to note, that of the disparity between the country's racial makeup and that of the physics classroom.

As I write this, much of the physics community is reacting to the SCOTUS Chief Justice's questions in the affirmative action case regarding college admissions⁵ at the University of Texas: "What unique perspective does a minority student bring to a physics class?... And I'm just wondering what the benefits of diversity are in that situation?" As I struggle to pen my own reaction to these questions, from someone of this stature, I am faced with my own numerous inadequacies. But fortunately there are many in our community who are much more articulate and quick in answering these questions straight-up (as though the inquisitor merely wanted evidenced-based factual responses or even experience-based emotional responses), and in engaging these questions at the meta-level, where the justice's hidden presumptions undoubtedly bolster the white male power agenda. Among the more comprehensive and swift rebuttals is "An Open Letter to SCOTUS from Professional Physicists,"⁶ signed by more than 2000 physicists and astronomers, and drafted by members of the Equity & Inclusion in Physics & Astronomy group. In addition to providing straightforward answers to Chief Justice Roberts' questions, while rejecting their underlying premise,⁷ and further amplifying the reasons why physics and its study cannot be separated from the sociological context in which it is experienced and leveraged, it also repudiates the parallel, and more repugnant, remarks of Justice Scalia, who decided to invoke the idea that African Americans should perhaps go to "less advanced" schools, schools where they won't feel like the "classes are too fast for them," without any apparent consideration of the evidence to the contrary,⁸ or without consideration of the explicit unfairness of this kind of proposition. As the letter goes on to explain, "Blaming affirmative action for our community's lack of progress in this regard is not only wrong, it is plainly ignorant..."

There have been many other responses to the justices'

remarks, including an impressive collection by noted African-American physicists, gathered and annotated by Chanda Prescod-Weinstein in her blog post, as well as a reaction from the American Physical Society's president,⁹ and I am sure there will be more. I am grateful to be part of a community that can respond so quickly and authoritatively and eloquently to the misinformation purveyed by the players in this case, but despite the recent widespread visibility, I expect that much of this conversation will go unnoticed, once again whitewashed, perhaps even with only harmful traces remaining. I want to see the conversation about race in the classroom continue beyond its current boundaries, and to be more a part of the everyday dialogue of practicing physics teachers, and to inform a much larger fraction of the educated populace.

So I conclude by issuing a call for papers on the topic of race and physics education, an invitation to write and submit manuscripts to *TPT* covering as many facets of the issue as can be imagined—culturally responsive teaching, student-instructor cross-cultural collaborations, stereotype threat, implicit bias, statistical data and analysis of student and teacher populations, white privilege, intersectionality, cultural taxation, power dynamics in the classroom, effects of integration and segregation, new curricular ideas, bias in established curricula, impacts of systemic racism on physics education and physics students, and other topics along these lines. As with all *TPT* manuscripts, these new submissions will be peer-reviewed by a variety of folks with as much expertise in the areas of physics teaching and issues of race as I can find, so as to better ensure that what you see within these pages is informed by evidence and the consideration of many knowledgeable perspectives. While I have framed this meandering call amid the ambiance of this white male physics teacher's memories of the fairgrounds and its culture, I am inviting all physics educators to respond, to be more intentional about addressing race in the classroom, in their conversations about physics education, and in their research.

Why issue this new call for papers? Because it is rare to see a manuscript with the word “race,” especially if you set aside the ones referring to competitive contests of speed. In fact, Moses Rifkin's inspiring description of his course on p. 72 is one of the very few that I remember on this topic in approximately 1000 submissions received since I have taken on the editor role, other than the recent informative columns by Susan White and Dan MacIsaac devoted to the issue.^{10, 11}

I look forward to reading about what you have learned about the subject of race and physics teaching, and to sharing your ideas with other physics teachers.¹² Perhaps as we flesh out the pages of *TPT* further with articles of relevance such as these, it will help us get one step closer to equity and equitable access to the benefits that a modern education can offer in this world. That's the hope, anyway.

It's only fair.



Gary White

References

1. This may need a little explanation—camping out at the fairgrounds didn't seem to be an option for the girl cousins in our family (even though their exhibits and animals won plenty of prizes), and while there were many people of color on the midway enjoying the rides and fun, I recall very few participating in the livestock exhibits. Perhaps there were exceptions, but most

of the people who received the full benefits from this kind of experience were white and male, like me.

2. My recollections of the fair, then, are satisfyingly rich and largely positive, save this one, much like the word “fair” itself can take on many different nuances of meaning. Because it can mean everything from equitable to valid to in-bounds to beautiful to pleasant to middling to agreeable to blonde (!), one occasionally forgets the subtle way that language can serve (as can nostalgia) to preserve the status quo.
3. Gary D. White, “Integration...by parts,” *Phys. Teach.* **51**, 328 (2013); <http://dx.doi.org/10.1119/1.4818364>.
4. While the idea of a “colorblind” approach to the world is appealing to some, it doesn't strike me as a very practical way to think about the real world we live in, especially with its legacy of centuries of overt and systemic racism. In any case, there is much evidence to indicate that the adverse effects of a “colorblind” approach versus a “multicultural” approach are substantial. See, for example, Deborah Son Holoien and J. Nicole Shelton, “You deplete me: The cognitive costs of colorblindness on ethnic minorities,” *J. Exp. Soc. Psychol.* **48**, 562–565 (2012) and references therein.
5. See Steven T. Corneliussen's summary of the case and early responses in *Physics Today* for more detail, <http://scitation.aip.org/content/aip/magazine/physicstoday/news/10.1063/PT.5.8155>.
6. <https://eblur.github.io/scotus/about.html>.
7. That premise being “the presence of minority students and the existence of diversity need to be justified, but meanwhile segregation in physics is tacitly accepted as normal or good,” and as the letter further indicates, one wonders why Roberts didn't ask what unique perspectives white students bring to a physics class or what the benefits of uniform student demographics are. Interestingly, John Asher Johnson, one of the leaders in the field of exoplanet detection, adds this amusing and thoughtful physics-y bit on his blog, <http://mahalonottrash.blogspot.com/2015/12/the-subtle-yet-real-racism-of-supreme.html>: “The Justice might as well have asked how unicorns fly and the attorney responded with an explanation of the Bernoulli effect”
8. <http://www.brookings.edu/research/papers/2013/03/07-supreme-court-chingos>, for example.
9. See <https://medium.com/@chanda/blackmindsmatter-black-beautiful-responses-to-scotus-9fb280d5be00#.eccspms5z> and <https://www.aps.org/about/governance/letters/scotus.cfm>.
10. Susan C. White, “And the Survey Says...” columns “Minority participation in high school physics,” *Phys. Teach.* **53**, 376 (Sept. 2015) and “High school seniors by race and SES,” *Phys. Teach.* **53**, 520 (Dec. 2015), and related columns in the series.
11. Dan MacIsaac, “WebSights” columns “Physics, equity, and social justice: Why are there so few black physicists? by Moses Rifkin,” *Phys. Teach.* **53**, 447 (Oct. 2015) and this month's column on the Supreme Court discussions on p. 126.
12. For insights into ways in which the conversation on race has been marginalized in past research and some guidance on how to proceed more productively in the future, see Amy Noelle Parks and Mardi Schmeichel, “Obstacles to addressing race and ethnicity in the mathematics education literature,” *J. Res. Math. Educ.* **43** (3), 238–252 (2012).

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