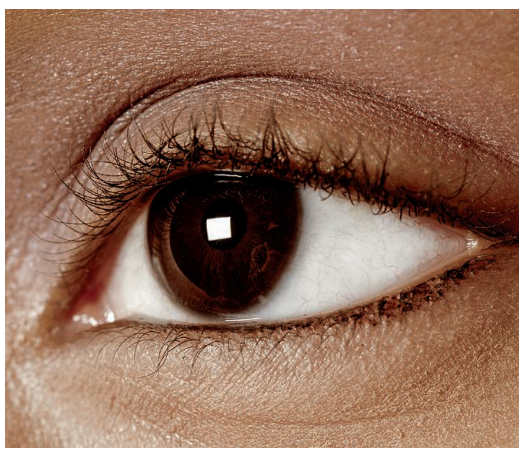
EDITORIAL

Einstein v. Roberts

In the recent U.S. Supreme Court hearing on A. Fisher v. the University of Texas about university admission policies regarding minority students, Chief Justice John Roberts asked, "What unique perspective does a minority student bring to a physics class?" As an African-American physicist researching string theory, and a teacher of university students since 1972, I have a response.

Issues related to race in the United States have created barriers since the nation's founding, determining which citizens experience benefits, and which deprivations. This problem is not new for physicists. Albert Einstein's essay "The Negro Question" includes "What…can the man of good will do to combat this deeply rooted prejudice? He must have the courage to set an example by word and deed, and must watch lest his children become influenced by this racial bias." Einstein described racism as a "disease," and he recommended principles to end discrimination, aligning with the O. Brown v. the Board of Education of Topeka, Kansas, decision by the Supreme Court in 1954 to desegregate public schools.



"…a different perspective is an asset in science…"

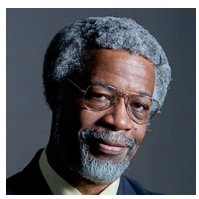
Chief Justice Roberts' question—premised on the idea that a person's background, including race, is irrelevant in science—shows a fundamental misunderstanding of both science and human creativity. Science is a creative process, which is why the enterprise needs diverse thinking. The Chief Justice's physics class may have consisted of plugging numbers into equations to find how long a dropped ball takes to reach the ground. But today's science classes often strive for creative exploration and collaboration to foster innovation. This played out recently in my upper-level undergraduate class. Students worked in small groups to solve a problem involving vector calculus and group theory—mathematics related to the discovery of subatomic particles such as the Higgs boson. In one group, two European-American students led discussions into a mathematical dead end. An African-American group member eventually wrote something on the board, which, when finally noticed, unstuck the group, and the problem was solved. Days afterward, the situation recurred, but this time, the group paid attention to the minority student, asking, "How did you come to that answer?" The students learned more than vector calculus that day. The majority students understood that a different perspective is an asset in science, while the minority student gained peer creditability and confidence. Together, the members became more eficient as problem solvers.

This is only an anecdote, but it shows what can happen in real-world classrooms. Several books have described the efficacy of diversity for the sake of innovation. For example, Scott E. Page explains that diversity's superiority emerges when a problem is difficult; that is, when no single individual always finds a solution, particularly in situations requiring creativity.

In 1969, I entered the Massachusetts Institute of Technology (MIT) expecting to be different from most of the other new undergraduate students. Although often challenging, I found that my difference could be an advantage: Distinctive backgrounds can lead to different approaches to framing problems. If MIT had been legally bound then to admissions based solely on test scores, I would never have been admitted. It would have been a personal loss, but more importantly, unique mathematical and physics ideas created in my career, and tied to my idiosyncratic framing of problems, might never have seen the light of day.

Minorities have made progress in science, as my own life attests. People of color and women are the fastest-growing segments of the U.S. college population. But discrimination continues. Each individual brings unique experiences that influence the capacity to move science forward in creative ways. Colleges need ways to recognize this in admissions processes. In the meantime, the Fisher v. Texas decision is poised to shape how and whether people like me can emerge in future science at its highest levels.

– S. J. Gates, Jr.



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