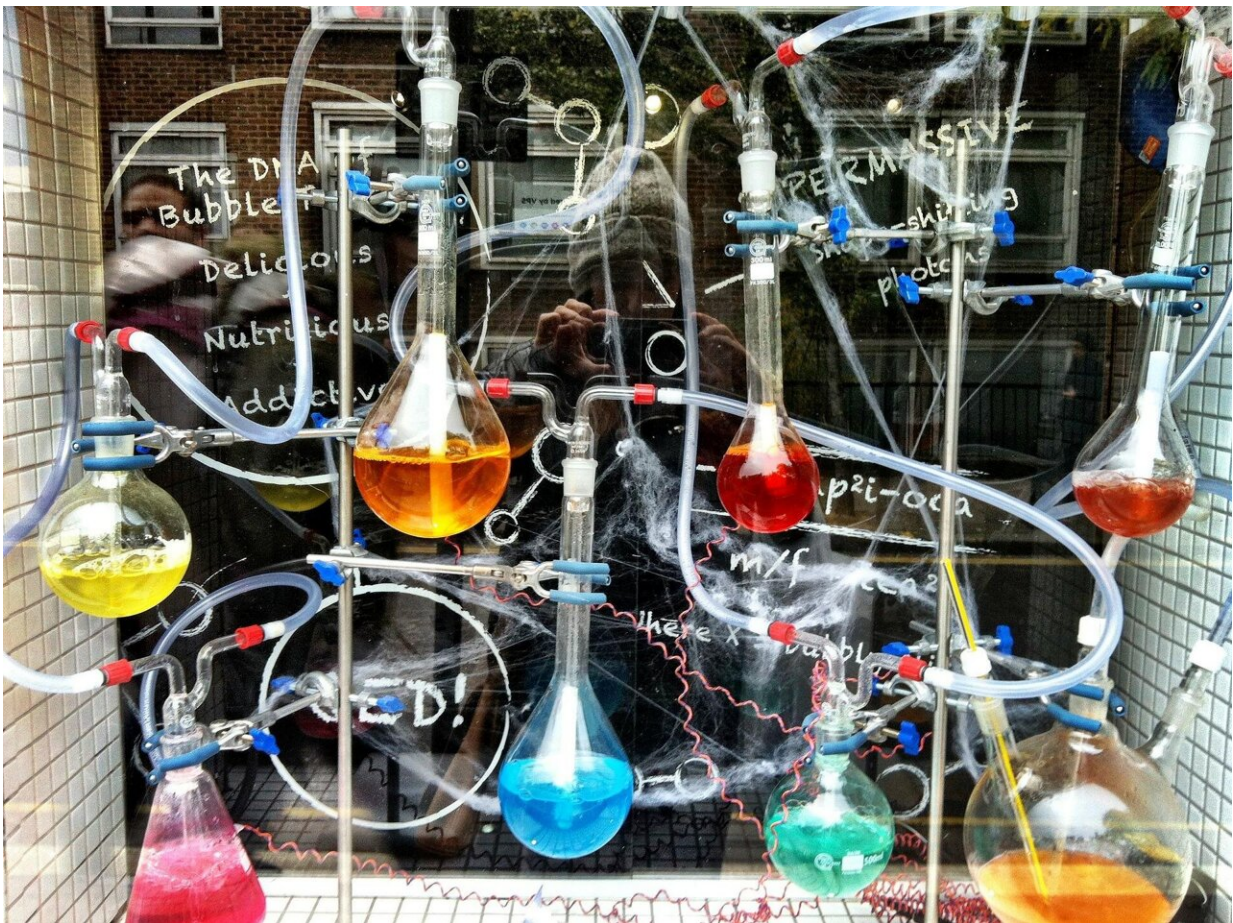


# New paper proposes incorporating anti-racism in life sciences education

July 24 2023, by David Colgan



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In the story of Charles Darwin, there are two often-omitted footnotes:

He was taught by a Black former enslaved man, John Edmonstone, and he was assisted in his groundbreaking research by a Black servant, Syms Covington.

Darwin's theories of evolution and ecology could not have been developed without the knowledge of taxidermy he learned from Edmonstone, nor without Covington's support during his famous expedition to the Galapagos Islands, according to Kiana Foxx, who recently earned a doctorate in education from UCLA.

Foxx is a co-author of a new paper, published in *Trends in Technology & Evolution*, that proposes a framework for incorporating interdisciplinary and anti-racist approaches in the teaching of ecology, evolution and [conservation biology](#). Without improving [teaching methods](#) in the sciences, the researchers write, the role of [people of color](#) and Indigenous groups is left out of classrooms, where a lack of inclusion negatively affects all students.

"Students often don't know that there were people of color who were doing [science](#), because in the textbooks, they don't really talk about it," said Foxx, a former high school educator.

Such omissions add to the perception that science education and careers in the sciences aren't for people of color, which only worsens the existing disparities in classrooms and workplaces, Foxx said. According to a Pew Research poll in 2018, Black students earned just 7% of bachelor's degrees in sciences, technology, engineering and mathematics—the so-called STEM fields—in the U.S., which is less than their share of all bachelor's degrees (10%) and of the population overall (around 12%).

To become more anti-racist, the authors write, instructors should examine their own racial identities and how they relate to their classes

and courses. Teachers should have the "vulnerability" to implement changes, be open to critique and avoid becoming defensive, and learn through failure. The authors also argue for incorporating discussions of history, policy and economics into the study of STEM subjects in order to address how racism has affected—and continues to affect—those fields.

Lead author Benjamin Ha, a UCLA doctoral [student](#) in ecology and [evolutionary biology](#), said he learned the importance of incorporating knowledge from multiple disciplines and anti-racism in [science education](#) while teaching an undergraduate seminar on the history of racism in biology research. The seminar explored how to contextualize racism through sociology, economics and policy, and how that racism has influenced scientific innovations over the years.

Ha said improving STEM curricula will require teachers and school leaders to invest extra effort in presenting more complete histories of scientific progress, because the prevailing narratives focus on accomplishments by white men of European ancestry while ignoring contributions from—and the exploitation of—Indigenous groups and people of color.

"It's as if European men are the only ones responsible for advancing scientific discovery," he said. "When you continue with that thought, it trickles down to present day when people continue to have this bias that science is only advanced by white people."

That bias, Ha said, is repeatedly reflected in studies that have found discriminatory impact in hiring, the awarding of research grants and other actions that perpetuate bias and create barriers to equity.

The paper also goes beyond curriculum to address practices in classroom instruction. Professors and teachers should be aware that something as

seemingly innocuous as letting students choose their own partners for group projects, the authors write, can alienate students of color who may be excluded due to race-related stereotypes about their academic abilities.

**More information:** Benjamin A. Hà et al, Interdisciplinary approaches to advancing anti-racist pedagogies in ecology, evolution, and conservation biology, *Trends in Ecology & Evolution* (2023). [DOI: 10.1016/j.tree.2023.05.003](https://doi.org/10.1016/j.tree.2023.05.003)

Provided by University of California, Los Angeles

Citation: New paper proposes incorporating anti-racism in life sciences education (2023, July 24) retrieved 27 April 2024 from <https://phys.org/news/2023-07-paper-incorporating-anti-racism-life-sciences.html>

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